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Resilience in Youth Under Investigation for Maltreatment Exposure: Perceptions of Support, Monitoring, and School Engagement and the Effects on Self-Reported Delinquency

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**Resilience in Youth Under Investigation for Maltreatment Exposure: Perceptions of
Support, Monitoring and School Engagement and the Effects on Self-Reported
Delinquency**

by

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Dedication

To my two amazing sons, Fred and Andreas. Remember to shoot for the moon, even if
you miss, you will land among the stars.

To Dale, my rock, thank you for helping me achieve my dreams.

Without you three, this adventure would have been meaningless.

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much yours as it is mine. I hope the following words galvanize you as much as they have me:

“You must be the change you wish to see in the world”- Gandhi, n.d.

Resilience in Youth Under Investigation for Maltreatment Exposure: Perceptions of Support, Monitoring and School Engagement and the Effects on Self-Reported Delinquency.

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In national surveys of youth being investigated as potential victims of maltreatment, outcomes suggest that being involved with Child Protective Services (CPS), regardless of the final case determination, can be considered a risk event, changing youth's life trajectory and increasing the likelihood of negative outcomes as they enter young adulthood. The negative outcomes these youth experience as young adults—increased risk of poverty, higher rates of mental health symptoms, higher rates of domestic violence—have been shown to be risk factors associated with becoming a perpetrator of child maltreatment.

Applying a resiliency framework to the issue of maltreatment shifts the focus from psychopathology to positive adaptations despite risk exposure. The building blocks of the resiliency framework are protective mechanisms, variables that can shift a potentially negative life trajectory by promoting positive adaptations in three core areas of competencies: social, academic and conduct. This study was designed to examine the

potential protective effects of perceived support by a caregiver, perceived monitoring, and school engagement, using delinquency as a measure of conduct competence.

Support by caregiver is defined by qualities such as warmth and security, as well as supporting adolescent autonomy development. Previous research has shown that for most adolescents a positive, supportive relationship with a caregiver serves as a protective mechanism reducing the likelihood of engagement in delinquent acts. Research has shown that adolescents who are actively monitored by adult caregivers are less likely to experience negative outcomes. School engagement has more mixed results depending on the underlying components examined and the population being studied.

A latent variable structural equation model (SEM) was developed and tested using a sample of 1054 youth aged 11 to 17 who were involved with Child Protective Services. Participants were drawn from the National Survey for Child and Adolescent Well-Being II (NSCAW-II). The SEM model tested the direct effects of the latent variables of perceived support, perceived monitoring, and school engagement, as measured at baseline, on overall delinquency and on subtypes of delinquency 18 months later. Results of the study suggested that higher levels of perceived support by a caregiver led to reduced reports of subsequent minor offenses. Youth who reported higher levels of monitoring by caregivers at baseline reported higher levels of offenses against persons and minor offenses 18 months later. Conversely, youth who reported higher levels of school engagement at baseline reported significantly lower levels of offenses against people and property and fewer minor offenses 18 months later. Results of this study highlight the important role schools play as a resource

for at-risk youth, supporting positive adaptation. The unexpected outcomes associated with monitoring imply *how* and *when* monitoring is measured can affect delinquency.

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Chapter 1: Introduction

Resilience has been defined as “a class of phenomena characterized by good outcomes in spite of serious threats to adaptation or development” (Masten, 2001, p. 228). Resiliency is observed only when two criteria have been defined and met: first, a child is exposed to a risk event; second, a child shows subsequent competence in an identified developmental area (Masten, Best, & Gramezy, 1990; Masten & Powell, 2003). Risk events are defined as environmental, familial, or individual experiences that research has proven reduce a child’s likelihood to thrive and that pose a threat to normative development (Howard, Dryden & Johnson, 1999). In the field of resilience, three areas of competence have been identified: social, academic, and conduct (Masten et al., 1999; Masten & Powell; 2003; Masten & Tellegen, 2012). These competencies remain relatively stable over time and are predictive of future competency achievement (Masten & Coatsworth, 1998; Masten et al., 1999).

The basic definition of maltreatment, provided by Federal law, includes neglect, physical abuse, sexual abuse, and psychological maltreatment (U. S. DHHS, 2015). Being under investigation by Child Protective Services (CPS) for potential maltreatment has been documented as a risk event for children and youth. Negative outcomes include lower academic achievement, increased likelihood of living in poverty as a young adult, and high rates of anxiety, depression, aggression and inattention type behavioral problems (RTI, 2008)

The building blocks of resilience are protective mechanisms, which are comprised of variables that interact with risk exposure and either mitigate the negative effects or

promote positive adaptation in the face of adversity (Afifi & MacMillan, 2011; Gramezy, 1993; Masten, et al, 1990; Powers, 2014; Rutter, 1987). Protective processes include external family-level factors such as closeness with a caregiver, community-level factors such supportive relationships with adults outside the home, and internal factors such as intelligence and feelings of self worth (Afifi & MacMillan, 2011; Benzie & Mychasiuk, 2009; Gramezy, 1993; Masten et al., 1990; Masten & Tellegen, 2012; Rutter, 1987). Protective mechanisms have the potential to change a child's developmental trajectory by helping a child achieve social, academic, and conduct competence (Rutter, 1987)

High caregiver-child relationship quality, defined by warmth, sensitivity, nurturance and responsiveness to a child's needs, has been shown to function as a protective factor for children and youth (Sheridan, Eagle & Dowd, 2006). In addition, low criticism and high support from a caregiver toward a child or youth is associated with decreased delinquency and substance use (Abar, Jackson & Wood, 2014). High caregiver-child relationship quality has also been associated with a reduced risk of PTSD and depression, and a reduced risk of status and violent offenses (Houshyar & Kaufman, 2006; Sousa et al., 2011). Even with children already involved with the juvenile justice system, a high quality relationship with caregiver has been consistently found to reduce delinquent acts (Hoeve et al., 2012). Further evidence to support the notion that a positive caregiver-child relationship can serve as a protective mechanism comes from the field of evidence-based treatments. Evidence based treatments, aimed at reducing disruptive behaviors in children and youth, recommend the inclusion a parent-training component, with the goal

of training caregivers how to respond effectively toward disruptive or negative behaviors (Eyberg, Nelson & Boggs, 2008).

Parenting practices that have been linked to the reduction of negative behaviors in youth include a guardian's ability to effectively monitor child and youth behavior and notice signs of substance use and antisocial or risk taking behavior (Dishion & McMahon, 1998). Monitoring was originally conceptualized to include components such as supervision and structuring (Dishion & McMahon, 1998). More recently, seminal work by Stattin and Kerr (2000) refined the construct to include parental solicitation, parental control, and youth disclosure, differentiating between information parents attempt to get from youth and children (parental solicitation) and information that youth voluntarily disclose (youth disclosure), with parental control representing the more traditional perspective of monitoring as supervision and structuring.

In general, effective monitoring has been linked to increased adaptability and resiliency, as well as increased academic motivation and subsequent achievement in youth (Brody & Flor, 1998; Kristjánsson & Sigfúsdóttir, 2009; Martinez, DeGarmo, & Eddy, 2004). Ineffective monitoring has been linked to increased risk behaviors such as alcohol and drug use (Martins, Storr, Alexandre, & Chilcoat, 2008). As a protective mechanism, the extent to which a caregiver is able to monitor and intervene when youth exhibit potentially delinquent behavior or interact with delinquent peers has been shown to substantially decrease the likelihood that the youth will subsequently engage in antisocial or delinquent behavior (Dishion & McMahon, 1998; Lahey, Van Hulle, D'Onofrio, Rodgers, & Waldman, 2008).

School engagement has also been shown to mitigate negative outcomes due to exposure to risk events for youth in general as well as for at-risk youth. School engagement has been conceptualized to include school, teacher, and peer attachment, and school commitment, as well as emotional, cognitive, and behavioral engagement (Bond et al., 2007; Fredricks, Blumenfeld, & Paris, 2004)

Overall, school engagement has demonstrated positive effects, for example increasing school effort and the development of prosocial behaviors that encourage peer cooperation (Urduan & Schoenfelder, 2006). School engagement has also been shown to act as a protective mechanism with at-risk youth, mediating the effects of maltreatment by increasing academic success and reducing risk behaviors (Haskett, Nears, Ward, & McPherson, 2006; Perkins & Jones, 2004).

School engagement has shown mixed effects in reducing delinquency involvement, depending on how school engagement is conceptualized and the type of participants. For example, when school engagement was conceptualized as school commitment, there were no documented effects upon aggression for youth in general (Cavendish, Nielsen, & Montague, 2012). Youth who reported higher levels of school bonds, however, subsequently reported lower levels of school delinquency and delinquency in general (Freidenfelt Liljberg, Eklund, Väfors Fritz, & af Klintberg, 2011; Hart & Mueller, 2013). For maltreated youth, school engagement has shown no effect on subsequent delinquency (Grogan-Kaylor, Ruffolo, Ortega, & Clarke, 2008). Due to the differential effects school engagement has on subsequent delinquency, the need to continue clarifying the potential role it can play as a protective mechanism is highlighted.

The focus of this study is the examination of perceived support by a caregiver, monitoring, and school engagement as protective mechanisms for youth who come into contact with CPS, and the subsequent effect of these protective factors on self-reported delinquency.

Delinquency is used in this research because it is an important correlate of conduct competence. Engagement in delinquent acts has important implications as involvement in the Juvenile Justice (JJ) system contributes to additional negative outcomes for children. For example, adolescents are more likely to drop out of school once they are arrested (Hirschfield, 2004). Involvement in the juvenile justice system has been found to predict transition into the adult criminal justice system, with estimates ranging from 25 to 90% (Coleman, Kim, Mitchell-Herzfeld, & Shady, 2008). Furthermore, by age 28, about 88% of delinquent youth had become perpetrators of abuse and neglect themselves (Coleman et al., 2008).

The purpose of this research is to investigate whether perceptions of support by a caregiver, monitoring, and school engagement serve as protective mechanisms against both overall delinquency and different types of delinquency (crimes against people, crimes against property, and minor offenses) 18 months later. It is hypothesized that perceived monitoring will serve as the most effective protective mechanisms and lead to lower engagement in all delinquency acts (both overall and specific delinquent behaviors). It is hypothesized that perceived support will reduce overall delinquency and will reduce minor self-reported delinquent acts and crimes against people, while school engagement will have the smallest effect on delinquency, reducing overall delinquency (but less so

than the other two variables of interest) and reducing minor self-reported delinquent acts and crimes against people.

Chapter 2: Literature Review

Using a resiliency framework, the goal of this study is to examine whether School Engagement, Caregiver Monitoring, and Perceived Quality of Relationship with a Caregiver serve as protective mechanisms for children and youth who come into contact with the Child Protective Services, thereby reducing future delinquency behaviors.

Resiliency Framework

Resiliency and risk are interrelated terms, as resiliency cannot manifest without exposure to risk. Risk events are threats to development that have demonstrated negative outcomes from both retrospective and prospective studies (Masten et al., 1990). Documented risk factors include poor family functioning, maternal psychiatric disorder, impoverished neighborhoods, low SES and poverty, and early onset of behavioral problems (Durlak, 1998; Flouri, Midouhas, Joshi & Tzavidis, 2014; Gramezy, 1993). Threats to development and adaptation come from two types of events, which can be categorized as independent and nonindependent (Masten & Powell, 2003). Independent events are defined as experiences that children and youth have no control over, for example the death of a parent or genetic makeup. Nonindependent events are defined as experiences that are an outcome related to children's or youths' behavior, for example, being expelled from school or involvement in the juvenile justice system (Luthar & Zigler, 1991; Masten & Powell, 2003; Rutter, 2006).

As resiliency is not a static trait, outcomes have traditionally been more challenging to define. Inferential, multidimensional, and context-dependent by nature, resiliency outcomes shift depending on the ecological factors or negative experiences

youth and children have been exposed to. Youth and children may present with resilient outcomes in one area of their life but not others (Mandleco & Peery, 2000; Masten, 2001; Masten & Coatsworth, 1998; Perkins & Jones, 2004).

Due to the inferential nature of resilience, positive adaptations are used as indicators of resilience (Werner, 2006), but only when two fundamental judgments have been defined and observed. First, a child has been exposed to a negative life event (risk), and the child subsequently demonstrates some level of *successful adaptation or appropriate developmental competence* in an *identified area* (positive adaptation) despite the risk exposure (Masten & Obradović, 2006; Masten & Powell, 2003; Masten & Tellegen, 2012).

To this end, leaders in the area of developmental psychology and resilience have identified three areas of competencies that are crucial in determining positive adaptation despite risk exposure. These developmental competencies are as follows: academic, social and conduct competence (Masten et al., 1999; Masten & Powell, 2003; Masten & Tellegen, 2012). Competencies can be promoted either through assets (individual characteristics) such as self-efficacy, intelligence, and coping skills, or through resources (ecological influences), such as community organizations and parental support (Fergus & Zimmerman, 2005; Masten et al., 1990).

Outcomes associated with academic competence include higher grades and more years of schooling; social competence is related to successful development of social relationships with peers and adults; and conduct competence may be determined by children's ability to follow socially determined rules regarding behavior (parental, teacher

or societal rules) (Masten & Coatsworth, 1998). Indicators of effective performance within each area of competence shift and change as a child moves into adolescence to reflect age-appropriate developmental tasks (Masten et al., 1999).

These competences at various stages of development can serve both as indicators of successful adaptation (from a previous stage), as well as predictors of future outcomes (Masten & Coatsworth, 1998). In addition, they remain relatively stable over time (Masten et al., 1999). For example, conduct competence (as defined by an absence of negative outcomes) remains markedly stable over a 10-year period (Masten & Tellegen, 2012). Relatedly, aggression in childhood strongly predicts violence and serious delinquency in adolescence (Herrenkohl et al., 2003). Furthermore, close to 90% of youth identified as nonresilient in adolescence continue to demonstrate nonresilience in adulthood (Afifi & MacMillan, 2011).

Applicability of the resiliency framework. By focusing on positive adaptations as opposed to deficits, the resiliency field has attempted to shift discourse from reduction of psychopathology (and negative outcomes) to the enhancement of well-being and overall health (Afifi & MacMillan, 2011; Rutter, 1987) and can help lead to the development of clinical intervention and prevention programs (Catterall, 1998).

Research has shown that, in general, as children enter adolescence, nonindependent risk experiences become more prominent (Gest, Reed, & Masten, 1999). Typically, the increase of nonindependent risk experiences is secondary to normative behaviors seen in adolescence, as youths spent approximately one third of their time with peers, with less adult guidance and control (Rubin, Bukowski, & Parker, 2006). Youth,

who have experienced high levels of adversity and have few protective resources as children report a larger increase of non-independent events (compared to peers with low levels of adversity or high resources), leading to increased risk of experiencing additional adversity (Gest et al., 1999; Masten et al., 1999; Masten & Powell, 2003).

The resiliency paradigm can be helpful in identifying what protective mechanisms support developmentally appropriate task mastery. Protective mechanisms are defined as processes associated with increasing the likelihood of successful mastery of social, academic or conduct competencies. Researchers have identified protective mechanisms that operate on the individual-, family-, and community- levels (Afifi & MacMallan, 2011; Reivich & Gillham, 2010). Individual level protective mechanisms include emotional regulation, self-efficacy, and health (Benzies & Mychasiuk, 2009). Family level protective mechanisms include close relationships with caregivers, family structure, and stable and adequate income (Benzies & Mychasiuk, 2009; Masten & Obradović, 2006). At the community level, children at-risk for future aggression who experience protective factors in adolescence (such as school bonds), as well as monitoring by and affective ties with caregivers (family level) have been shown to be less likely to engage in violent acts by age 18 (Herrenkohl, et al., 2003). For youth exposed to physical abuse (risk event), a positive school climate (community level) was found to reduce six risk behaviors (antisocial behavior, suicidality, sexual activity, and drug, tobacco, and alcohol use) as well as improve school success (Perkins and Jones, 2004).

Protective factors do not have the same effect across all youth, however. For example, affective and relational ties with caregivers function as an overall protective

factor for females, reducing delinquent acts, but not so for males (Huebner & Betts, 2002; Mandleco & Peery, 2000). When examining school misbehavior, higher levels of school involvement decreased school misbehavior in Caucasian American youth and increased school misbehavior in Latino/Latina and Asian American youth (Peguero, Popp, Latimore, Sherkarhar, & Koo, 2011). These findings highlight the context-dependent nature of the resiliency paradigm and the importance of identifying what works for which children and youth.

In the present study, the goal is to determine whether two family level resources, Perceived Support and Perceived Monitoring, and one community-level resource, School Engagement, act as protective mechanisms for youth exposed to risk by promoting conduct competence over time. Being investigated for maltreatment has been found to be a risk factor that can threaten typical development. Engagement in delinquent acts (an indication of poor conduct competence) is used as the dependent variable due to the unique negative effects it can have on a youth's life, above and beyond the presence of maltreatment.

Using the resiliency framework, this literature review presents the current state of the field across the following domains: risk factors associated with Child Protective Services investigations; the protective effects of relationships with a caregiver, monitoring, and school engagement; and the effects of both risk and protective factors on delinquency

Risk Event: Children Involved with the Child Protective Services (CPS)

Overview of child abuse and neglect. Federal legislation provides a basic definition of child abuse and neglect. Each state develops its own definition using the

federal guidelines as a foundation. Most states recognize four major types of abuse. The four categories of abuse—collectively referred to as maltreatment—are: neglect, physical abuse, sexual abuse, and psychological abuse. The federal act defining abuse and neglect is referred to as the Child Abuse Prevention and Treatment Act (CAPTA), (42 U.S.C. § 5101) [as amended by the CAPTA Reauthorization Act of 2010] (U. S. DHHS, 2012).

In a report released by the Department of Health and Human Services, Administration on Children, Youth and Families (U.S. DHHS, 2012) maltreatment (child abuse and neglect) is defined, at the very least, as:

Any recent act or failure to act on part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act, which presents an imminent risk of serious harm. (p. 15)

In 2013 an estimated 3.5 million referrals were made to the Child Protective Services (CPS) (US DHHS, 2015). Statistics on children who receive services are separated into duplicate counts (where the same child may be the subject of more than one report) and unique counts (only counting a child once regardless of the amount of referrals). Of the 3.5 million referrals, on average of around 61% met criteria for CPS involvement (U.S. DHHS, 2015). Determinations of investigations (dispositions) fell into the following categories:

- Substantiation: where maltreatment or risk of such behavior met legal criteria as outlined by State law

- Indicated: a case in which maltreatment could not be substantiated (did not reach legal criteria) but there is reason to suspect at least one child was maltreated or at risk of being maltreated
- Intentionally False: in this case, the disposition is unsubstantiated as allegations were unfounded. In addition there is evidence that the person who made allegations knew them to be untrue.
- Unsubstantiated: there was not sufficient evidence as per State law to conclude or suspect a child was being maltreated or was at risk of being maltreated
- Closed with no finding: these are cases without a specific finding, as the investigation was not completed. Reasons include: family moving out of the jurisdiction, a family could not be located; or necessary documentation was not received within the required time limit.
- Other: States use this category if a case does not fall into any of the other categories outlined above. Some States use this disposition if the results of the investigation are inconclusive, unable to be determined, or uncertain (U.S. DHHS, 2015)

In 2013, 3.9 million children (duplicate count) were the subjects of at least one report of maltreatment. Of those children, just under 20% received dispositions of substantiation or indicated, whereas the remainder were found to be non-victims (U.S. DHHS, 2015).

Investigation for maltreatment as a risk event. When households are under investigated by CPS, regardless of the outcome (substantiation or not), this is an

indication of risk (Campbell, Cook, LaFleur, & Keenan, 2010). Risk factors associated with such households often include living below the federal poverty level, lower family functioning (as defined by lower adaptability, partnership, growth, affection and resolve), history of domestic violence, caregiver history of childhood maltreatment, and higher levels of maternal depressive symptoms (Campbell et al., 2010; Hussey, Change, & Kotch, 2006; RTI, 2010).

Longitudinal data suggest children and youth under investigation for exposure to maltreatment have similar rates of externalizing and internalizing behaviors (as measured by the Child Behavior Checklist), anxiety, depression, post-traumatic stress, and dissociation regardless of case outcomes (Hussey, Marshall, English, Knight, Lau, Dubowitz, & Kotch, 2005). Compared to youth who were not maltreated, youth under CPS investigation demonstrated poorer educational and social functioning, and higher levels of delinquent acts (George, 2012). Finally, evidence suggests regardless of case determination (substantiation or not) there is a high incidence of re-referral to CPS (Connell, Bergeron, Katz, Saunders, & Tebes, 2007; Drake, Jonson-Reid, Way, & Chung, 2003; RTI, 2010).

Evidence suggests a relation between maltreatment and engagement in delinquent behaviors. Estimates indicate maltreated youth are 55% more likely to be arrested for delinquent acts compared to a control group (Wiig, Widom & Tuell, 2003). The presence of maltreatment increases the likelihood of committing a violent act by 96% (Bilchik, 2010; Chuang & Wells, 2010). The presence of physical abuse has been shown to increase the likelihood of offending in both retrospective (Teague, Mazerolle, Legosz, &

Sanderson, 2008) and prospective longitudinal studies (Grogan-Kaylor, Ruffalo, Ortega, & Clarke, 2008).

Longitudinal effects from NSCAW I. Using the data from the first National Survey of Child and Adolescent Wellbeing (NSCAW), the Research Triangle Institute (RTI, 2010) documented outcomes for children, ages 3-11 at baseline who were under CPS investigation, as they transitioned into adolescence. The sample included all children investigated for maltreatment regardless of the final determination. For this cohort of children, some of the outcomes six to seven years post-investigation associated with a CPS investigation included:

- Cognitively they were one half of a standard deviation below the normative mean on a Composite score scale representing overall intelligence.
- Academically, adolescents tended to score one half of a standard deviation below the normative mean on standardized academic achievement tests.
- More than a quarter (25.9%) of the 11- to 17-year-olds had active Individualized Education Plans (IEPs), indicating they were receiving special education services. In 2007, the U.S. Department of Education (2012) reported serving 9% of the school age children (ages 6-21) through the Individuals with Disabilities Education Act (IDEA). These findings suggest there is likely an overrepresentation of children involved in the child protective system receiving special education services.
- Regarding mental health, just over 9% of female adolescents met the criteria for clinical depression and just under 6% met clinical criteria for PTSD.

- Over a third of the sample reported the use of alcohol at some point in their lives; close to 18% reported using marijuana.
- Over 10% had a court appearance as reported by caregivers.

Within the same cohort of youth (NSCAW), RTI (2008) summarized the outcomes of youth transitioning into adulthood for all study participants (regardless of CPS investigation outcomes). For youth who were adolescents at baseline (12-15 years of age), outcomes reported six to seven years post investigation were:

- Young adults who experience maltreatment as adolescents were more likely to live in poverty (40% of the sample compared to a national rate of 30%), with over 60% of the young mothers living in poverty with their children (RTI, 2008)
- As young adults, they also scored lower on standardized measures of academic achievement when compared to national norms (RTI, 2008).
- More than 25% of female young adults reported being victims of intimate partner violence, a higher rate than the national lifetime prevalence rate among adult females of 22.1% (RTI, 2008). Research suggests domestic violence is a demonstrated risk factor for child maltreatment and maladaptive parenting (Brown, Cohen, Johnson, & Salzinger, 1998)
- Outcomes associated to mental health included: Just over 27% of the young adults met criteria for clinical depression (RTI, 2008). Regarding trauma symptoms, 10.2% reported experiencing intrusive experiences (such as nightmares and flashbacks) while 6.2% experienced dissociation (such as depersonalization and out-of-body experiences). Parental psychopathology, specifically maternal, is

identified as a risk factor for negative outcomes, and has been found to predict behavioral problems, school failure, and drug use in youth (Durlak, 1998). Thus as this cohort of youth transition into adulthood and parenthood they are at an increased risk of becoming perpetrators of child maltreatment

- Just under a quarter of these youth endorsed items consistent with attention-deficit/hyperactivity disorder (ADHD). This rate is six times the national estimate of 4.1% (RTI, 2008)
- Finally, 16.7% of youth reported being arrested within the last 12 months, with 9% being convicted of a crime. Males were more likely than females to be arrested (28.9% compared to 8.5%). When young African-American and Hispanic adults were arrested, they were more likely to be convicted, compared to White adults. (RTI, 2008)

Living in poverty has been shown to lead to a depletion of coping resources, thereby leading to a more reactive approach toward problem solving (Repetti, Taylor and Seeman, 2002). Approximately 65% of NSCAW I families lived in households where the annual earnings were less than \$25,000, compared to only 22% of families interviewed for the 2000 Census report. Therefore close to two-thirds of children involved in the NSCAW I study lived below the federal poverty line (RTI, 2005). Similarly, a baseline report from the NSCAW II dataset reveals approximately 87% of children and youth under CPS investigation were living with a parent, and about 60% of those families reported living below the federal poverty level (Dolan, Smith, Casanueva, & Ringeisen, 2011). For families with a closed CPS investigation, living below the federal poverty level increased

the likelihood of being re-referred to CPS by 325% (Connell et al., 2007). This finding further highlights the risk exposure for children and youth who come into contact with CPS.

Findings from the NSCAW I study demonstrate that children and youth who come into contact with CPS are at-risk for future negative outcomes, regardless of the case determination. Research indicates that this cohort of youth reported risk factors in their own lives that have been shown to predict child maltreatment, such as living in poverty, being the victim of domestic violence, and the presences of maternal mental health disorders. Based on these findings, the need to identify protective mechanism for children and youth who have come into contact with CPS is clear.

Protective Mechanisms

Protective mechanisms, defined by their effects on the outcome of interest, are differentiated from protective variables, which are defined by their nature (Masten & Tellegen, 2012; Rutter, 1987; Zimmerman et al., 2013). There are three basic ways in which research defines protective mechanisms: those that counteract risk exposure (a compensatory model); those that moderate negative effects of risk factors (a protective factor model); and finally those that provide inoculation to future risk (the challenge model) (Fergus & Zimmerman, 2005; Masten & Tellegen, 2012; Zimmerman et al., 2013). This current study utilizes a protective factor model definition as a way to examine the effects of Perceived Support, Perceived Monitoring, and School Engagement on subsequent delinquency.

Caregiver Support

Overview. In this study, the protective value of a perceived support by a caregiver at the point of investigation for maltreatment, is of interest. The bond between a child and a prosocial caregiver is considered to be fundamental to human adaptation (Masten & Coatsworth, 1998). An extensive literature base exists identifying family functioning as both a risk factor leading to adverse outcomes or protective factor, promoting resiliency (Durlak, 1998; Masten & Powell, 2003).

From a risk perspective, research has suggested adult caregivers under the investigation for maltreatment do not set good role models for children in their care (Zingraff, Leiter, Johnsen & Myers, 1994). For example, parents who are abusive toward their children are characterized by low parental warmth and sensitivity and high negativity (Haskett et al., 2006). Other findings indicate family conflict (a family process) increases aggression and externalizing symptoms in children (Brown & Kolko, 1999). Longitudinally, a history of family adversity in childhood has been shown to increase the likelihood that these children experience nonindependent adversity in adolescence and then continue to demonstrate poor adaptability and low competence into adulthood (Gest et al., 1999; Masten & Tellegen, 2012).

From a resiliency standpoint, the presence of a caring adult during or after times of crises or major stressors has been shown to act as a protective mechanism in general for all children, as well as for children exposed to maltreatment (Afifi & MacMillan, 2011; Masten et al., 1990). Positive parenting has been found to lead to socially appropriate conduct, school success, and self-regulation in children exposed to risk events (Masten &

Coatsworth, 1998). Family togetherness and parental expectations were found to have a positive effect on adolescent health and well-being, while parental expectations were associated with reduced misbehavior at school (Williams & Anthony, 2013). Parental efforts to guide and intervene with adolescents were moderated by the quality of the parent-child relationship, with adolescents being more receptive in relationships identified as high quality (Abar, Jackson, & Wood, 2014). An involved parental style, for example caregivers/ parents who chose to use guiding practices (i.e., they attempt to talk with an adolescent) with their adolescents, has been associated with lower levels of drugs use, while an uninvolved parental style has been associated with higher levels of drug use (Mounts, 2002). Evidence suggests authoritative parenting, defined by setting clear rules and high expectations while providing warmth and security, increases emotional and behavioral resilience in childhood and therefore reduces the effects of distal risk events such as poverty (Flouri et al., 2014; Minnard, 2002). In sum, closeness with a caring parental figure has been shown to serve as a protective mechanism for at-risk youth (Masten & Coatsworth, 1998).

At-risk youth and caregiver support. For children exposed to maltreatment, having a stable and secure caregiver can lead to more positive outcomes (Houshyar & Kaufman, 2006). These include (but are not limited to) a reduced risk of PTSD, depression, and the development of behavioral disorders (Houshyar & Kaufman, 2006). Longitudinally, the presence of a supportive caregiver can lead to more years of education, decreased risk of on-going antisocial behavior, and lower rates of problems in caring for the next generation (Houshyar & Kaufman, 2006).

There is an extensive body of literature highlighting the possible effects parental relationships on delinquency (Hoeve et al., 2012). For adolescents who have experienced physical abuse, their perception of family support mitigated engagement in risky behaviors, in some cases lowering the risk of status and violent offenses (Sousa et al., 2011). Perceived relationship with parent, particularly the same-sex parent, reduces self reported delinquency in both boys and girls (Anderson, Holmes & Ostresh, 1999). Conversely, adolescents, particularly males, whose parents are identified as having a neglectful parenting style report higher levels of delinquency (Hoeve, Dubas, Gerris, van der Laan, & Smeenk, 2011). As children enter adolescence, parental control and monitoring in conjunction with parental relationship have been shown to reduce delinquency rates (Hoeve et al., 2012).

Monitoring.

Dishion & McMahon (1998) defined parental monitoring as one piece of effective child-rearing practices. Monitoring is a flexible construct that shifts, as a child develops, to encompass the child's expanding social and developmental needs (Dishion & McMahon, 1998). Dishion & McMahon (1998) argued that monitoring subsumes supervision and structuring and tracking of behaviors within the home, school, and neighborhood. The message being communicated via effective parental monitoring is that "the parent is concerned about, and aware of, the child's activities" (Dishion & McMahon, 1998, p. 65). More recently, Stattin & Kerr (2000) refined the components subsumed by monitoring to include parental solicitation (parents asking for information), youth disclosure (voluntarily sharing with a parent), and parental control (parents setting rules

that that require youth to share information, for example calling once a youth reaches a destination).

In general, from the resiliency paradigm, lack of parental monitoring is considered a risk event and has been linked to noncompliant behavior in childhood. Lack of monitoring places children at risk by alienating them from prosocial peers or adult role models such as teachers (Masten et al., 1990).

Monitoring of adolescent behavior seems to have differential effects depending on the population being studied. With minority youth, the parent-child relationship and parental monitoring function as protective factors by increasing youths' adaptability and resiliency and mitigating the negative effects of more distal variables such as poverty (Brody & Flor, 1998; Martinez, DeGarmo, & Eddy, 2004). Other researchers have posited parental monitoring is mediated by parental support, as adolescents living in a warm and supportive home are more open to being monitored by parents and are therefore less likely to engage in risk behaviors, such as alcohol misuse and delinquency (Barnes, Reifman, Farrell, & Dintcheff, 2000; Grogan-Kaylor et al. 2008). Using Stattin and Kerr's (2000) components of monitoring, youth disclosure has, most consistently, been shown to reduce risky behaviors such as delinquency, sexual risk behaviors, and substance use (Fletcher, Steinberg, & Williams-Wheeler, 2004; Keisner, Dishion, Poulin, & Pastore, 2009; Wang, Stanton, Li, Cottrell, Deveaux, & Kaljee, 2013). Interestingly, Keisner and colleagues (2009) found that high levels of parental solicitation behavior increased self-reported antisocial behaviors one year later.

Research from Iceland suggests that parental monitoring increases school effort, which in turn increases academic achievement (Kristjánsson & Sigfúsdóttir, 2009). Within the Latino population, parental monitoring has been shown to increase academic motivation and reduce dropout rate (Henry, Plunkett & Sands, 2011; Martinez et al., 2004). Therefore, specifically with minority youth, parental monitoring appears to support academic motivation and engagement and indirectly increases academic achievement.

Lack of parental monitoring is one risk factor that increases the likelihood of substance abuse and delinquency (Dishion & McMahon, 1998; Eaton, Krueger, Johnson, McGue & Iacono, 2009; Mounts, 2002; Parker & Benson, 2004; Sampson and Laub, 2003). Parental monitoring becomes more important in adolescence, as youths' closeness to parental figures decreases with age (Hoeve et al., 2012). Finally, it has been suggested adolescents' *perception* of monitoring has more influence on the adolescents' behavior than the actual parental behavior (Parker & Benson, 2004).

School Engagement

School bonds and school connectedness are considered resiliency/ protective factors for both abused and non-abused youth (Smith, Ireland, Elwyn, & Thornberry 2013), having a positive effect on academic achievement regardless of race and gender (Catterall, 1998). School bonds, including teacher and school attachment and school commitment not only improve academic achievement and reduce drop out rates, (Bond et al., 2007; Fredricks, Blumenfeld, & Paris, 2004; Marcus & Sanders-Reio, 2001) but also affect social and behavioral development in youth (Freidenfelt Liljberg et al., 2011) reducing aggression towards peers, especially for boys (Griner Hill & Werner, 2006).

Conversely, low school connectedness, especially during secondary school, has been linked with increased substance abuse and mental health problems (Bond et al., 2007).

School engagement and at-risk youth. Exposure to maltreatment affects school performance both in primary and secondary school populations (Mallett, 2012). Children under CPS investigation have been shown to exhibit poor adaptive behaviors, low levels of social skills, increased levels of behavioral problems and internalizing behaviors such as depression, and have lower scores on reading and math achievement tests (Administration for Children and Families, n.d.; Mallett, 2012). As a result these students have more difficulties in attaching to teachers, and this in turn leads to more academic challenges (Marcus, & Sanders-Reio, 2001).

In terms of resiliency, academic engagement has been shown to mediate the relation between maltreatment and school success, with higher levels of academic engagement serving a protective role and increasing school success (Haskett et al., 2006). When adolescents who experienced physical abuse perceived their school climate as positive, there was a subsequent decrease in risk behaviors (Perkins & Jones, 2004).

The association between aspects of school experiences and delinquency is not consistent in terms of risk and resiliency. It has been suggested that an increase in school bonds can be a protective mechanism and may lead to a decrease in school-based delinquency (Hart & Mueller, 2013). Specifically, there is evidence to suggest school engagement (as well as supportive peer relations) reduced female delinquency rates (Anderson et al., 1999). Conversely, it has been found that school engagement and

commitment may not affect conduct problems and aggression (Cavendish, et al., 2012; Grogan-Kaylor et al., 2008).

Others have demonstrated a reciprocal relation between delinquency and three aspects of school bonds: school attachment, teacher attachment, and commitment (Freidenfelt Liljberg et al., 2011). Poor school bonds at baseline predicted self-reported delinquency 18 months later. Likewise, self-reported delinquency ratings at baseline predicted poor school bonding 18 months later (Freidenfelt Liljberg et al., 2011).

Engagement with school has also been conceptualized to include behavioral, emotional, and cognitive components. Behavioral engagement refers to students' academic and extracurricular involvement, as well as their willingness to follow the rules and not engage in disruptive behaviors such as truancy. Emotional engagement refers to the feelings and reactions students have vis-à-vis the school environment, teachers, and peers. Cognitive engagement refers to the investment students make in their studies, in other words the effort they are willing to put forth in their studies, perseverance, and motivation to both take on and complete challenging academic tasks (Fredricks et al., 2004). Emotional and behavioral school engagement has been linked to decreased school and general delinquency (Hirschfield & Gasper, 2011) while cognitive engagement has been linked to an increased rate of delinquency in both the general and school domains.

School performance has shown differential effects. Some studies have linked school performance to decreased delinquency rates (Hirschfield & Gasper, 2011; Zingraff et al., 1994). Other research has demonstrated differential effects between school performance and delinquency by ethnic group, again highlighting how resiliency and

protective mechanisms shift depending on context. African-American youth who performed poorly at school were more likely to engage in delinquent acts than were their Caucasian counterparts (Lynam, Moffitt, & Stouthamer-Loeber, 1993). The authors postulated that for African-American youth, school acts as a social control, providing structure to the students and supports to help regulate the youths' behavior (Lynam et al., 1993). Hence youths' failure at school and subsequent potential disaffection significantly increases the likelihood of their engagement in delinquent acts (Lynam et al., 1993). This finding, and the explanation put forth, was bolstered by research showing that especially for African-American youth, a safe and organized school environment has a positive effect on achievement (Lee, Winfield, & Wilson, 1991)

Youth Engagement in Delinquent Acts

As previously noted, for resiliency to be determined, two judgments must be made. First, participants have been exposed to a risk event, with documented negative sequelae. In this study, the literature has demonstrated that being under investigation by the CPS can be considered a risk event. Second, participants have demonstrated positive outcomes, in at least one identified area of competence, despite the risk exposure.

For this study, self-reported delinquency (SRD) was chosen as a poor evidence of conduct competence mastery. In this study, SRD is used based on literature highlighting the cascading negative process associated with conduct problems (Masten & Tellegen, 2012). For example, research has shown that poor conduct competency (i.e. involvement in rule-breaking behavior) in childhood independently predicts lower academic achievement in adolescent, which leads to an increase in internalizing problems and poor

work outcomes in young adulthood (Masten et al., 2005; Masten, DesJardins, McCormick, Kuo, & Long, 2010). Longitudinally, antisocial tendencies in childhood and adolescence have been linked to either lack of participation in the labor force or low paying jobs when entering the labor market between the ages of 18-32, and long periods on unemployment in those in their late 20s and early 30s (Healey, Knapp, & Farrington, 2004). In other words, delinquency and juvenile justice involvement can be considered risk events that increase likelihood of negative outcomes

Overview. In 2010, 1,642,600 youth were arrested (Puzzanchera & Kang, 2013). Of those arrests, juvenile justice courts processed just over 83% (1,368,200) of the cases (OJJDP, 2013). Sixty-four percent of offenders were of Caucasian origin, 33% were of African American descent, 2% were of American Indian descent, and just under 1% identified as Asian/ Native Hawaiian and Pacific Islander (NHPI) (note: all Hispanic youth were considered in the Caucasian category). Females accounted for 28% of all cases seen (OJJDP, 2013).

Just over five percent (5.12%) of these youth arrests were for violent offenses such as criminal homicide, forcible rape, robbery, and aggravated assault. Property-related offenses, such as burglary, larceny, arson, and motor vehicle theft, accounted for 25.98%. Drug law violations accounted for 11.99%, while 25.93% of cases were for public-order offenses such as disorderly conduct, obstruction of justice, nonviolent sex offenses, weapons offenses, and liquor law violations (OJJDP, 2013). Just over half of the 1,368,200 cases (52%) involved youth under age 16. In 2010, youth under the age of 16 accounted for 76% of all arson cases, and over 60% of all vandalism, disorderly conduct,

and simple assault offenses. Although minority youth made up about 36% of cases seen, they accounted for more than half (55%) of all Violent Crime Index offenses and just under 25% of all drug law violation cases (OJJDP, 2013).

Of relevance, there is a natural “aging out” process, whereby a spike in delinquent behaviors is seen in adolescence and by mid- to late-twenties these same youth naturally transition out of (reduce) these behaviors (Moffitt, 1993; Sampson & Laub, 2003).

Holman and Ziedenberg (2006) postulated that detention interrupts the natural aging out process by removing youth from traditional social systems such as educational, familial, and occupational supports. Thus these youth are removed from systems that can act as protective processes, and which typically support individuals as they transition from adolescents into adulthood.

Longitudinal effects. Involvement in the Juvenile Justice system has significant long-term reverberations. When children from the CPS become involved in the juvenile justice system they remain longer in that system (Holman & Ziedenberg, 2006). Detained youth also receive more serious sentences and so become more entrenched within the juvenile justice system (Holman & Ziedenberg, 2006). They are also more likely to recidivate when compared to youth not in the CPS, even if their offense history and crime severity are similar (Bilchik, 2010; Chuang & Wells, 2010).

Rates of migration into the adult criminal justice system vary, depending on the length of follow-up. Estimates range from 25 to 90% of juvenile justice involved youth later being on adult probation or in the prison system (Colman et al., 2009). Adolescents

involved in the juvenile justice system were at an increased risk of becoming perpetrators of child maltreatment (Colman et al., 2009).

Overall summary: What is known and what needs to be known.

Research has shown the experience of being investigated for maltreatment can have a negative cascading effect on child and adolescent development. Risk factors associated with maltreatment include maternal mental health, poverty, and early onset of behavioral problems (Durlak, 1998). Long-term outcomes associated with youth who were investigated as potential victims of maltreatment include early parenthood, high school dropout, delinquency, substance abuse, and mental health issues.

Perceived support by a caregiver, monitoring, and school engagement are considered protective factors that can mitigate these negative circumstances. The literature has demonstrated that a positive caregiver relationship, and parental/caregiver monitoring may reduce a youth's engagement in at-risk behavior and decrease risk for involvement in delinquent acts. School engagement has shown inconsistent results, serving as a protective mechanism for some youth, but not so for others. Therefore, further examination of the potential protective role that school engagement can play in the lives of at-risk youth can be an important contribution to the field of resilience.

Proposed Research Study

Statement of problem. Evidence suggests that youth who come into contact with CPS are at a higher risk for experiencing negative outcomes as they transition into young adulthood. One such negative outcome includes an increased risk of engagement in delinquent behavior and subsequent involvement in the juvenile justice system. Once

youth enter the juvenile justice system, it can be hard to exit. Most studies have shown that anywhere between 25-90% of youth will recidivate by the time they enter early adulthood (in their twenties). While other young adults are beginning their careers, this cohort of older adolescents and young adults transition into adulthood with legal involvement.

Statement of purpose. This study will extend previous research to determine the effects, if any, the three protective mechanisms, identified above (relationships with caregivers, monitoring and school engagement) have on reducing delinquent behavior 18 months later. In addition, the study seeks to determine whether these protective mechanisms have differential effects on subtypes of delinquency: offenses against people, offenses against property, and minor offenses.

Fitting with a resiliency paradigm, by examining the effects 18 months later, this study seeks to understand whether these three protective mechanisms can change youths' life trajectory from a more negative pathway to a more positive one. Furthermore, the study seeks to determine whether these protective mechanisms have the same effect on subtypes of delinquency. The results of this study can potential inform clinical and CPS practices, as it can highlight the importance of service delivery to youth regardless of case determination.

Chapter 3: Method

Unless otherwise noted, information concerning the National Survey for Child and Adolescent Well-being (NSCAW) data was taken from the following NSCAW II documents distributed by National Data Archive on Child Abuse and Neglect (NDACAN) and Cornell University: Appendix II (NSCAW II constructs and measures); Appendix III (NSCAW III Sampling Frame Data Request Specifications); Appendix IV (NSCAW variables from NCANDS); and the Data File User's Manual 1-2 (DFUM).

The NSCAW study is sponsored by the Administration for Children and Families (ACF), U.S. Department of Health and Human Services (DHHS). Funding support for preparing the data for public distribution was provided by a contract (90-CA-1370) between the National Center on Child Abuse and Neglect and Cornell University. The collectors of the original data, funding agency, and the National Data Archive on Child Abuse and Neglect do not bear any responsibility for the analyses or interpretations presented in this research.

Overview

The National Survey for Child and Adolescent Well-Being II (NSCAW-II) is the second longitudinal study focused on describing and investigating the long-term outcomes of children and adolescents reported to, and involved with, Child Protective Services (CPS). Funded by the U.S. Department of Health and Human Services (DHHS), the goals of NSCAW I and II were to examine the antecedents and consequences of child maltreatment, as well as the impact of involvement with the CPS, using an ecological-developmental theory of risk and resiliency.

Data were collected from a wide range of sources including children, caregivers, caseworkers, and teachers. These multi-source data allow researchers to look at how individual, familial, community, educational, and service factors affect children and youths' well being. The NSCAW-II design replicated the NSCAW I study design except the Longer Term Foster Care sample was excluded; the age range was extended from 14 to 17.5 years; and several standardized child assessment measures were revised based on user feedback.

Contracts for the NSCAW-II data collection are administered by the Administration for Children and Families (ACF), U.S. DHHS. Collaborating agencies included the Research Triangle Institute International (RTI), the Tufts-New England Medical Center, and the Children and Family Research Center at the University of Illinois at Urbana-Champaign. The data (and tabulations) were made available for this research by the National Data Archive on Child Abuse and Neglect, Cornell University, Ithaca New York.

Sampling Design and Subject Eligibility

The target population for the NSCAW-II sample was children who came into contact with CPS. In eight states, the law states that the first contact with a caregiver (whose child was selected for the study) must be made by CPS, not the NSCAW Field Representatives. As a result, these eight states were not included in the final sample.

The NSCAW-II sample was finalized using a two-stage stratified sample design. In stage 1, the United States was separated into nine sampling strata. The first eight strata represented the eight states with the largest child welfare caseloads. The final stratum

comprised of the District of Columbia and the remaining states. Primary Sampling Units (PSUs) were formed and selected at random within each stratum. In general, PSUs are defined as geographical regions in which the population was served by only one CPS agency. In some cases agencies serving a small number of children were combined to form one PSU. Overall, 100 PSUs were randomly selected as part of NSCAW II.

At the second stage of the sampling design, five age-based sampling domains were created (see Table 1 for description and sample sizes). In addition, children involved with CPS were stratified by other domains of interest such as type of abuse, whether the child was receiving CPS services, and whether the child was in out-of-home care. Certain types of children were disproportionally sampled to provide adequate sample size for separate analysis. As a result, weights are available for use with the NSCAW data, as not all children were sampled with equal probabilities. The sampling procedure was conducted over a 15-month period between February 2008 and April 2009. The following criteria were used to create a sample from eligible study participants:

- All children from 0 to 17.5 years of age investigated and assessed for abuse or neglect were eligible for inclusion
- Only children who were the focus of the investigation were included
- Children previously referred to CPS (within the 15 month baseline period) were not included
- Children who were part of the same family or household of a previously selected child were not included

- Only victims of abuse or neglect were included. In other words, children investigated as perpetrators were excluded.

Table 1.

Description, and Sample Sizes, of the Five Sampling Domains Within Each PSU for the NSCAW II Sample.

Domain	Description	Sample Size
1	All children age 0-17.5 who were not receiving CPS agency funded services	1,421
2	Infants (age < 1 year old) who were receiving CPS agency funded services and were in out of home care	1,158
3	Infants (age < 1 year old) who were receiving CPS agency funded services and were not in out of home care	1,105
4	Children age 1 to 17.5 years old who were receiving CPS agency funded services and were in out of home care	1,144
5	Children age 1 to 17.5 years old who were receiving CPS agency funded services and were not in out of home care	949
Total:		5, 872

Data Collection: NSCAW II

An introductory letter discussing the importance of the NSCAW-II study and confirming the confidentiality of the data was mailed to a child’s caregivers forty-five days *after* the close of a CPS investigation. A designated field representative then followed up with a call or house visit to conduct in-person child and caregiver interviews. As noted above, to be included in the study the child was the identified likely victim of the alleged abuse or neglect. Caregivers included in the study were identified as the adult who knew the child best and who could most accurately answer questions about the child’s wellbeing.

Currently only two of the five planned NSCAW II data collection waves have been conducted. Baseline data collection began in April 2008 and was completed in December 2009. The second wave, the 18-month follow-up, began in October 2009 and was completed in January 2011.

Participants

For the purposes of this study, only a subsample of children from the NSCAW-II data was selected. The criterion for selection were all children ages 11 to 17.5 at Wave 1. By selecting children who were 11 years old at wave 1, it was possible to include the “Perceived Support” construct, a key variable in this research. This criterion yielded a sample of 1,054 participants. Table 2 provides an overview of the variables used in the study; for a more comprehensive look at the variables, including individual items, please refer to Appendix A, Tables A1 and A2.

Measurement of Variables

The primary variables in this research were latent variables in order to capitalize on the power of latent variable structural equation modeling. Each latent variable was indexed by multiple measures, which were composites of items that were designed to measure the constructs of interest. Preliminary analyses included exploratory and confirmatory factor analyses designed to determine which items to group into subscales, and whether the resulting subscales measured the underlying constructs of interest. Because latent variables remove unreliability and invalidity from the estimates of the effects on one variable on another, the use of latent, as opposed to measured, variables

should provide more accurate estimates of the effects of the protective variables on delinquency.

Independent (intervening) variables: Perceived Support, Perceived Monitoring, and School Engagement.

Perceived Support. Initially, Perceived Support was a latent variable expected to be indexed by two composite measures: the youth's perceived relationship with the caregiver and the youth's perceived closeness to the caregiver. However, this structure was revised based on the initial data preparation and analysis. During the initial data analysis it was determined the variable Closeness With Caregiver did not form a valid latent variable, and therefore a composite reflecting this construct would not be valid. The final analyses retained only Relationship with Caregiver as the construct of interest, referred to as Perceived Support in this study.

The variable Perceived Support was assessed with a 12-item questionnaire. The questionnaire was a modified version of the Relatedness Scale from the Rochester Assessment Package for Schools (RAPS). Questions included: how the youth felt when with the caregiver (mad, unhappy, and good), if the youth thought the caregiver enjoyed spending time together, and if the youth thought the caregiver trusted him or her. A higher score on this measure means a more positive caregiver-youth relationship. Based on the NSCAW I study, a reliability coefficient was reported as .82 for a composite variable reflecting support (Grogan-Kaylor et al., 2008). For the final model, the latent construct of Perceived Support (by caregiver) was indexed by four composite variables derived from this questionnaire. The four composite variables were Emotional Security, Involvement,

Structure, and Autonomy Support (see Appendix A, Table A1 for specific items and composite variables).

Perceived Monitoring. This variable assessed youths' perception of the primary caregiver's monitoring. Monitoring is defined as the caregiver's knowledge of the youth's whereabouts, activities, and of his or her companions. The Supervision-Child Scale was the source for these items and was based on the Supervision/Involvement Scale of the Pittsburgh Youth Study (Conduct Problems Prevention Research Group (CPPRG), 1995). Research has shown the Supervision/Involvement scale to be related to family factors associated with delinquency (CCPRG, 1995). For this Likert-type scale, youth answered questions such as how many friends does a caregiver know, curfew times, and communication regarding whereabouts. For the NSCAW I study, the reported reliability for the composite coefficient was .65. (Grogan-Kaylor et al., 2008). During the preliminary data analysis phase it was determined the composite variable "supervision" had very low factor loadings onto overall Perceived Monitoring factor and also had very low correlation with the other two composite variables (communication and caregivers' interest in youth). Therefore for the final model only 10 of the items were retained. A final latent construct of Perceived Monitoring was derived based on two composites: Communication and Interest (see Appendix A, Table A1 for specific items)

School Engagement. School Engagement was measured by an 11-item questionnaire. Raw scores were computed for four the subscales in this research, with high scores indicating a more positive attitude toward schools.

Table 2.

Measures of Delinquency, Intervening and Control Variables, NSCAW-II.

Construct	Child Age	Waves Used in Analysis	Time Period Covered	Information
Control variables:				
Age	n/a	1	n/a	Child's age at time of report of abuse or neglect
Sex	n/a	1	n/a	Child's sex at time of report of abuse or neglect
Delinquency ^a	≥ 11	1	Last 6 months	Self report of participation in delinquent or criminal activities.
Cognitive Abilities ^b	≥ 4	1	n/a	Standardized assessment tool.
Intervening Variables:				
Perceived Support ^c	≥ 11	1, 2	No specified time period	Child's perception of the degree of a supportive relationship between the child and a primary adult caregiver
Monitoring ^d	≥ 10	1, 2	Last 6 months	Child's perception of extent to which caregiver monitors the child's activities
School Engagement ^e	≥ 6	1, 2	No specified time period	High score indicates more positive responses
Dependent Variable:				
Delinquency ⁴	≥ 11	2	Last 6 months	Self report of participation in delinquent or criminal activities.

Latent variables are bolded; measured variables are non-bolded

Information below identifies measure and author/ publisher: ^a Modified Self-Report of Delinquency & Denver Youth Survey; Elliott and Ageton (1980); Elliot and Ageton (1995). ^b Kaufman Brief Intelligence Test (K-BIT); Kaufman & Kaufman, American Guidance, Inc (1990). ^c Rochester Assessment Package for Schools (RPAS); James P. Connell (1990), Lynch, M. & Cicchetti, D. (1991). ^d Supervision-Child Scale from Fast Track Project; Conduct Problems Prevention Group (1994). ^e Drug Free Schools (DFSCA) Outcome Study; U.S. Department of Education: Office of the Under Secretary

Questions focused on participants' enjoyment of school, effort made, and connection to teachers and peers. The reliability coefficient (alpha) for the composite (total score) measure in the NSCAW I study was reported as .82 (Grogan-Kaylor et al., 2008). The final latent variable used in this research was based on four composite variables: emotional engagement, cognitive engagement, school relationships and academic behaviors (see Appendix A, Table A1 for specific items)

Dependent (endogenous) variables.

ACASI Self Report Delinquency (SRD). Originally designed and used in the National Longitudinal Survey of Youth (NLSY), the SRD version used in wave 7 of the NLSY was used for NSCAW. There were 72 questions overall which were paired into odd and even items. Odd questions asked whether participants engaged in specific delinquency acts over the last six months. Even items asked about frequency of such acts; the options ranged from "I haven't done this in the last 6 months" to "5 or more times". The internal consistency of the SRD composite based on the NSCAW I data was .98

For the present study, the overall delinquency variable was a latent variable, indexed by three subcategories of delinquency: minor offenses, crimes against property and crimes against people (Appendix A, Table A2 for more detailed information on individual items). These separate composites were used to determine the effect of the protective variables on specific types of delinquency.

Control variables: Age, gender, cognitive abilities, and previous delinquency

These control variables were included for two purposes. First these are variables that research has shown to affect conduct competence therefore the goal was to remove the

effects they may have on SRD at Wave 2. Second, it can also allow for exploratory research to determine whether Perceived Support, Perceived Monitoring and School Engagement mediate the effects of the control variables onto SRD at wave 2.

Age. The age of the child at the time the report of abuse or neglect was made.

Gender. Gender of child, male or female. It is entered during the initial report of abuse or neglect.

Cognitive abilities. Overall cognitive abilities of each youth as measured by the Kaufman Brief Intelligence Test (K-BIT). It was included as a control variable as previous research has found that higher intelligence serves as a protective mechanism improving conduct competence (Masten, et al., 1990; Masten & Powell, 2003; Masten & Tellegen, 2012)

Self reported delinquency (SRD). Self reported delinquency (SRD) at wave one was used as a control variable, and thus the research examined change in delinquency over the 18-month period. SRD at wave 1 was the same as the SRD variable used as a dependent variable.

Data Analysis

Overview. Latent variable structural equation modeling (SEM) was used to assess the magnitude of the influence of Perceived Support, Perceived Monitoring, and School Engagement (at baseline, Wave 1) on SRD at Wave 2 for children and youth who came into contact with CPS. Age when participants came into contact with the CPS, gender, cognitive ability, and SRD at Wave 1 (baseline) were used as control variables. A

longitudinal model was analyzed. The control and intervening variables were measured at wave 1; delinquency was assessed during wave 2, approximately 18 months later.

SEM can be considered as a combination of confirmatory factor analysis and the multivariate regression analysis of those factors (Ullman, 2007) and allows for an examination of the presumed effects of one or more independent variables (IVs) (discrete or continuous, latent or measured) on one or more dependent variables (DVs) (usually continuous). Both the IVs and DVs can be latent or measured variables. Path diagrams are an integral component of SEM as they allow for a visual representation of the nature of the presumed relations among variables (Ullman, 2007). In other words, SEM allows for the representation of complex theories as complex models (McArdle & Kadlec, 2013).

Using theory (and paradigms), previous research, time precedence, and a combination of logic and observation, the SEM researcher creates a model of the likely pattern of influence of the variables on one another, with the results showing the magnitude of those effects, given the validity of the model (Keith, 2006). The conceptual model guiding this research is shown in Figure 1.

For models that are overidentified (not all possible effects estimated), SEM programs provide “fit indices”. Fit indices provide some indication about how well the model explains the data. For the purpose of this research, a combination of one test statistic and several approximate fit statistics will be used. A model test statistic examines whether the covariance matrix, implied by the research model, is close enough to the sample matrix. Approximate fit indexes are continuous measures of model-data fit (Kline, 2011). Table 3 lists the fit indexes used in this research. Two statistical programs were

used: SPSS (for preliminary analysis, demographic information and descriptive statistics), and Amos (development of structural models and identification of model fit).

Table 3.

Model Fit Indices

	Good	Adequate	Poor
Chi-square	Non significant	Non-significant	Significant
RMSEA ¹	≤ .05	>.05 <.08	≥ .10
SRMR ²	≤ .06	≤ .08	> .08
CFI ²	≥ .95	≥ .90	< .90
TLI ²	≥ .95	≥ .90	< .90
AIC ²	Smaller is better; Only useful for comparing models.		

¹ Test Statistic

² Approximate Fit Indexes.

Power analysis. Sample size required for adequate power (.80) was calculated utilizing the model's degrees of freedom as well as the desired power and RMSEA (Preacher & Coffman, 2006). The calculation determined that with 85 degrees of freedom, a desired power of .8, and a null RMSEA of .05 and an alternative of .10, approximately 69 participants were needed. Given that the current study had 1,054 participants, sample size is considered adequate.

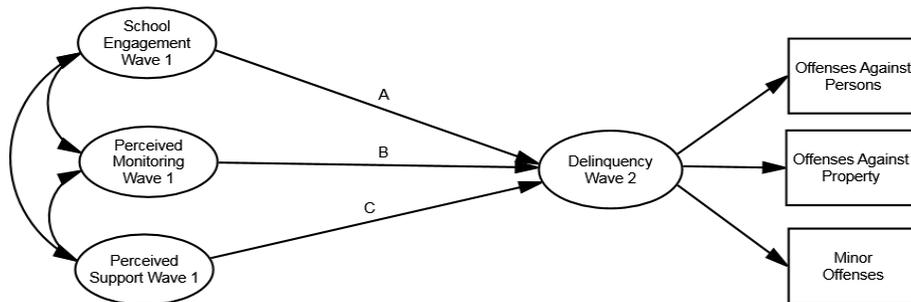
Missing data analysis. Methodologists generally recommend that researchers use likelihood-based procedures such as maximum-likelihood (ML) to deal with missing data (Enders, 2010; Schafer & Graham, 2002). Many SEM programs, including that to be used in this research, use full-information maximum-likelihood (FIML) as the primary estimation method when data are missing. Provided the model of the data is realistic, ML tends to be approximately unbiased with large enough samples (Schafer & Graham, 2002).

Purpose and research questions.

The overall purpose of this research was to examine risk and resiliency factors and their effect on delinquency. This purpose, illustrated graphically in the conceptual model (Figure 2), clearly includes multiple specific questions of interest. The research questions of primary interest are listed below along with the proposed analysis and the hypothesized outcomes.

Figure 1.

Model Guiding Research: Overall Delinquency



It is worthwhile to note two inherent limitations within this research. First, the data used in this research were nonexperimental in nature; there was no (nor could there have been ethically) experimental manipulation of perceived support, perceived monitoring, or

school engagement to determine their effect on subsequent delinquency. As a result, it should be understood that all statements that discuss the “effect” of one variable on another, or that focus on variables that “explain” an outcome were dependent on the validity of the model.

In other words, if the model is a reasonable representation of reality, the estimates resulting from the model indeed show the extent of the influence of one variable on another. If the model is not a reasonable representation of reality, the estimates are not accurate estimates of those effects. Second, all statistical models are wrong to a certain degree, as they are mere approximations of complex realities. Therefore in the case of SEM, a good fit does not show that a model is true, just plausible (Kline, 2011).

A purpose of this research was tested in two ways. The first way was to determine the effects of these protective factors on overall delinquency; the second was to determine the effects of these protective factors on specific types of delinquency. In both cases, previous delinquency and plausible background variables were controlled.

Research Question 1.1. The effects on overall delinquency was tested via paths A, B, and C in model shown in Figure 1.

It was expected that all three intervening variables would reduce SRD at Wave 2. It was expected Perceived Monitoring would have the strongest effects on SRD. Perceived Support would have the second largest effects on delinquency. Finally, it was expected that School Engagement would serve as a protective mechanism for youth, thereby reducing overall delinquency involvement at wave 2, but less so than the other variables.

Research Question 1.2. To test the effects of these protective mechanisms on specific types of delinquency, a second model, shown in figure 3 was analyzed.

It was expected that: a) Monitoring (at wave 1) would have the strongest effect on all delinquency measures (wave 2), reducing all three categories of delinquent acts (paths D, E and F); b) Perceived Support (at wave 1) would reduce minor offenses and offenses against persons (at wave 2) (paths G and I); and, c) School Engagement (at wave 1) would also reduce minor offenses and crimes against persons (at wave 2) (paths A and C).

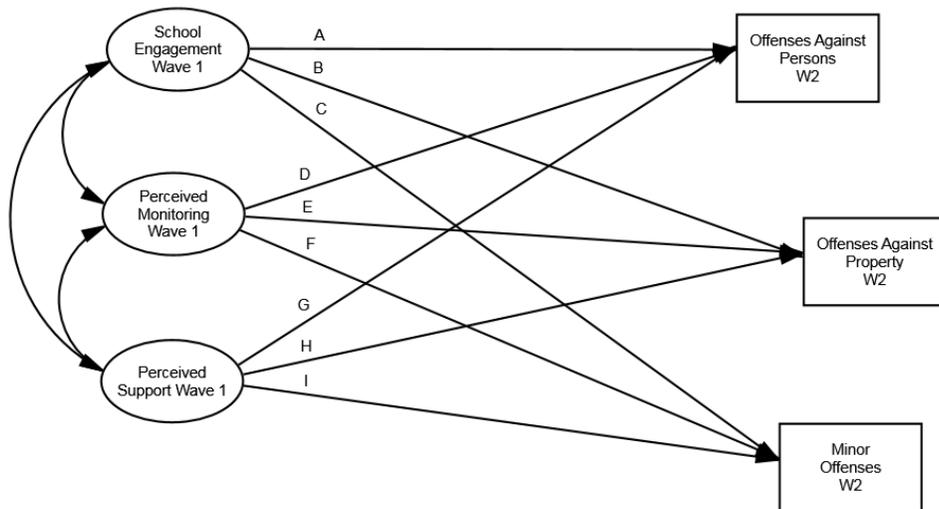
The second purpose of this research was to examine the levels of the protective variables for youth who report delinquent acts (at wave 2) and compare them to youth who did not engage in delinquent acts by wave 2.

Research Question 2.1. To what extent were the levels of Perceived Support, Perceived Monitoring and School Engagement at Wave 1 of youth who reported delinquent acts similar to youth who did not report committing delinquent acts?

It was expected that youth who report engaging in delinquent acts (at Wave 2) would initially report, at Wave 1, lower levels of Perceived Support, Perceived Monitoring, and School Engagement when compared to youth who did not engage in delinquent acts at Wave 2.

Figure 2.

Model Guiding Research: Subtypes of Delinquency



Chapter 4: Results

Preliminary Analyses

Data preparation. Preparation of the data, calculation of preliminary statistics, and reliability analyses were conducted using SPSS 22. All data were checked via inspection of histograms and by skewness and kurtosis values. Skew values less than 2 and kurtosis values less than 7 are recommended for measured variables in SEM (Curran, West, and Finch, 1996), while kurtosis values above 10 indicate a problem (Kline, 2011). The majority of variables in this model had skew values below 2 and kurtosis values below 7. Exceptions to this were the self-reported delinquency variables (see Table 4). To address the issues of skewness and kurtosis, two supplemental analyses were conducted: first, the delinquency variables were transformed via log transformations at wave 2, and second, a random subsample of youth was selected to make the overall delinquency variable at Wave 2 more normally distributed. The results of these supplemental analyses are discussed in more detail at the end of the chapter.

Table 4.

Skewness and kurtosis values for delinquency measures at Wave 1 and Wave 2

Variable	Skewness	Kurtosis
Delinquency as Control variable:		
CompPropW1	6.028	50.351
CompMinorW1	2.81	6.82
CompPerW1	6.193	46.057
Delinquency as Dependent variable:		
CompPropW2	6.595	65.703
CompMinorW2	3.204	13.548
CompPerW2	5.637	37.2

Table 5.

Minimums, maximums, means, and standard deviations for items used in measurement and structural models

Latent Variable	Measured variable	Min	Max	Mean	SD	N
Control variables:						
	Age	11	17	13.72	1.863	1054
	Cognitive Ability	40	142	87.87	16.722	1009
Wave 1 Delinquent Acts ^a	Against Persons	0	20	.44	1.868	1009
	Against Property	0	39	.95	3.175	1005
	Minor Offenses	0	25	1.64	3.253	1011
Intervening Variables:						
Perceived Support	Emotional security	1	4	3.402	.714	1030
	Involvement	1	4	3.289	.663	1029
	Structure	1	4	3.287	.740	1027
	Autonomy support	1	4	3.167	.773	1027
Perceived Monitoring:	Interest	3	19	12.99	3.797	1031
	Communication	13	35	29.43	4.605	784
School engagement	School relationships	3	12	7.92	1.333	999
	Cognitive engagement	3	12	9.63	1.96	995
	Emotional engagement	3	12	7.57	1.353	1001
	Academic behavior	2	8	4.35	1.219	1000
Dependent Variable:						
Wave 2 Delinquent acts ^a	Against Persons	0	16	.35	1.483	833
	Against Property	0	43	.85	2.911	835
	Minor Offenses	0	25	1.47	3.11	750

^a Frequency tables identifying number of delinquent act endorsed by youth, see Appendix C

Correlations between all the variables in the model were calculated in Amos Graphics 21 using full information maximum likelihood estimation for missing data. (See Appendix D for a full correlation matrix). In inspection of the correlation matrix, no unexpected relations were found between variables. Descriptive statistics (means, ranges, and standard deviations) were computed (see Table 5). Further information on descriptive statistics is provided in the next section.

Descriptive statistics. Youth in this study were 44.7% male and 55.3% female, while 27.1% were African American, 38% were Caucasian and 24.1% were Hispanic. An additional 10.4% of youth identified as Other ethnic origin. Descriptive statistics were calculated for all variables in the model and are summarized in Table 5 above. Table 6 compares the demographics from this study's sample to the NSCAW II overall demographic information (Casaneuva, Smith, Dolan & Ringeisen, 2011). The sample used in this study was restricted to youth aged 11 and up at the time of initial contact with CPS. When compared to the NSCAW II overall sample demographics (Casaneuva et al, 2011), the study sample had more females than males. In regards to race, the study sample had more youth who identified as Black/ non-Hispanic and Other when compared to the overall NSCAW II demographics. A disproportionate number of youth in the current study were under investigation for sexual abuse.

Examination of the control variables revealed participants' cognitive abilities (using standard scores, with a mean of 100 and a standard deviation of 15) in general were in the lower end of the average range. As previously discussed there was a significant

skew and kurtosis in the reported delinquency variables. When examining delinquency at Wave 1, over 85% of the sample did not report any delinquent acts against

Table. 6

NSCAW II Demographic Information for Overall Sample and Study Sample

NSCAW II Demographic Information (overall sample)	Percent	Number	NSCAW Demographic Information (current subsample)	Percent	Number
Age					
≤ 2	20.6	2,937	≤ 2	n/a	
3-5	22.6	825	3-5	n/a	
6-10	27.4	1,053	6-10	n/a	
11-17	29.5	1,054	11-17	100	1,054
Gender:					
Male	50.8	3,017	Male	44.7	471
Female	49.2	2,856	Female	55.3	583
Race:					
White/ Non-Hispanic	41.5	2,004	White/ Non-Hispanic	38	400
Black/ Non-Hispanic	22.4	1,827	Black/ Non-Hispanic	27.1	286
Hispanic	28.3	1,614	Hispanic	24.1	254
Other	7.7	407	Other	10.4	110
Maltreatment Types ^a:					
Physical	27.3	1,195	Physical	24.5	221
Sexual	8.5	354	Sexual	13	117
Emotional	8.3	333	Emotional	5.9	53
Failure to Provide	15	817	Failure to Provide	7.5	68
Nelgect	36.8	1,748	Nelgect	15.9	143
Abandonment	1.5	143	Abandonment	3	27
Moral/Legal	0.0	6	Moral/Legal	.1	1
Educational	1.1	73	Educational	2.4	22
Exploitation	.4	13	Exploitation	.2	2
Other ^b	45.9	3,531	Other ^b	26.8	242

^a Maltreatment Types percentages are greater than 100% as victims may have suffered more than one type of maltreatment.

^b Other category includes: prematurity, substance exposure, domestic violence, substance-abusing parent, voluntary relinquishment, Children in Need of Services (CHINS) and Investigation only way to get services

persons; just over 7% reported between 1-5 acts; and over 2% reporting 6 acts or more.

Over 77% denied engaging in delinquent acts against property; just over 10% committed anywhere between 1-5 acts; and over 4% reported 6 acts or more. Regarding engagement in minor delinquent acts, approximately 10% reported at least 6 acts or more; over 25% reported between 1-5 minor acts; and the remaining 61% denied committing any minor offenses (see Tables 7 for summary of the number of acts endorsed by participants, and Appendix B, Tables B1-B3 for specific number of acts endorsed).

Table 7.

Number of Delinquent Acts Endorsed by Youth

Number of Youth Endorsing Delinquent Acts (Percentages)	No Offenses	Between 1-5 Offenses	6 or more	Missing
Delinquent Acts Wave 1:				
Offenses Against Persons	907 (86.1)	78 (7.5)	34 (2.1)	45 (4.3)
Offenses Against Property	819 (77.7)	137 (12.9)	49 (4.8)	49 (4.6)
Minor Offenses	646 (61.3)	265 (25.2)	100 (9.4)	43 (4.1)
Delinquent Acts Wave 2:				
Offenses Against Persons	763 (72.4)	54 (5.1)	16 (1.5)	221 (21)
Offenses Against Property	688 (65.3)	109 (10.3)	38 (3.6)	219 (20.8)
Minor Offenses	508 (48.2)	173 (16.4)	69 (6.6)	304 (28.8)

With regard to the other variables of primary interest, data were recoded so that higher numbers always indicate a more favorable outcome (this is not the case with delinquency, of course). With School Engagement, youth tended to report school as sometimes engaging. For Perceived Support, youth tended to report more positive relationships, engaging in joint activities, discussing school and social issues, feeling

emotional security, and experiencing a structured environment and supportive caregivers. Youth also reported that caregivers showed interest with whom youth spent time, and expected communication regarding youth's movements.

Examination of delinquent acts in Wave 2 showed that most youth did not report engagement in any delinquent behavior. For example with delinquent acts against persons, approximately 72% did not report any act, while just over 1% reported 6 acts of more. As with delinquency at wave 1, there was a wider range of delinquent offenses against property reported, with youth reporting anywhere between 1- 43 acts; yet 65% of the youth did not commit any offenses against property. Also consistent with wave 1, when youth did engage in delinquent acts, they most commonly reported minor offenses (approximately 23% of the population committed at least 1 act) (see Tables 7 for summary of the number of acts endorsed by participants, and Appendix B, Tables B4-B6 for specific number of acts endorsed).

Sampling weights were provided for this data set but were not used for this study. The purpose of the sampling weights was to account for differential selection probabilities. The sample in this study is not considered representative as it 1) was a subpopulation of adolescents; and 2) was composed of youth age 11 and older at the first wave of data collection. It is assumed that there is a portion of the adolescent population who does not come into contact with the Child Protective Services and therefore is not represented, and a portion of the NSCAW II sample that were younger than 11 at Wave 1 who are not represented in this model.

Table 8.

Reliability Statistics, Cronbach's Alpha, for Scales Used in Study

Scale	Number of items	Full Sample	Study Sample
Perceived Support	12	.830	.926
Emotional security	3	--	.732
Involvement	4	--	.808
Structure	3	--	.703
Autonomy support	2	--	.544
Perceived Monitoring	10	.991	.758
Interest	3	--	.751
Communication	7	--	.664
School Engagement	11	.998	.985
School relationships	3	--	.941
Cognitive engagement	3	--	.971
Emotional engagement	3	--	.929
Academic behavior	2	--	.944

Table 9.

Correlations Among Composite Variables for Latent Variable Perceived Support

	Emotional security	Involvement	Structure	Autonomy support
Emotional security	1			
Involvement	.625**	1		
Structure	.571**	.615**	1	
Autonomy support	.492**	.507**	.514**	1

** Correlations significant at the 0.01 level

Table 10.

Correlations Among Composite Variables for Latent Variable Perceived Monitoring

	Communication	Interest
Communication	1	
Interest	.460**	1

** Correlations significant at the 0.01 level

Table 11.

Correlations Among Composite Variables for Latent Variable School Engagement

	Emotional engagement	Cognitive engagement	School relationships	Academic behavior
Emotional engagement	1			
Cognitive engagement	.420**	1		
School relationships	.382**	.442**	1	
Academic behavior	.225**	.310**	.228**	1

** Correlations significant at the 0.01 level

Reliability statistics. When available, Cronbach's alpha was reported both for the overall NSCAW II sample, as well as for this study's subsample for composites used as indicators of latent variables. The reliability statistics for the School Engagement variable (both overall and subscales) were excellent. The Perceived Support scale overall showed excellent reliability for this sample, despite the good to poor subscale reliability. The decision to use the 4 subscales was based on the finding that these four subscales showed high correlations among one another and thus should form a good latent variable (see Table 8 above). Appendix A, Tables A1 and A2 include all latent variables and their corresponding items. Appendix C, Table C1 includes all the correlation between the measured variables included in the study.

Table 12.

Correlations Among the Delinquency Sub factors at Wave 1 and Wave 2

Wave 1	Minor Offenses	Crimes Against Property	Crimes Against People
Minor Offenses	1		
Against Property	.529	1	
Against People	.516	.606	1
Wave 2	Minor Offenses	Crimes Against Property	Crimes Against People
Minor Offenses	1		
Against Property	.666	1	
Against People	.710	.743	1

Table 13.

Fit Statistics of Scales Used in Study (Using Composites For the Measured Items)

	Perceived Support ^a	Perceived Monitoring ^b	School Engagement ^a
Chi-square (df)	4.374 (2)	44.963 (25)	2.919 (2)
RMSEA	.034	.028	.021
CFI	.998	.989	.998
TLI	.992	.980	.992

^a CFA fit statistics using composites ^b CFA fit statistics using individual items

Preliminary Confirmatory Factor Analyses

Intervening variables: Preliminary Confirmatory Factor Analyses (CFAs) were used to evaluate the adequacy of the factor structure of the Perceived Support, Perceived Monitoring and School Engagement latent variables, as indexed by composites of items. Final factor structures were based on two considerations: Adequate fit of the construct, when analyzed in isolation, and moderate to large factor loadings of each composite on the latent variable. Items were chosen for inclusion in each composite based on their wording (whether they appeared to measure a cohesive construct), with exploratory factor analysis used to delete items. Fit statistics of the intervening variables, derived from Amos, are shown in Table 13. The Perceived Monitoring latent variable had only two composites as indicators, so a CFA of composites was not possible. Therefore for Perceived Monitoring the CFA fit statistics reported were based on an analysis of the individual items.

Self-reported delinquency (SRD). Preliminary Confirmatory Factor Analyses (CFAs) were used to evaluate the adequacy of the factor structure of SRD at Wave 1 and Wave 2. Using the SRD categorization developed within the NSCAW II dataset (see Table 14), the final factor structure (see Figure 3) for SRD was based on Amos fit

statistics, and followed the classification criteria as identified by Trembley (Goldstein & Rider, 2006). To extract the fit statistics of the SRD dependent variable, composites were created for the three categories of delinquency (Minor Offenses, Offenses Against Property and Offenses Against Persons). Using Amos, fit statistics were derived and are listed in Table 15 (see Appendix E, Table E for alternative models considered and comparable fit statistics).

Table 14.

SRD Categorization; Based on NSCAW II Composite Variables¹.

Minor Offenses	Offenses Against Property	Offenses Against Persons
Status Offenses	Felony Theft	Felony Assault
Public Disorder	Fraud	Robbery
	Minor Theft	Illegal Services
	Damage to Property	

¹ See Table B2 for items included in each category

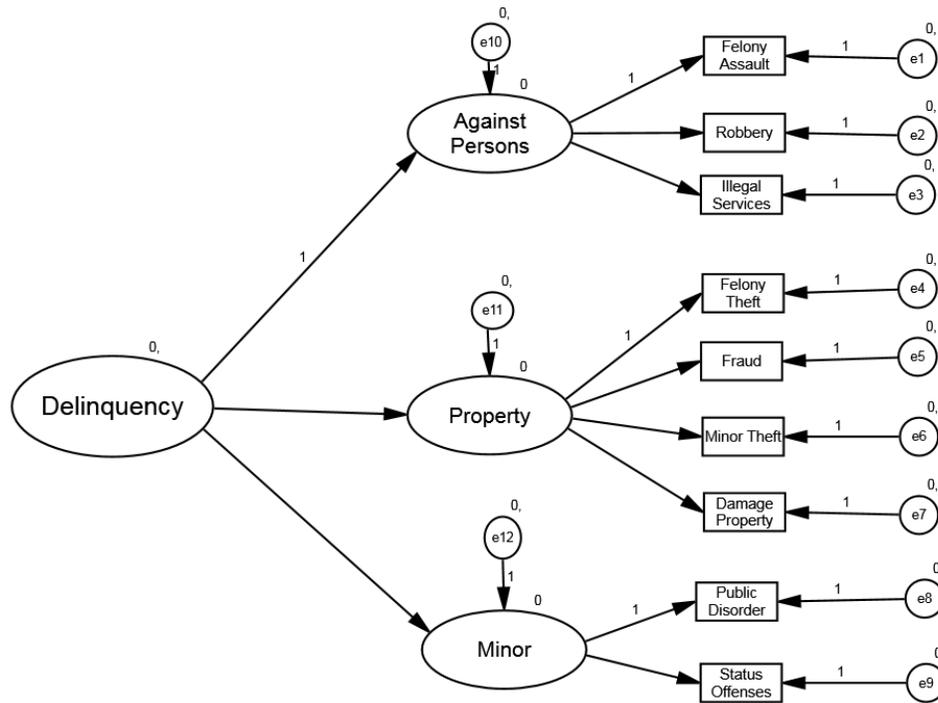
Table 15.

Delinquency Latent Variable Fit Statistics Using Composites for Subtypes of SRD: Wave 1 & Wave 2.

	Wave 1	Wave 2
Chi-square (df)	172.417 (24)	453.248 (24)
RMSEA	0.032	0.055
CFI	0.935	0.825
TLI	.878	.673

Figure 3.

Delinquency as a Latent Variable



Model estimation

The hypothesized structural equation model was analyzed using Amos (version 21; Arbuckle, 2012). Amos handles missing data using the Full Information Maximum Likelihood (FIML) procedure. Currently, FIML is a strongly recommended procedure for handling missing data (Enders, 2010; Schafer & Graham, 2002). Model estimation was conducted by first examining the measurement model (also referred to as the confirmatory factor model), followed by the full structural equation model (Keith, 2006; Kline, 2011).

As previously discussed in the Method section, a number of fit statistics were used to evaluate how well the specified model explained the data. Chi-square was calculated for each of the models, with statistically nonsignificant *p*-values indicating a good fit. Chi-square is sensitive to sample size and may be statistically significant due to a large sample size (Keith, 2006) or non-normality (Curran et al., 1006), therefore additional fit indexes were included to inform model fit. The comparative fit index (CFI) and Tucker-Lewis Index (TLI) estimate the improvement in fit provided by the estimated model over the null model, with values over .9 indicating an adequate fit, while values over .95 indicating a good fit (Hu & Bentler, 1999; Keith, 2006). The root mean square error of approximation (RMSEA) estimates the approximate fit of a model relative to the degrees of freedom of the model, with values below 0.08 represent adequate fit and values below 0.5 represent a good fit (Hu & Bentler, 1999; Keith, 2006).

Measurement Models

A CFA was performed to ensure the validity of all the predictor and outcome latent constructs in the model. CFAs were performed on two models: the first model used the overall Self-Reported Delinquency (SRD) acts latent variable and the second model separated delinquency into 3 categories, acts against persons, against property and minor offenses. For all models, composites of items were used as indicators of the latent constructs. To conduct the CFAs, covariances were allowed among all latent variables, and between latent variables and measured variables that were not used to estimate latent variables. The resulting fit statistics were an indication of whether the measured variables reflected the underlying latent constructs (see Table 16 for all fit statistics). These

analyses suggested that latent variables were adequately measured by the measured variables, and that the measured and latent variables were separable as suggested by the model. The final measurement model was used as a basis for the full structural equation model, in which paths between the latent variables were estimated.

Table 16.

<i>Measurement and Structural Model Fit Statistics</i>				
	Chi-square (df)	RMSEA	CFI	TLI
Measurement Models:				
Overall SRD ^a	487.977 (157)	.045	.937	.907
3 subtypes of SRD acts	308.014 (116)	.040	.963	.927
Structural Models:				
Overall SRD	498.464 (163)	.044	.936	.909
3 subtypes of SRD acts	319.330 (122)	.039	.962	.928

^a SRD Self Reported Delinquency

Structural Model Fit

For the structural model, the correlations in Figures 4 and 5 were replaced by directional paths from the background variables and intervening variables to SRD. For the second model the three types of delinquencies were used as the dependent variables. The structural model with overall SRD is depicted in Figure 4 (errors are not shown in the models to simplify the presentation). The structural model using the 3 types of delinquent acts as a dependent variable is depicted in Figure 5. Versions of these same models showing only statistically significant effects are shown in Figure 6 through 9. Fit statistics of the measurement and structural models are included in Table 16.

Figure 4.

Final Structural Model with Overall SRD as Dependent Variable

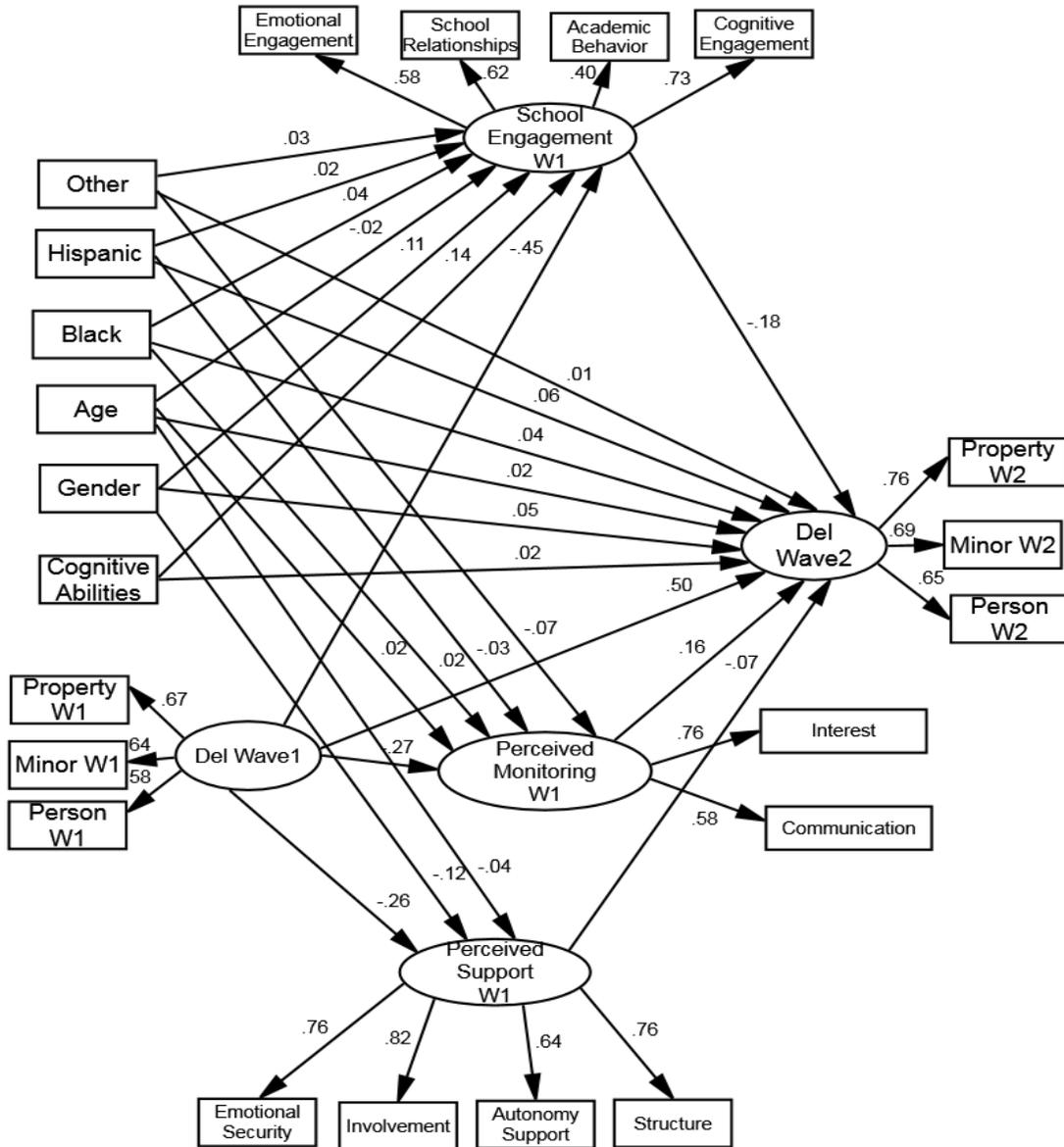
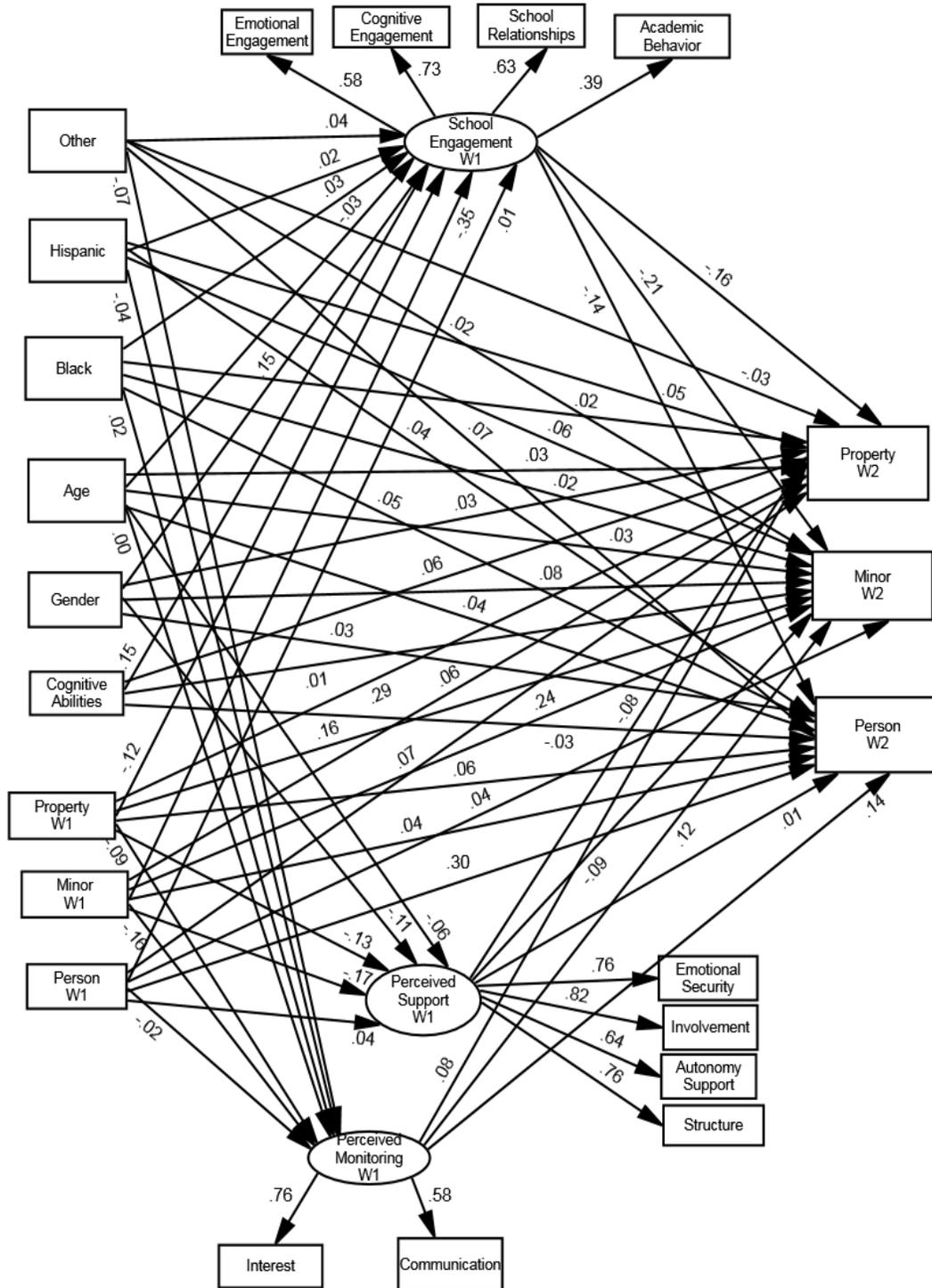


Figure 5.
Final Structural Model with the Three Subtypes of Delinquent Acts as the Dependent Variable.



As shown in the table, each model had an adequate to good fit to the data, suggesting that the data could have been produced by a process like those illustrated by these models. Given this adequate fit, the model results were used to answer the research questions posed in this dissertation.

Tests of Research Questions

To answer the research questions direct, indirect and total standardized estimates were calculated.

Research Question 1.1. What are the effects of the protective mechanisms (Perceived Support, Monitoring, and School Engagement) on overall delinquency?

Results. It was hypothesized that all three intervening variables would reduce delinquency reports at Wave 2. It was hypothesized A) Perceived Support would have the second largest effect on delinquency; B) Monitoring would have the strongest effect on delinquency; and C) School Engagement would reduce overall delinquency involvement at wave 2, but less so than the other variables. This hypothesis was partially supported (Table 17 shows the standardized direct, indirect and total effects on the overall SRD variable. Research Question 1.1 is addressed by the direct effects of the three variables of interest.

School Engagement had a statistically significant negative effect on overall delinquency at Wave 2. The more engaged youth were with their school, the less likely they were to engage in delinquent behaviors 18 months later. Perceived Support and Perceived Monitoring at Wave 1 did not have a statistically significant effect on overall

delinquency at Wave 2. Thus School Engagement was the only variable of interest that reduced SRD 18 months later.

Table 17.

Standardized Direct, Indirect and Total Effects On Overall SRD at Wave 2

Predictor	Direct Effects	Indirect Effects	Total
Child Age	.022	.009	.031
Cognitive Abilities	.024	-.025 ^b	-.001
Gender	.051	-.012	.038
Black	.043	-.004	.039
Hispanic	.063	-.009	.054
Other	.010	-.017 ^a	-.007
Delinquency at Wave 1	.504 ^b	.056 ^a	.560 ^b
Perceived Support	-.067	--	-.067
Perceived Monitoring	.157	--	.157
School Engagement	-.181 ^a	--	-.181 ^a

Note: ^a denotes $p < .05$; ^b denotes $p < .01$

Research Question 1.2 What are the effects of the protective mechanisms on specific types of delinquency?

Results: It was hypothesized that A) Perceived Support (at wave 1) would reduce minor offenses and crimes against persons (at wave 2); B) Monitoring (at wave 1) would have the strongest negative effect on all delinquency measures (wave 2), reducing all three categories of delinquent acts; and, C) School Engagement (at wave 1) would also reduce minor offenses and crimes against persons (at wave 2). This hypothesis was partially supported. The results are shown in Tables 18, 19, and 20 (direct effects for the three protective variables).

Contrary to hypotheses, Perceived Support, had a statistically significant negative effect only on minor offenses. Youth who perceived higher levels of caregiver support at wave 1, reported lower levels of minor offenses at wave 2.

Table 18.

Standardized Direct, Indirect and Total Effects On SRD: Against Persons at Wave 2

Predictor	Direct Effects	Indirect Effects	Total
Child Age	.042	.004	.047
Cognitive Abilities	-.027	-.021 ^a	-.048
Gender	.026	-.022 ^a	.004
Black	.054	-.002	.052
Hispanic	.045	-.008	.037
Other	.066 ^a	-.015 ^a	.051
Against Person W1	.304 ^b	-.004	.300 ^b
Against Property W1	.059	.002	.061
Minor Offenses Wave 1	.041	.026	.067 ^a
Perceived Support	.012	--	.012
Perceived Monitoring	.139 ^b	--	.139 ^b
School Engagement	-.141 ^b	--	-.141 ^b

Note: ^a denotes $p < .05$; ^b denotes $p < .01$

Table 19.

Standardized Direct, Indirect and Total Effects On SRD: Against Property at Wave 2

Predictor	Direct Effects	Indirect Effects	Total
Child Age	.032	.010	.042
Cognitive Abilities	.058	-.024 ^b	.034
Gender	.035	-.014	.020
Black	.021	-.004	.017
Hispanic	.047	-.006	.041
Other	-.031	-.012	-.043
Against Person W1	.074 ^a	-.006	.068 ^a
Against Property W1	.286 ^b	.022 ^b	.307 ^b
Minor Offenses Wave 1	.055	.057 ^b	.112 ^b
Perceived Support	-.080	--	-.080
Perceived Monitoring	.083	--	.083
School Engagement	-.160 ^b	--	-.160 ^b

Note: ^a denotes $p < .05$; ^b denotes $p < .01$

Perceived caregiver monitoring at baseline had a statistically significant *positive* effect on offenses against persons and minor offenses 18 months later, indicating that the more youth perceived themselves being monitored by caregivers (at baseline), then the

more likely they were to report engaging in offenses against persons and minor offenses 18 months later.

School Engagement had a statistically significant and moderate negative effect on all three SRD (against persons, against property, and minor offenses), indicating that youth who reported higher levels of school engagement at baseline showed less reported engagement in the three different types of delinquent acts 18 months later. Thus greater School Engagement resulted in lower levels of overall delinquency and lower levels of each type of delinquency.

Table 20.

Standardized Direct, Indirect and Total Effects On SRD: Minor Offenses at Wave 2

Predictor	Direct Effects	Indirect Effects	Total
Child Age	.061	.012	.044
Cognitive Abilities	.046	-.031 ^b	-.016
Gender	.076 ^a	-.021	.056 ^a
Black	.016	-.005	.016
Hispanic	.058 ^a	-.008	.052
Other	.026	-.016 ^a	.002
Against Person W1	.087	-.008	.033
Against Property W1	.105 ^b	.025 ^a	.180 ^b
Minor Offenses Wave 1	.224 ^b	.069 ^b	.314 ^b
Perceived Support	-.088 ^a	--	-.088 ^a
Perceived Monitoring	.124 ^a	--	.124 ^a
School Engagement	-.209 ^b	--	-.209 ^b

Note: ^a denotes $p < .05$; ^b denotes $p < .01$

The second purpose of this research was to examine the effects of the intervening variables on youth who reported delinquent acts (at wave 2) and compare them to youth who did not engage in delinquent acts by wave 2.

Research Question 2.1. To what extent are the levels of Perceived Support, Perceived Monitoring and School Engagement (at wave 1) of youth who report delinquent

acts at Wave 2 similar to youth who do not report committing delinquent acts?

Results: It was hypothesized youth who report engaging in delinquent acts (at wave 2) would initially report, at wave 1, lower levels of perceived support, perceived monitoring, and school engagement when compared to youth who did not engage in delinquent acts at wave 2. Although these findings are related to those presented already (the paths from the protective levels to delinquency at wave 2), this question was designed to provide additional, more detailed, description of the levels of the indicators of the protective factors by whether any delinquent acts were reported. To complete this descriptive analysis, *t*-tests were conducted (equal variances not assumed) for each of the three protective variables of interest. Self-Reported Delinquency at Wave 2 was converted into a categorical variable: Group 1 did not report any delinquency at Wave 2 and Group 2 reported at least 1 delinquent act. SRD at Wave 2 was used as the independent variable in this analysis, while the variables Perceived Support, Perceived Monitoring and School Engagement were used as dependent variables. This analysis was purely descriptive, designed to test whether the means of the identified variables were significantly different depending on group affiliation. Cohen's *d* was derived as a measure of the differences in Perceived Support, Perceived Monitoring and School Engagement by SRD. The standard interpretation of Cohen's *d* values was utilized, whereby a value of .8 or above is considered a large effect, a value between .5-.79 is considered a moderate effect, and finally a value between .2-.49 is considered a small effect (Pallant, 2007).

To conduct these analyses, composites were created for Perceived Support, Perceived Monitoring and School Engagement (see Table 19 for means, *t* values and

degrees of freedom). With levels of Perceived Support, *t*-test results indicated there was a statistically significant difference between participants who reported at least one delinquent act at Wave 2 and those participants who did not report any delinquent acts at Wave 2. Participants who did not report any offenses at Wave 2 indicated a higher level of perceived support by caregivers than those youth that committed at least one offense. However, Cohen’s *d* effect size value suggested a small effect size.

With levels of Perceived Monitoring, *t*-test results indicated there was no statistically significant difference between participants who reported at least one delinquent act at Wave 2 and those participants who did not report any delinquent act at Wave 2. Further, Cohen’s *d* effect size value suggested very low practical significance.

Finally in regards to levels of School Engagement, *t*-test results indicated there was no statistically significant difference between participants who reported at least one delinquent act at Wave 2 and those participants who did not report any delinquent act at Wave 2. Further, Cohen’s *d* effect size value suggested very low practical significance.

Table 21.

Levels of Protective Variables for those Who Did, versus Did Not, Report Delinquency at Wave 2.

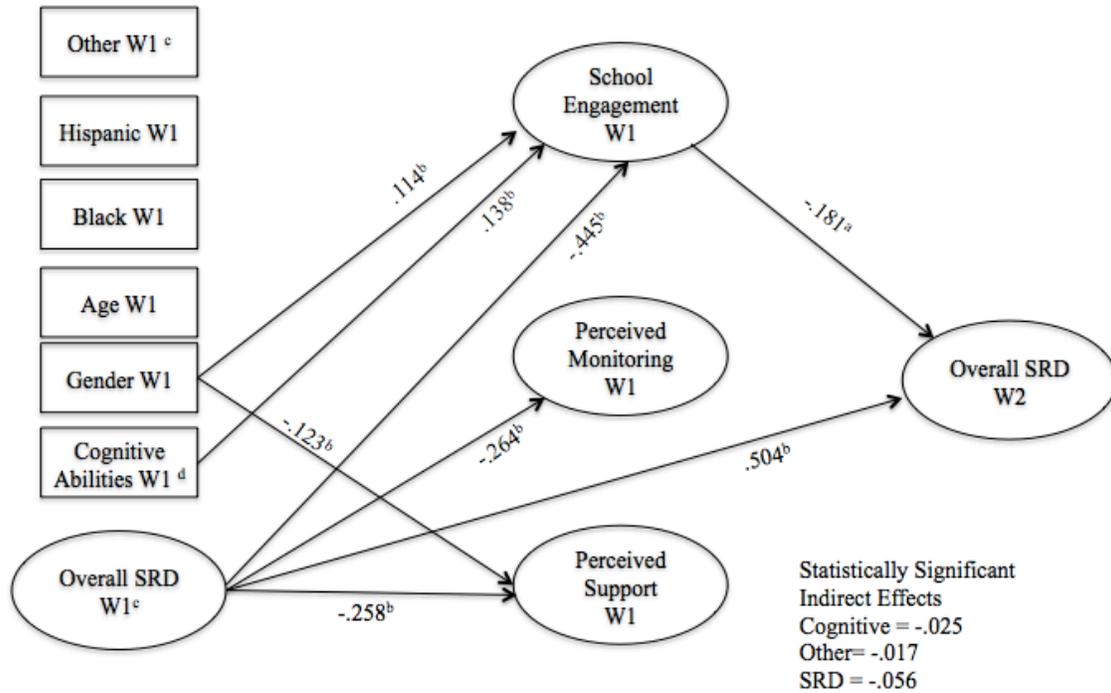
	Group		t (df)	P -value	Cohen’s <i>d</i>
	No Delinquency Mean (SD)	One or More Delinquent Offense Mean, (SD)			
Perceived Support	13.38 (2.162)	12.96 (2.485)	2.938 (1,024)	.003	.008
Perceived Monitoring	37.69 (5.789)	37.36 (5.632)	.807 (775)	.420	.0008
School Engagement	-138.82 (802.448)	-208.23 (933.647)	1.297 (1,052)	.195	.002

Exploratory Research Questions

Results contrary to hypotheses, specifically as Perceived Monitoring did not reduce SRD at Wave 2, prompted an exploration of the control variables effects onto the intervening variables and SRD at Wave 2. Two additional analyses were conducted: to examine the direct effects of the control variables onto the intervening variables; and, to explore the extent to which Perceived Support, Perceived Monitoring and School Engagement mediated the effects of the control variables (child age, race, cognitive abilities, gender and SRD at wave 1) on SRD at wave 2. Figures 6 through 9 show the statistically significant direct and indirect effects of the background variables on the SRD outcomes via each of the protective factors (for a more comprehensive look at each individual variable refer to Appendix D, Tables D.1 through D.4).

Figure 6.

Standardized Direct and Indirect Effects onto Overall SRD as Mediated by Intervening Variables



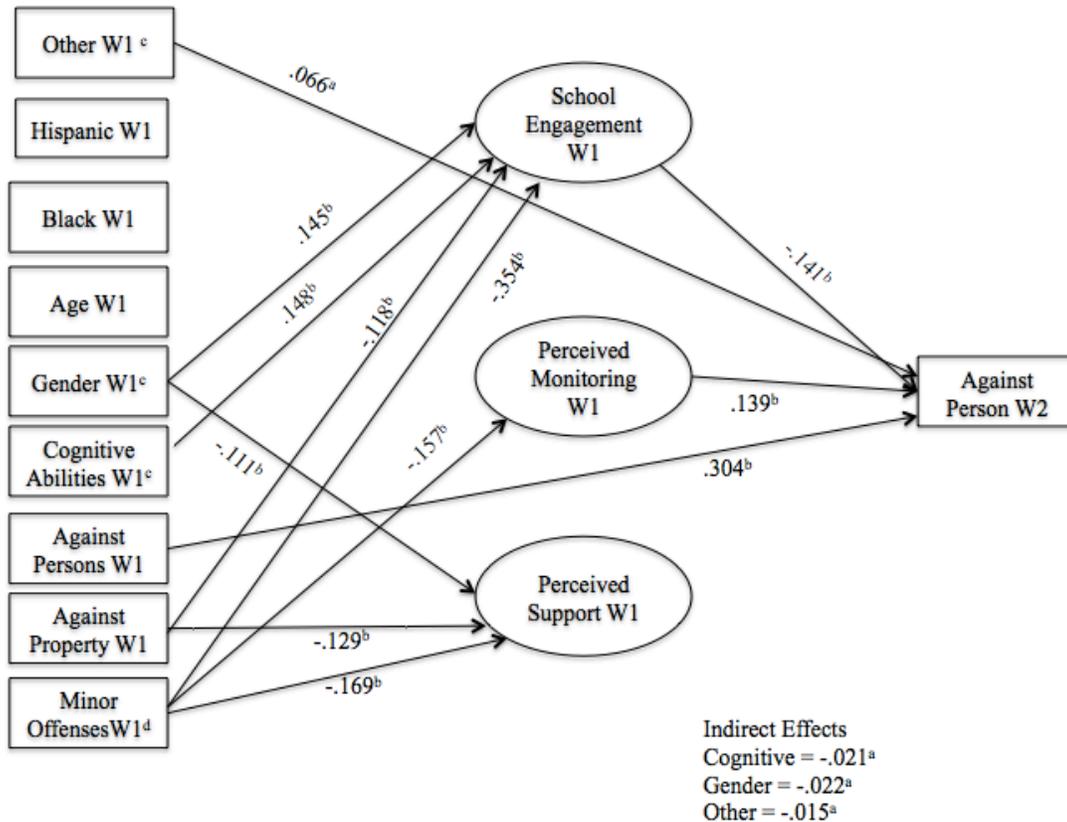
Note: ^a statistically significant direct effects $p < .05$; ^b statistically significant direct effects $p < .01$
^c Variable with statistically significant total indirect effect upon overall SRD $p < .05$ ^d Variable with statistically significant total indirect effect upon overall SRD $p < .01$

As shown in previous tables (tables 17-20) the background variable cognitive ability had consistent, statistically significant indirect effects on SRD and components of delinquency. In all four analyses examining the effects of the variables onto SRD at wave 2, the direct effect of cognitive abilities on SRD at wave 2 was non-significant. However, in each case, the indirect effect was small but statistically significant, indicating that youth with higher cognitive abilities reported less delinquency (Tables 17- 20). Figures 6 through 9 show that this indirect effect was consistently mediated through the variable School Engagement. That is, students with higher levels of cognitive ability reported

higher levels of school engagement, and that engagement, in turn, reduced delinquency.

Figure 7.

Standardized Direct and Indirect Effects onto SRD: Against Person, as Mediated by Intervening Variables



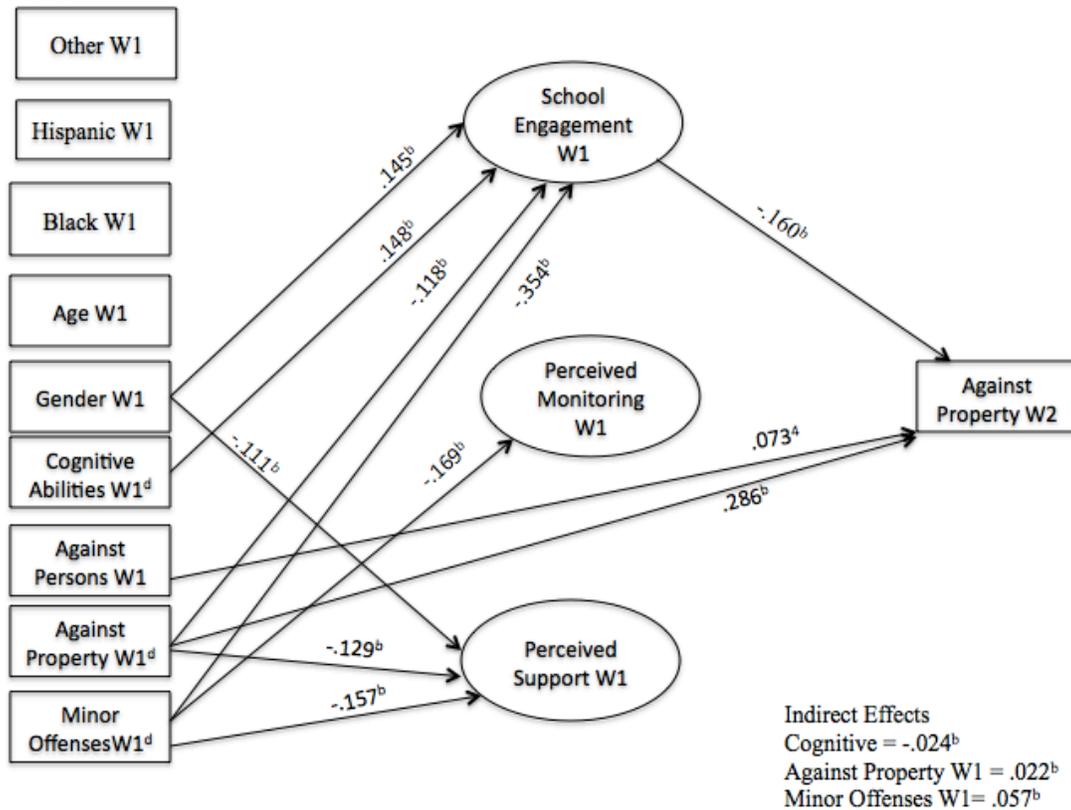
Note: ^a statistically significant direct effects $p < .05$; ^b statistically significant direct effects $p < .01$; ^c Variable with statistically significant indirect effects upon SRD: Against person, $p < .05$; ^d Variable with statistically significant total indirect effect upon SRD: Against person, $p < .01$

Another interesting finding (depicted in Figures 6 through 9) related to the effect of gender. Gender had a statistically significant positive direct effect on minor offenses at Wave 2, indicating girls were more likely than boys to engage in minor offenses, with Wave 1 minor offenses controlled (see Table 18). Gender also had a direct effect on Perceived Support and School Engagement, indicating boys reported higher levels of

Perceived Support and girls were more engaged in school (see Figures 6 through 9). Girls showed higher levels of school engagement, and that engagement, in turn, acted as a protective factor against delinquency. Boys reported higher level of perceived support by caregivers, and perceived support acted as a protective mechanism reducing minor offenses 18 months later.

Figure 8.

Standardized Indirect Effects onto SRD: Against Property, as Mediated by Intervening Variables



Note: ^a statistically significant direct effects $p < .05$; ^b statistically significant direct effects $p < .01$; ^c Variable with statistically significant indirect effects upon SRD: Against property, $p < .05$; ^d Variable with statistically significant total indirect effect upon SRD: Against property, $p < .01$

When examining the effects of the ethnic group membership dichotomous

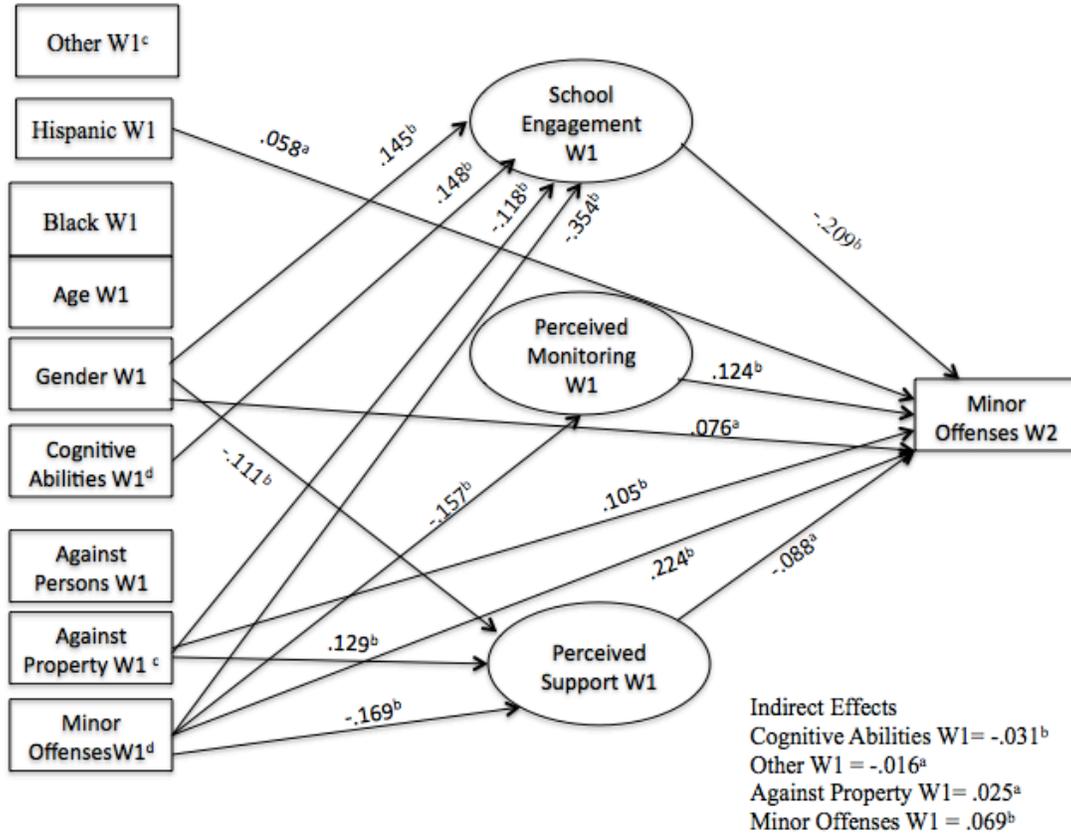
variables on the intervening variables, youth who identified as Hispanic reported higher levels of minor offenses at Wave 2 when compared to youth who self-identified as Black, White or Other. Youth who identified as Other (of Asian, Hawaiian, Pacific Islander or Native American descent), reported higher rates of offenses against person when compared to the other ethnic groups (see Figure 7).

Comparable to previous research indicating current engagement in antisocial behavior (including aggression) is a predictor of future antisocial behavior (Durlak, 1998; Shader, 2003), self-reported delinquency (SRD) (Wave 1) had statistically significant direct effects on all three intervening variables as well as SRD at Wave 2 (see Figures 9 through 11). In regards to the direct effects on the intervening variables, youth who reported low levels of delinquent offenses also reported high levels of perceived support, perceived monitoring and school engagement (see Figures 9 through 11). Youth who reported high levels of SRD at Wave 1 reported high levels of SRD at Wave 2, indicating SRD at Wave 1 was one of the strongest predictors of SRD at Wave 2.

When examining the three subtypes of SRD, youth who reported lower property and minor offenses at baseline reported higher levels of perceived support and school engagement at baseline (see Figures 9 through 11). In addition, youth who reported fewer minor offenses at Wave 1 reported higher rates of Perceived Monitoring during the same time point. All three subtypes of delinquency, offenses against persons and property and, minor offenses at Wave 1 had a small to moderate statistically significant indirect effect on offenses against persons and property and, minor offenses at Wave 2 (respectively).

Figure 9.

Standardized Indirect Effects onto SRD: Minor Offenses, as Mediated by Intervening Variables



Note: ^a statistically significant direct effects $p < .05$; ^b statistically significant direct effects $p < .01$; ^c Variable with statistically significant indirect effects upon SRD: Against property, $p < .05$; ^d Variable with statistically significant total indirect effect upon SRD: Against property, $p < .01$

Supplemental analyses

As noted at the beginning of the results section, the delinquency variables used as measured indicators of a latent delinquency variable were non-normal, showing skew and kurtosis values exceeding 2 and 7, respectively. Simulation research has shown that using a Maximum Likelihood (ML) method can lead to overestimation of χ^2 values (Curran et al., 1996), underestimation of fit indices such as CFI and TLI (West, Finch, & Curran, 1995), and underestimation of standard errors of parameter values (West et al., 1995). The

final of these limitation is the most important for this study, in that it could lead to the erroneous conclusion that effects are statistically significant when they are not. One recommended solution is the use of the Bollen-Stine non-parametric bootstrap method when dealing with high levels of skewness and kurtosis. However, raw data must be used to calculate the model using the Bollen-Stine bootstrap (Kline, 2011). In addition, Kline (2011) noted that a Bollen-Stine bootstrap methodology could only be used if less than 20% of the data are missing and listwise deletion is utilized. In this current study, a correlation matrix was used to analyze the data due to the varying number of missing data points across variables (see Table 5 for number of participants per variable). Therefore a Bollen-Stine bootstrap was not applied to the measurement and structural models. The implication is paths in the model are at-risk for Type I error rates.

To rectify this concern and verify results from the main analysis, two different supplemental analyses were conducted to reduce skewness and kurtosis. In the first analysis, log transformations of all three subtypes of delinquencies (at Wave 1 and Wave 2) were applied to the data. This transformation reduced both the skew and kurtosis, with the resulting values within the recommended range. These log-transformed variables were used in a reanalysis of the overall delinquency model. Results were very similar to the primary analysis. School engagement had a statistically negative effect on Overall Delinquency at Wave 2, indicating youth who reported higher levels of engagement in school at baseline were less likely to report in engaging in delinquent acts at wave 2. As with the main analysis, youth who reported higher levels of delinquent acts at baseline also reported lower levels of school engagement, perceived support, and perceived

monitoring. In addition, similar to the main analysis, self-reported delinquency at Wave 1 had a statistically significant positive effect on self-reported delinquency at Wave 2. It also had the largest effect on delinquency at Wave 2 making delinquency at Wave 1 the best predictor of delinquency at Wave 2. When examining indirect effects, as with the main analysis, cognitive abilities and self-reported delinquency at Wave 1 had a statistically significant effect on delinquency at Wave 2. In addition, youth who identified as Other (on the race variable) reported significantly less delinquency at Wave 2 (a statistically significant, negative effect on delinquency at Wave 2).

For the second supplemental analysis, a random subsample was extracted from an Overall Self Reported Delinquency composite (SRD) variable at Wave 2. Students who reported no delinquent acts were subsampled (54 out of 465 selected) so that this response was no more common than any other (i.e., there were also 54 youth who reported one delinquent act). As with the main analysis and the log transformation analysis, youth who reported higher levels of delinquent acts at baseline also reported lower levels of school engagement, perceived support, and perceived monitoring at the same time. All effects were in the same direction as the primary analyses, although there was a different pattern of statistical significance for some of the variables. This finding is not surprising given that the smaller sample size resulted in lower power for this analysis. Perceived Monitoring had a statistically significant positive effects on Overall Delinquency on Wave 2, indicating youth that reported higher levels of monitoring at Wave 1 also reported higher levels of engagement in delinquent acts at Wave 2. Unlike the main analysis and the log transformation analysis, school engagement did not have a statistically significant

effect on delinquency at Wave 2 (the effect was negative, as in previous analysis, but it was not statistically significant).

In summary, the direct and indirect standardized effects in both supplemental analyses were similar to outcomes from the original analysis. These analyses thus provide further support for the validity of the original findings.

Chapter 5: Discussion

The purpose of this study was to determine whether perceived support, perceived monitoring, and school engagement act as protective mechanisms to reduce overall delinquency and specific subtypes of delinquency for youth who came into contact with the Child Protective Services (CPS). A large, and geographically diverse sample of youth, who were being investigated as potential victims of maltreatment, was studied. SEM was used to determine whether the variables of interest act as protective mechanisms not only in preventing delinquency in general but also in preventing subtypes of delinquency.

The results indicated that the community level protective mechanism of school engagement and the family-level protective mechanism of perceived caregiver support had long-term effects reducing either overall delinquency or subtypes of delinquency 18 months later. At the community level, higher levels of school engagement during the time of CPS investigation led to lower levels of overall delinquency and lower levels of all three subtypes of delinquency, even after controlling for delinquency at wave 1. A family-level protective mechanism, perceptions of support by a caregiver at the time of CPS involvement, reduced reports of minor offenses 18 months later, again controlling for delinquency at wave 1. Contrary to expectation, the greater the perceptions of caregiver monitoring that youth reported at baseline, the more likely they were to report engaging in offenses against persons and minor offenses behaviors 18 months later. Exploratory follow-up analyses suggested the strongest predictor of future delinquency was current delinquency.

Conduct Competence & School Engagement

The results from this study add to a growing body of research highlighting school engagement as a protective mechanism for at-risk youth. With this cohort of youth, School Engagement proved to be the most protective mechanism in the study, with higher levels of school engagement reducing all three types of reported delinquencies 18 months later. This outcome is consistent with previous research that has documented how school engagement acts as a protective mechanism for youth in general and for youth at risk for delinquency. For example, school bonds, school performance, and low rates of in-school behavioral problems are consistently found to serve as protective mechanisms reducing delinquency overall and violent behavior specifically for youth at risk for delinquent behavior (Herrenkohl, et al., 2003; Minnard, 2002; Zingraff et al., 1994).

When examining the mediating effects of School Engagement in this study, two interesting findings emerged. First, although Cognitive Abilities did not have a statistically significant direct effect on overall Self Reported Delinquency (SRD) or the three subtypes of SRD, there was an indirect effect, mediated by school engagement. The results from this study, therefore indicate that youth with higher levels of cognitive abilities reported higher levels of school engagement, and that school engagement reduced delinquency. In addition, School Engagement was a more powerful protective mechanism for girls than boys. Girls compared to boys reported higher levels of school engagement which in turn reduced delinquency. Therefore School Engagement promoted conduct competence by reducing involvement in delinquent behaviors

Conduct Competence and Perceived Monitoring

Results showed that Perceived Monitoring by a caregiver predicted higher rates of self-reported minor offenses and offenses against persons, which was contrary to expectations. The more youth perceived their caregivers as monitoring their behavior during the time of the CPS investigation, the more likely they were to report engaging in offenses against people and minor offenses 18 months later. This outcome matches Kiesner and colleagues (2009) findings whereby the more parents attempted to get information from their teens (referred to in the literature as the parental solicitation factor) the more likely youth would report antisocial acts 12 months later. As Fletcher et al. (2004) noted, it seems likely that when youth are engaging in risky behaviors caregivers are more likely to monitor them, yet the increased monitoring does not reduce the risky behavior in the future.

Previous research has shown that youth disclosure (defined as youth who voluntarily share information with adult caregivers) is a key component of monitoring and has been linked to reductions in delinquency (Fletcher et al., 2004; Kiesner et al. 2009; Stattin & Kerr 2000; Wang et al., 2013). In this dataset, items used to measure Perceived Monitoring matched closely to factors defined as parental control (defined as the more traditional perspective of monitoring: supervision and structuring) and parental solicitation (defined as information parents attempt to get from youth and children) (Stattin & Kerr, 2000) (for more information on items used see Appendix A, Table A1). In this study, the Perceived Monitoring variable did not include a youth disclosure component, a possible explanation for the outcomes.

Another possible explanation is that monitoring functions as a concurrent mediator of risk events and delinquency. In the current dataset, caregiver monitoring and delinquency were both measured over the previous 6 months. The evidence suggests, the predicted relationship between monitoring and delinquency *may* exist when both variables are measured at the same time. In other words monitoring may work as a concurrent protective variable, but may not necessarily change youths developmental trajectory. Based on these outcomes, the underlying implication is that how and when monitoring is measured can affect delinquency. Future research may want to further explore this implication.

Conduct Competence and Perceived Support

Contrary to expectation, youths' perceptions of support by a primary caregiver (during initial involvement with the CPS) did not reduce overall delinquent behavior 18 months later; however, perceived support at Wave 1 did reduce minor offenses at Wave 2. Based on this sample of youth, perceiving a positive relationship with a primary caregiver, one that provides emotional security and structure, and includes involvement and supports autonomy, is a protective mechanism against minor offenses. This outcome supports previous research, that has documented the protective effects of a relationship with an adult caregiver (Afifi & MacMillan, 2011; Masten et al., 1990; Masten & Coatsworth, 1998). Unlike other findings though, Perceived Support did not reduce the engagement in violent offenses against people (Sousa et al., 2011). The findings that Perceived Support does not reduce overall delinquency or offenses against property and persons are a unique and interesting contribution to the field of resilience and warrants further exploration.

A possible explanation for this outcome, centers of the quality of the relationship between the youth and the caregiver. In this study, who the caregiver was, and the length of the relationship, were not considered. These components could feasibly affect youth perceptions of support, as a shorter-term relationship with a foster parent, or living in a group home, may have different effects when compared to a potentially more established longer-term relationship with a biological parent or living with extended family.

Broadening this explanation, youths early attachment style was also not included in this analysis. An extensive body of work has highlighted the longitudinal effects of individuals' attachment style in areas such as self and interpersonal regulation, family functioning and romantic relationships, with the quality of the attachment affecting subsequent emotional and social development (Cicchetti & Valentino, 2006; Haskett et al, 2006; Vrtička & Vuilleumier, 2012; Zeanah & Smyke, 2011). As the measures were not designed to assess attachment style, this could possible explain the discrepancy between the extant literature and the study outcomes.

A final possible explanation is that there could be an interaction between perceived monitoring and perceived support, in that perceived support works in conjunction with perceived monitoring, not separately (Barnes, Reifman, Farrell, & Dintcheff, 2000; Grogan-Kaylor et al. 2008)

Limitations

One of the strengths of this study was that it was a secondary analysis of a longitudinal, national survey, which resulted in a large and geographically diverse sample of youth and children, which are typically hard to identify and collect data on. In addition,

it allowed for the inclusion and examination of three protective mechanisms. However, the use of a secondary analysis also presented several limitations.

One limitation is one often cited when using extant databases. Typically extant databases provide access to populations that have historically been challenging to study. For example, conducting research with children and youth involved in CPS is a challenge due to the nature of offenses, difficulty in locating and tracking participants and the importance of partnering with CPS agencies to have access to records. Extant databases, like NSCAW-II, therefore provide access to a sample of youth that are at-risk and are difficult to track, yet researchers are limited to the measures used by the agencies that are collecting the data. In this study for example, it was not possible to include the “youth disclosure” component of monitoring, instead monitoring was comprised of items that measured what Stattin and Kerr (2000) refer to as parental control and parental solicitation.

Another limitation is that the sampling weights were not used in this study making it difficult to extrapolate the findings to youth determined to be at risk due to other variables (beyond potential maltreatment exposure).

Despite these concerns, the NSCAW II database provides access to a large sample allowed typically difficult to conduct research on. In addition, the study was able to examine the effect of three possible intervening variables over an 18-month period. Thus allowing for a more complex, thorough investigation of protective mechanisms.

Implications for Research

Regardless of the limitations, a major strength of this study was the use of a longitudinal dataset that included a nationally sample of youth. This research also

examined multiple protective mechanisms within the sample. Past research has demonstrated the cascading negative effects of risk exposure (Masten & Cicchetti, 2010). Children and youth under investigation as potential victims of maltreatment have shown to experience negative long-term outcomes (Campbell et al., 2010; Hussey et al., 2005).

Using exposure to a CPS investigation as a risk event, this study examined the effects of intervening variables on subsequent delinquency, a proxy for conduct competence and a representation of resilience. Outcomes from this study can contribute to the conceptualization of how youths' developmental trajectories, can change to a more positive direction, if youth can be engaged in school.

Future research may want to examine whether the outcomes from this model hold true across males and females, as well as for youth from different ethnic backgrounds. In addition, future research may want to examine whether the outcomes from this study remain the same regardless of case determination or substantiation for different types of maltreatment. Future research may also consider adding a risk variable associated with substantiation can help determine whether protective mechanisms have differential effects based upon the level of risk.

The inconclusive outcomes associated with the Perceived Monitoring variable warrant further exploration. For researchers interested in understanding how monitoring can be most effective, it may be of interest to determine if parental solicitation (as a component of monitoring) functions as a concurrent protective mechanism (reducing current delinquency) in contrast to the current study that examined monitoring as a distal protective mechanism and the effects on delinquency 18 months later. Researchers may

also want to consider whether perceived support by the caregiver, mediates perceived monitoring for children and youth who come into contact with CPS, as previous research has shown (Brody & Flor, 1998; Martinez et al., 2004).

Implications for Clinical Practice

For clinical practice this research study a key outcomes. For youth, who come into contact with CPS, clinicians may be more successful in treatment provision if they reach out to schools and foster a positive relationship, ones that increase emotional and cognitive engagement and improve academic behaviors and school relationships between youth and school staff. This outcome adds to a robust body of evidence that speaks to the crucial role that school engagement, as a community level resource, can play during more challenging times. The transition from youth into young adulthood has been identified as a “window of opportunity” (Masten & Powell, 2003, pp. 11) whereby youth’s developmental pathways are more likely to shift into a more resilient direction if the appropriate protective mechanisms are in place. Therefore, for this cohort of youth, schools can function as a protective mechanism and play an important role by assisting youth to build the emotional, cognitive and academic skills needed, as youth negotiate a very turbulent time: their transition into young adulthood.

In addition, this outcome supports the ongoing development and expansion of projects such as The Penn Resiliency Program (PRP) (Reivich & Gillham, 2010). While the PRP focuses on the development of cognitive and social problem-solving skills (Reivich & Gillham, 2010), evidence from this study supports the notion of extending the program to include building relationships within the school setting by bringing in teachers

and counselors, adults who can follow or advocate for children and youth as they move through the school system, increasing the likelihood of the youth experiencing school engagement.

Summary

Every year approximately 3 million children and youth come into contact with CPS. This study builds upon body of evidence that children and youth being investigated by CPS as possible victims of maltreatment are at-risk for negative outcomes regardless of the final case determination.

When children and youth come into to contact with CPS, access to services and interventions depends upon whether caseworkers determine the allegations were substantiated (Jonson-Reid, 2002). The outcomes of this study contribute to a growing body of knowledge that regardless of case determination (substantiation or not), that school and school personnel provide more than just access to academics, they also can potentially assist youth in building relationships that can promote conduct competence. Future research on youth exposed to CPS should take into account the importance of the school system as an important influence and as a potential partner in the provision of services.

Appendix A: Categorization of Variables Included in Study

Table A1.

Intervening Variables

Latent Variable	Measured Variable	Items Used ^(Questions Number)	
Perceived Support(Cg A; primary caregiver)* *Derived from the Relationship with Caregiver measure	Emotional security	When I'm with my Cg A, I feel good ^(1A)	
		When I'm with my Cg A, I feel mad ^(2A)	
		When I'm with my Cg A, I feel unhappy ^(3A)	
	Involvement		My Cg A enjoys spending time with me ^(4A)
			My Cg A does a lot to help me? ^(5A)
			My Cg A doesn't seem to have enough time for me? ^(6A)
			My Cg A doesn't seem to know how I feel about things? ^(7A)
	Structure		My Cg A is fair with me ^(10A)
			My Cg A doesn't think I can do very much ^(11A)
			I don't know what my Cg A wants from me ^(12A)
	Autonomy support		My Cg A trusts me ^(8A)
My Cg A doesn't let me make any of my own decisions? ^(9A)			
Perceived Monitoring	Interest	How often did Cg A talk to you about what you were going to do for the coming day ⁽⁷⁾	

How often did Cg A talk to you about what you had actually done during the day ⁽⁸⁾

How often did Cg A talk to you about how things were going at school ⁽⁹⁾

Communication

How often do you have a set time to be home on school night ⁽¹⁰⁾

How often do you have a set time to be home on weekend nights ⁽¹²⁾

If you did not come home by the time that you were supposed to be in, how often would your Cg A know? ⁽¹⁴⁾

When you are out, how often does your Cg A know what time you will be home? ⁽¹⁸⁾

When your Cg A is not home, how often do you know how to get in touch with him/ her ⁽¹⁹⁾

When you and your Cg A are both at home, how often does he/ she know what you are doing? ⁽²³⁾

School Engagement

School relationships

How often do you get sent to the office, or have to stay after school, because you misbehaved? ⁽⁷⁾

How often do you get along with your teachers ⁽⁸⁾

How often do you get along with other students ⁽¹¹⁾

Cognitive engagement

How often do you try to do your best work in school ⁽³⁾

	How often do you listen carefully or pay attention in school ⁽⁹⁾
	How often do you get your homework done ⁽¹⁰⁾
Emotional engagement	How often do you enjoy being in school ⁽¹⁾
	How often do you hate being in school ⁽²⁾
	How often do you find your classes interesting ⁽⁵⁾
Academic behavior	How often do you find the schoolwork too hard to understand? ⁽⁴⁾
	How often do you fail to complete or turn in your assignments ⁽⁶⁾

Table A2.

Dependent Variable:

Latent Variable	Measured Variable	Items Used ^(Questions Number)
Minor Offenses:		
Status Offenses	YDE_SOPT=SUM(YDE2A, YDE4A, YDE6A)	Have you run away from home ⁽²⁾
		Have you skipped classes or school without an excuse ⁽⁴⁾
		Have you lied about your age to get into some place or to buy something, for example lying about your age to get into a movie or to buy alcohol? ⁽⁶⁾
Public Disorder	YDE_PDPT=SUM(YDE8A, YDE12A, YDE16A, YDE14A)	Have you hitchhiked where it was illegal to do so ⁽⁸⁾
		Have you been loud, rowdy, or unruly in a public place so that people

complained about it or you got in trouble? ⁽¹²⁾

Have you been drunk in a public place ⁽¹⁶⁾

Have you begged for money or things from strangers ⁽¹⁴⁾

Crimes Against Property

Felony Theft YDE_FTPT=SUM(YDE44A, YDE30A, YDE40A, YDE24A)

Have you stolen, tried to steal a motor vehicle (car or motorcycle) ⁽⁴⁴⁾

Have you stolen or tried to steal things worth \$50-100 ⁽³⁰⁾

Have you knowingly bought, sold or held stolen goods or tried to do any of these things ⁽⁴⁰⁾

Have you gone into or tried to go into a building to steal something ⁽²⁴⁾

Fraud YDE_FRPT=SUM(YDE46A, YDE50A, YDE48A),

Have you used checks illegally or used a slug or fake money to pay for something ⁽⁴⁶⁾

Have you tried to cheat someone by selling them something that was worthless or not what you said it was ⁽⁵⁰⁾

Have you used or tried to use credit cards or bank cards without the owner's permission ⁽⁴⁸⁾

Minor Theft YDE_MTPT=SUM (YDE26A, YDE42A, YDE28A),

Have you stolen or tried to steal things worth \$5 or less? ⁽²⁶⁾

Have you gone joyriding, that is, taken a motor vehicle, such as a car or motorcycle, for a ride or drive without the owner's permission ⁽⁴²⁾

		Have you stolen or tried to steal things worth between \$5 and \$50 ⁽²⁸⁾
Damage Property	YDE_DPPT=YDE18A,	Have you purposely damaged or destroyed property that did not belong to you, for example, painting, breaking, cutting, or marking up something? ⁽¹⁸⁾

Crimes Against Persons

Felony Assault	YDE_FAPT= SUM (YDE52A, YDE60A, YDE66A)	Have you attacked with weapon or idea of seriously hurting/ killing ⁽⁵²⁾
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Have you been involved in gang fights ⁽⁶⁰⁾

Have you had or tried to have sexual relations with someone against their will? ⁽⁶⁶⁾

Robbery	YDE_ROPT= YDE56A	Have you used a weapon, force, or strong-arm methods like threats to get money or things from people ⁽⁵⁶⁾
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Illegal Services	YDE_ISPT = SUM (YDE62A, YDE68A, YDE70A)	Have you been paid for having sexual relations with ⁽⁶²⁾
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Have you sold marijuana or hashish (pot, grass, hash) ⁽⁶⁸⁾

Have you sold hard drugs such as heroin, cocaine, or crack ⁽⁷⁰⁾

Appendix B: Frequency of Delinquent Acts Endorsed by Youth at Wave 1 and 2

Table B1.

Wave 1, Delinquent Acts: Against Persons

Number of Acts Endorsed	Number of Youth	Percent
0	907	86.1
1	26	2.5
2	20	1.9
3	12	1.1
4	5	.5
5	15	1.5
6	4	.4
7	5	.5
8	2	.2
9	1	.1
10	3	.3
11	2	.2
12	1	.1
13	1	.1
14	0	--
15	0	--
16	1	.1
17	12	.2
18	0	--
19	1	.1
20	1	.1
Missing	45	4.3
Total	1054	100

Table B2.

Wave 1, Delinquent Acts: Against Property

Number of Acts Endorsed	Number of Youth	Percent
0	819	77.7
1	42	4
2	30	2.8
3	30	2.8
4	18	1.7
5	17	1.6
6	7	.7
7	3	.3
8	4	.4

9	9	.9
10	2	.2
11	5	.5
12	2	.2
13	2	.2
14	0	--
15	4	.4
16	4	.4
17	0	--
18	2	.2
19	0	--
20	1	.1
21	1	.1
22	0	--
23	0	--
24	0	--
25	0	--
26	1	.1
27	0	--
28	0	--
29	0	--
30	0	--
31	0	--
32	0	--
33	0	--
34	0	--
35	0	--
36	0	--
37	0	--
38	1	.1
39	1	.1
Missing	49	4.6
Total	1054	100

Table B3.

Wave 1, Delinquent Acts: Minor

Number of Acts Endorsed	Number of Youth	Percent
0	646	61.3
1	88	8.3
2	57	5.4
3	46	4.4
4	26	2.5

5	48	4.6
6	23	2.2
7	16	1.5
8	6	.6
9	11	1.0
10	6	.6
11	13	1.2
12	4	.4
13	6	.6
14	4	.4
15	2	.2
16	3	.3
17	2	.2
18	2	.2
19	0	--
20	0	--
21	0	--
22	0	--
23	0	--
24	1	.1
25	1	.1
Missing	43	4.1
Total	1054	100

Table B4.

Wave 2, Delinquent Acts Against Persons

Number of Acts Endorsed	Number of Youth	Percent
0	763	72.4
1	17	1.6
2	13	1.2
3	5	.5
4	9	.9
5	10	.9
6	3	.3
7	1	.1
8	5	.5
9	0	--
10	4	.4
11	0	--
12	2	.2
13	0	--
14	0	--

15	0	--
16	1	.1
Missing	221	21
Total	1054	100

Table B5.

Wave 2, Delinquent Acts Against Property

Number of Acts Endorsed	Number of Youth	Percent
0	688	65.3
1	38	3.6
2	23	2.2
3	21	2.0
4	12	1.1
5	15	1.4
6	6	.6
7	7	.7
8	3	.3
9	2	.2
10	4	.4
11	1	.1
12	1	.1
13	4	.4
14	1	.1
15	3	.3
16	2	.2
17	0	--
18	1	.1
19	0	--
20	0	--
21	1	.1
22	0	--
23	1	.1
24	0	--
25	0	--
26	0	--
27	0	--
28	0	--
29	0	--
30	0	--
31	0	--
32	0	--
33	0	--

34	0	--
35	0	--
36	0	--
37	0	--
38	0	--
39	0	--
40	0	--
41	0	--
42	0	--
43	1	.1
Missing	219	20.8
Total	1054	100

Table B6.

Wave 2, Delinquent Acts: Minor

Number of Acts Endorsed	Number of Youth	Percent
0	508	48.2
1	56	5.3
2	40	3.8
3	29	2.8
4	13	1.2
5	35	3.3
6	16	1.5
7	13	1.2
8	8	.8
9	8	.8
10	6	.6
11	4	.4
12	5	.5
13	0	--
14	2	.2
15	1	.1
16	2	.2
17	0	--
18	0	--
19	0	--
20	1	.1
21	1	.1
22	0	--
23	1	.1
24	0	--
25	1	.1

Missing	304	28.8
Total	1054	100

Appendix C: Correlations Among Variables in Model

Table C1.

Correlations Among All Variables in Model

	1	2	3	4	5	6	7	8	9
1. Age	1								
2. Cognitive Abilities	0.153 ¹	1							
3. Gender	0.082 ¹	-0.037	1						
4. Prop. W1 ³	0.083 ¹	0.0003	-0.031	1					
5. Minor W1 ³	0.22 ¹	-0.029	0.135 ¹	0.412 ¹	1				
6. Per. W1 ³	0.131 ¹	0.075 ²	-0.060	0.436 ¹	0.346 ¹	1			
7. Emotional Engagement ⁴	-0.057	0.077 ²	0.039	0.126 ¹	0.218 ¹	0.092 ¹	1		
8. Cognitive Engagement ⁴	0.175 ¹	0.062	0.098 ¹	0.204 ¹	0.274 ¹	-0.11 ¹	0.42 ¹	1	
9. School relationship ⁴	-0.004	0.174 ¹	0.039	0.175 ¹	0.294 ¹	0.172 ¹	0.382 ¹	0.442 ¹	1
10. Academic Behavior ⁴	0.007	0.156 ¹	0.018	0.115 ¹	0.097 ¹	0.089 ¹	0.225 ¹	0.31 ¹	0.228 ¹
11. Communication ⁵	-0.019	0.006	0.071 ²	0.167 ¹	0.116 ¹	0.085 ²	0.139 ¹	0.257 ¹	0.177 ¹
12. Interest ⁵	-0.036	0.018	-0.039	0.092 ¹	-0.16 ¹	0.079 ²	0.191 ¹	0.229 ¹	0.181 ¹
13. Emotional Security ⁶	0.128 ¹	0.053	0.087 ¹	0.173 ¹	0.185 ¹	-0.052	0.11 ¹	0.153 ¹	0.122 ¹
14. Involvement ⁶	0.109 ¹	0.053	-0.12 ¹	0.141 ¹	0.184 ¹	-0.044	0.135 ¹	0.218 ¹	0.127 ¹
15. Autonomy Support ⁶	-0.012	0.051	-0.050	0.095 ¹	0.137 ¹	0.066 ²	0.158 ¹	0.217 ¹	0.165 ¹
16. Structure ⁶	-0.045	0.08 ²	0.116 ¹	0.127 ¹	0.192 ¹	0.073 ²	0.129 ¹	0.184 ¹	0.151 ¹
17. Property W2 ³	0.097 ¹	0.010	0.024	0.389 ¹	0.273 ¹	0.243 ¹	0.116 ¹	0.222 ¹	0.148 ¹
18. Minor W2 ³	0.139 ¹	-0.042	0.096 ¹	0.328 ¹	0.419 ¹	0.224 ¹	0.186 ¹	0.249 ¹	0.203 ¹
19. Person W2 ³	0.112 ¹	0.077 ²	-0.001	0.223 ¹	0.209 ¹	0.36 ¹	0.089 ²	0.127 ¹	0.128 ¹

¹ Correlation is significant at the 0.01 level (2-tailed); ² Correlation is significant at the 0.05 level (2-tailed); ³ Self Reported Delinquency; ⁴ School Engagement; ⁵ Perceived Monitoring; ⁶ Perceived Support

	10	11	12	13	14	15	16	17	18	19
1. Age										
2. Cognitive Abilities										
3. Gender										
4. Prop. W1 ³										
5. Minor W1 ³										
6. Per. W1 ³										
7. Emotional Engagement ⁴										
8. Cognitive Engagement ⁴										
9. School relationship ⁴										
10. Academic Behavior ⁴	1									
11. Communication ⁵	0.039	1								
12. Interest ⁵	0.136 ¹	0.444 ¹	1							
13. Emotional Security ⁶	0.109 ¹	0.258 ¹	0.347 ¹	1						
14. Involvement ⁶	0.118 ¹	0.276 ¹	0.43 ¹	0.625 ¹	1					
15. Autonomy Support ⁶	0.146 ¹	0.188 ¹	0.316 ¹	0.492 ¹	0.507 ¹	1				
16. Structure ⁶	0.137 ¹	0.241 ¹	0.353 ¹	0.571 ¹	0.615 ¹	0.514 ¹	1			
17. Property W2 ³	-0.059	0.083 ²	-0.065	0.113 ¹	0.126 ¹	0.087 ²	0.121 ¹	1		
18. Minor W2 ³	0.085 ²	-0.058	0.083 ²	0.133 ¹	0.176 ¹	0.108 ¹	0.109 ¹	0.519 ¹	1	
19. Person W2 ³	-0.038	-0.010	0.030	0.021	-0.019	0.031	-0.029	0.522 ¹	0.438 ¹	1

¹ Correlation is significant at the 0.01 level (2-tailed); ² Correlation is significant at the 0.05 level (2-tailed); ³ Self Reported Delinquency; ⁴ School Engagement; ⁵ Perceived Monitoring; ⁶ Perceived Support

Appendix D: Standardized Direct and Indirect Effects onto Intervening Variables

Table D1.

Standardized Direct and Indirect Effects onto Overall SRD as Mediated by Intervening Variables

Predictor	Type Effects	Intervening Variables (Effect onto Overall SRD)		
		Perceived Support (-.067)	Perceived Monitoring (.157)	School Engagement (-.181) ^a
Child Age	Direct to	-.041	.017	-.02
	Indirect via	.003	.003	.004
Cognitive Abilities ^d	Direct to	--	--	.138 ^b
	Indirect via	--	--	-.025
Gender	Direct to	-.123 ^b	--	.114 ^b
	Indirect via	.008	--	-.020
Black	Direct to	--	.015	.036
	Indirect via	--	.002	-.007
Hispanic	Direct to	--	-.035	.021
	Indirect via	--	-.005	-.004
Other ^c	Direct to	--	-.071	.031
	Indirect via	--	-.011	-.006
Overall SRD ^d	Direct to	-.258 ^b	-.226 ^b	-.445 ^b
	Indirect via	.017	-.035	.081

Table D2.

Standardized Direct and Indirect Effects onto SRD: Against Person, as Mediated by Intervening Variables

Predictor	Type Effects	Intervening Variables (Effect onto SRD: Against Person)		
		Perceived Support (.012)	Perceived Monitoring (.139) ^b	School Engagement (-.141) ^b
Child Age	Direct to	-.057	.003	-.033
	Indirect via	-.001	.000	.005
Cognitive Abilities ^c	Direct to	--	--	.148 ^b
	Indirect via	--	--	-.021
Gender	Direct to	-.111 ^b	--	.145 ^b
	Indirect via	-.001	--	-.020
Black	Direct to	--	.015	.032
	Indirect via	--	.002	-.005
Hispanic	Direct to	--	-.037	.018

Other ^c	Indirect via	--	-.005	-.003
	Direct to	--	-.069	.037
SRD: Against Persons W1	Indirect via	--	-.010	-.005
	Direct to	.041	-.022	.007
SRD: Against Property W1	Indirect via	.000	-.003	-.001
	Direct to	-.129 ^b	-.091	-.118 ^b
SRD: Minor Offenses W1	Indirect via	-.002	-.013	.017
	Direct to	-.169 ^b	-.157 ^b	-.354 ^b
	Indirect via	-.002	-.022	.050

Table D3.

Standardized Indirect Effects onto SRD: Against Property, as Mediated by Intervening Variables

Predictor	Type Effects	Intervening Variables (Effect onto SRD: Against Property)		
		Perceived Support (-.080)	Perceived Monitoring (.083)	School Engagement (-.160) ^b
Child Age	Direct to	-.057	.003	-.033
	Indirect via	.005	.000	.005
Cognitive Abilities ^d	Direct to	--	--	.148 ^b
	Indirect via	--	--	-.024
Gender	Direct to	-.111 ^b	--	.145 ^b
	Indirect via	.009	--	-.023
Black	Direct to	--	.015	.032
	Indirect via	--	.001	-.005
Hispanic	Direct to	--	-.037	.018
	Indirect via	--	-.003	-.003
Other	Direct to	--	-.069	.037
	Indirect via	--	-.006	-.006
SRD: Against Persons W1	Direct to	.041	-.022	.007
	Indirect via	-.003	-.002	-.001
SRD: Against Property W1 ^d	Direct to	-.129 ^b	-.091	-.118 ^b
	Indirect via	.01	-.008	.019
SRD: Minor Offenses W1 ^d	Direct to	-.169 ^b	-.157 ^b	-.354 ^b
	Indirect via	.014	-.013	.057

Table D4.

Standardized Indirect Effects onto SRD: Minor Offenses, as Mediated by Intervening Variables

Predictor	Type Effects	Intervening Variables (Effect onto SRD: Minor Offenses)		
		Perceived Support (-.088) ^a	Perceived Monitoring (.124) ^b	School Engagement (-.209) ^b
Child Age	Direct to	-.057	.003	-.033
	Indirect via	.005	.000	.007
Cognitive Abilities ^d	Direct to	--	--	.148 ^b
	Indirect via	--	--	-.031
Gender	Direct to	-.111 ^b	--	.145 ^b
	Indirect via	.010	--	-.03
Black	Direct to	--	.015	.032
	Indirect via	--	.002	-.007
Hispanic	Direct to	--	-.037	.018
	Indirect via	--	-.005	-.004
Other ^c	Direct to	--	-.069	.037
	Indirect via	--	-.009	-.008
SRD: Against Persons W1	Direct to	.041	-.022	.007
	Indirect via	-.004	-.003	-.001
SRD: Against Property W1 ^c	Direct to	-.129 ^b	-.091	-.118 ^b
	Indirect via	.011	-.011	.025
SRD: Minor offenses W1 ^d	Direct to	-.169 ^b	-.157 ^b	-.354 ^b
	Indirect via	.015	-.019	.074

Note: ^a statistically significant direct effects $p < .05$; ^b statistically significant direct effects $p < .01$;

^c Variable with statistically significant indirect effects upon SRD: Minor offenses, $p < .05$; ^d Variable with statistically significant total indirect effect upon SRD: Minor offenses, $p < .01$

Appendix E: Comparison of Item-Level Models of the Delinquency Variables

Table E1.

Comparison of Conceptual Models and Fit Statistics

	Model A Wave 1 ^a	Model A Wave 2 ^a	Model B Wave 1 ^b	Model B Wave 2 ^b
Chi-square (df)	172.417 (24)	453.248 (24)	363.322 (24)	336.703 (24)
RMSEA	0.032	0.055	0.049	0.047
SRMR	n/a	n/a	n/a	n/a
CFI	0.935	0.825	0.851	0.873
TLI	.878	.673	.721	.762
AIC	232.417	513.248	423.322	396.703

^a Final conceptual model used in analysis

^b Alternate model considered

Figure E1.

Model A, Wave 2, With Standardized Estimates

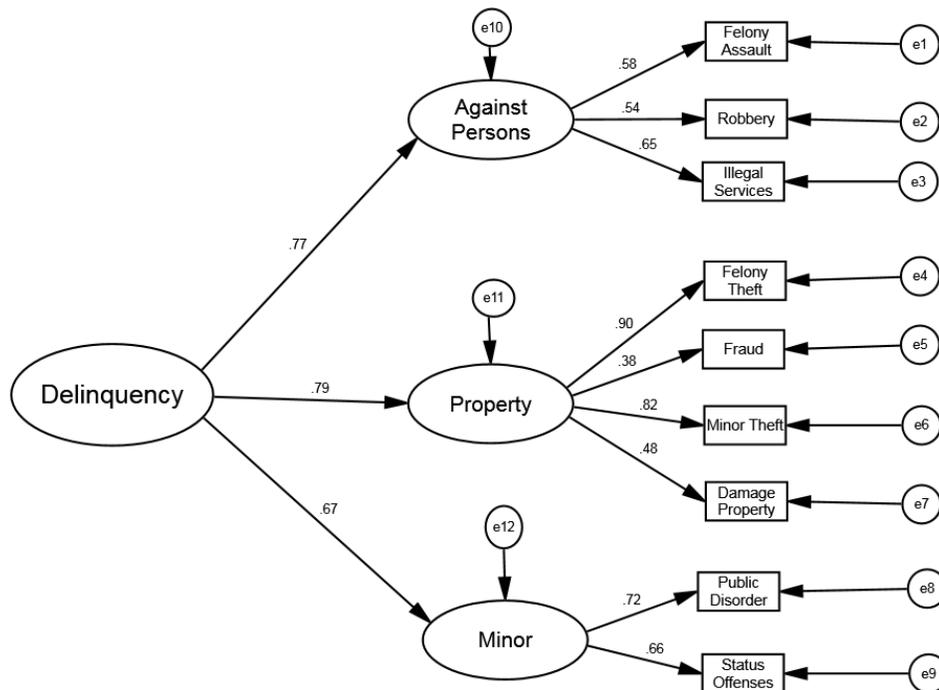
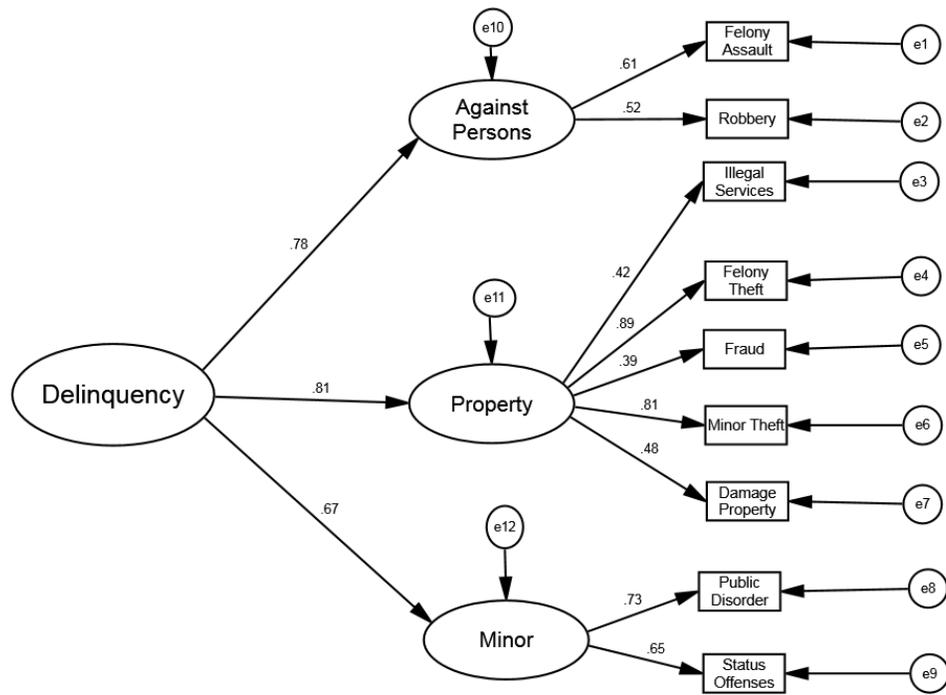


Figure E2.

Model B, Wave 2, Standardized Estimates



REFERENCES

- Abar, C. C., Jackson, K. M., & Wood, M. (2014). Reciprocal relations between perceived parental knowledge and adolescent substance use and delinquency: The moderating role of parent-teen relationship quality. *Developmental Psychology, 50*(9), 2177-2187. doi: 10.1037/a0037463.
- Administration for Children and Families, Office of Planning, Research and Evaluation (n.d.). *Children's cognitive and socioemotional development and their receipt of special educational and mental health services* (Research Brief No. 3). Washington, DC: Administration for Children and Families. Retrieved June 21st, 2013 from:
http://archive.acf.hhs.gov/programs/opre/abuse_neglect/nscaw/reports/spec_education/spec_education.html
- Afifi, T. O., & MacMillan, H. L. (2011). Resilience following child maltreatment: A review of protective factors. *The Canadian Journal of Psychiatry, 56*(5), 266- 272.
- Anderson, B. J., Holmes, M. D., & Ostresh, E. (1999). Male and female delinquents' attachments and effects of attachments on severity of self-reported delinquency. *Criminal Justice and Behavior, 26*(4), 435- 452.
doi:10.1177/0093854899026004002
- Arbuckle, J. L. (2014). Amos (Version 22.0) [Computer Program]. Chicago: SPSS.
- Barnes, G. M., Reifman, A. S., Farrell, M. P., & Dintcheff, B. A. (2000). The effects of parenting on the development of adolescent alcohol misuse: A six-wave latent

growth model. *Journal of Marriage and Family*, 62(1), 175–186.

doi:10.1111/j.1741-3737.2000.00175.x

Benzies, K., & Mychasiuk, R. (2009). Fostering family resiliency: A review of the key protective factors. *Child & Family Social Work*, 14(1), 103-114.

doi:10.1111/j.1365-2206.2008.00586.x

Bilchik, S. C. (2010). *Addressing the needs of youth known to both the child welfare and juvenile justice systems*. Williamsburg, VA: National Center for State Courts.

Retrieved from:

<http://cdm16501.contentdm.oclc.org/cdm/ref/collection/famct/id/305>

Bond, L., Butler, H., Thomas, L., Carlin, J. B., Glover, S., Bowes, G., & Patton, G. (2007).

Social and school connectedness in early secondary school as predictors of late teenage substance use, mental health and academic outcomes. *Journal of Adolescent Health*, 40(4), 357.e9– 357.e18. doi:10.1016/j.jadohealth.2006.10.013

doi:10.1016/j.jadohealth.2006.10.013

Brody, G. H., & Flor, D. L. (1998). Maternal resources, parenting practices, and child competence in rural, single-parent African American families. *Child Development*,

69(3), 803–816. doi:10.1111/j.1467-8624.1998.tb06244.x.

Brown, J., Cohen, P., Johnson, J. G., & Salzinger, S. (1998) Longitudinal analysis of risk factors for child maltreatment: Findings of a 17-year prospective study of officially recorded and self-reported child abuse and neglect. *Child Abuse & Neglect*, 22(11), 1065–1078, 1998.

- Brown, E. J., & Kolko, D. J. (1999). Child victims' attributions about being physically abused: An examination of factors associated with symptom severity. *Journal of Abnormal Child Psychology*, 27(4), 311–322.
- Campbell, K. A., Cook, L. J., LaFleur, B. J., & Keenan, H. T. (2010). Household, Family, and Child Risk Factors After an Investigation for Suspected Child Maltreatment: A Missed Opportunity for Prevention. *Archives of Pediatrics and Adolescent Medicine*, 164(10), 943-949. doi:10.1001/archpediatrics.2010.166
- Casanueva, C., Smith, K., Dolan, M., & Ringeisen, H. (2011). *NSCAW II Baseline Report: Maltreatment*. OPRE Report #2011-27c, Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.
- Catterall, J. S. (1998). Risk and resilience in student transitions to high school. *American Journal of Education*, 106(2), 302–333.
- Cavanagh, S. E. (2008). Family structure history and adolescent adjustment. *Journal of Family Issues*, 29(7), 994-980. doi:10.1177/0192513X07311232
- Cavendish, W., Nielsen, A. L., & Montague, M. (2012). Parent attachment, school commitment, and problem behavior trajectories of diverse adolescents [Special issue]. *Journal of Adolescence*, 35(6), 1629-1639.
doi:10.1016/j.adolescence.2012.08.001
- Chuang, E., & Wells, R. (2010). The role of inter-agency collaboration in facilitating receipt of behavioral health services for youth involved with child welfare and

juvenile justice. *Children and Youth Service Review*, 32(12), 1814-1822.

doi:10.1016/j.chilyouth.2010.08.002

Cicchetti, D., & Valetino, K. (2006). An ecological-transactional perspective on child maltreatment: Failure of the average expectable environment and its influence on child development. In D. Cicchetti & D.J. Cohen (Eds.) *Developmental Psychopathology, Volume Three: Risk, Disorder and Adaptation, 2nd edition* (pp. 129-201). Hoboken, NJ: John Wiley & Sons.

Colman, R., Kim, D. H., Mitchell-Herzfeld, S., & Shady, T. A. (2008). *Long-term consequences of delinquency: Child maltreatment and crime in early adulthood*.

Retrieved from the National Criminal Justice Reference Service, NIJ grant

2006IJCK0014, website: <https://www.ncjrs.gov/pdffiles1/nij/grants/226577.pdf>

Conduct Problems Prevention Research Group (CPPRG). (1995). *Supervision Questionnaire – Child (Grade 4+)*. Retrieved from:

<http://fasttrackproject.org/techrept/s/sch/>

Connell, C. M., Bergeron, N., Katz, K. H., Saunders, L., & Tebes, J. K. (2007). Re-referral to child protective services: The influence of child, family, and case characteristics on risk status. *Child Abuse & Neglect*, 31(5), 573- 588.

doi:10.1016/j.chiabu.2006.12.004

Curran, P. J., West, S. G., & Finch, J. F. (1996). The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis.

Psychological Methods, 1, 16-29.

- Dishion, T. J., & McMahon, R. J. (1998). Parental monitoring and the prevention of child and adolescent problem behaviors: A conceptual and empirical formulation. *Clinical Child and Family Psychology Review, 1*(1), 61- 75.
- Dolan, M., Smith, K., Casanueva, C. & Ringeisen, H. (2011). *NSCAW II Baseline Report: Introduction to NSCAW II* (OPRE Report No. 2011-27a). Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.
- Drake, B., Jonson-Reid, M., Way, I., & Chung, S. (2003). Substantiation and recidivism. *Child Maltreatment, 8*(4), 248-260. doi:10.1177/1077559503258930
- Durlak, J. A. (1998). Common risk and protective factors in successful prevention programs. *American Journal of Orthopsychiatry, 68*(4), 512–520.
- Eaton, N. R., Krueger, R. F., Johnson, W., McGue, M., & Iacono, W. G. (2009). Parental monitoring, personality and delinquency: Further support for a reconceptualization of monitoring. *Journal of Research in Personality, 43*(1), 49-59.
doi:10.1016/j.jrp.2008.10.006
- Enders, C. K. (2010). *Applied missing data analysis*. NY, NY: Guilford Press.
- Eyberg, S. M., Nelson, M. M., & Boggs, S. R. (2008). Evidence-based psychosocial treatments for children and adolescents with disruptive behavior. *Journal of Clinical Child & Adolescent Psychology, 37*(1), 215-237.
- Fergus, S., & Zimmerman, M. A. (2005). Adolescent resilience: A framework for understanding healthy development in the face of risk. *Annual Review of Public Health, 26*, 399–419. doi:10.1146/annurev.publhealth.26.021304.144357

- Fletcher, A. C., Steinberg, L., & Williams-Wheeler, M. (2004). Parental influences on adolescent problem behavior: Revisiting Stattin and Kerr. *Child Development*, 75(3), 781–796.
- Flouri, E., Midouhas, E., Joshi, H., & Tzavidis, N. (2014). Emotional and behavioural resilience to multiple risk exposure in early life: the role of parenting [Supplemental material]. *European Child & Adolescent Psychiatry*. doi:10.1007/s00787-014-0619-7
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review Of Educational Research*, 74(1), 59-109. doi: 10.3102/00346543074001059
- Freidenfelt Liljberg, J., Eklund, J. M., Väfors Fritz, M., & af Klintberg, B. (2011). Poor school bonding and delinquency over time: Bidirectional effects and sex difference. *Journal of Adolescence*, 34(1), 1-9. doi:10.1016/j.adolescence.2010.03.008
- Garnezy, N. (1993). Children in poverty: Resilience despite risk. *Psychiatry*, 56(1), 127–136.
- George, T. P. (2012). *School engagement and juvenile offending among maltreated youth who vary by race/ethnicity, gender, and type of child maltreatment*. Olympia, WA: Administrative Office of the Courts.
- Gest, S. D., Reed, M. J., & Masten, A. S. (1999). Measuring developmental changes in exposure to adversity: A life chart and rating scale approach. *Development and Psychopathology*, 11(1), 171-192.

- Griner Hill, L., & Werner, N. E. (2006). Affiliative motivation, school attachment and aggression in school. *Psychology in the Schools, 43*(2), 231- 246.
doi:10.1002/pits.20140
- Grogan-Kaylor, A., Ruffalo, M. C., Ortega, R. M., & Clarke, J. (2008). Behaviors of youth involved in the Child Protective Services. *Child Abuse & Neglect, 32*(1), 35-49. doi:10.1016/j.chiabu.2007.09.004
- Hart, C. O., & Mueller, C. E. (2013). School delinquency and social bond factors: Exploring gendered differences among a national sample of 10th graders. *Psychology in the Schools, 50*(1), 116-133. doi:10.1002/pits.21662
- Haskett, E., Nears, K., Ward, C. S., & McPherson, A. V. (2006). Diversity in adjustment of maltreated children: Factors associated with resilient functioning. *Clinical Psychology Review, 26*(6), 796-812. doi:10.1016/j.cpr.2006.03.005
- Healey, A., Knapp, M., & Farrington, D. P. (2004). Adult labour market implications of antisocial behaviour in childhood and adolescence: Findings from a UK longitudinal study. *Applied Economics, 36*(2), 93–105.
doi:10.1080/0003684042000174001
- Henry, C. S., Plunkett, S. W., & Sands, T. (2011). Family structure, parental involvement, and academic motivation in Latino adolescents. *Journal of Divorce and Remarriage, 52*, 370–390. doi:10.1080/10502556.2011.592414.
- Herrenkohl, T. I., Hill, K. G., Chung, I., Guo, J., Abott, R., & Hawkins, J. D. (2003). Protective factors against serious violent behavior in adolescence: A prospective

study of aggressive children. *Social Work Research*, 27(3), 179-191.

doi:10.1093/swr/27.3.179

Hirschfield, P. J. (2004). *Impact of juvenile justice involvement on educational outcomes*.

(Doctoral dissertation). Retrieved from the National Criminal Justice Reference

Service: <https://www.ncjrs.gov/pdffiles1/nij/grants/206047.pdf>

Hirschfield, P. J., & Gasper, J. (2011). The relationship between school engagement and

delinquency in late childhood and early adolescence. *Journal of Youth &*

Adolescence, 40(1), 3-22. doi:10.1007/s10964-010-9579-5

Hoeve, M., Dubas, J. S., Gerris, J. R. M., van der Laan, P. H., & Smeenk, W. (2011).

Maternal and paternal parenting styles: Unique and combined links to adolescent and early adult delinquency. *Journal of Adolescence*, 34(5), 813–827.

doi:10.1016/j.adolescence.2011.02.004

Hoeve, M., Stams, G. J. J. M., van der Put, C. E., Dubas, J. S., van der Laan, P. H., &

Gerris, J. R. M. (2012) A meta-analysis of attachment to parents and delinquency.

Journal of Abnormal Child Psychology, 40(5), 771–785. doi: 10.1007/s10802-011-9608-1

Holman, B., & Ziedenberg, J. (2006). *The dangers of detention: The impact of*

incarcerating youth in detention and other secure facilities. Washington, DC:

Justice Policy Institute. Retrieved from:

<http://www.justicepolicy.org/research/1978>

- Houshyar, S., & Kaufman, J. (2006). Resiliency in maltreated children. In S. Goldstein and R.B. Brooks (Eds.) *Handbook of Resilience in Children* (pp. 181-200). NY, NY: Springer.
- Howard, S., Dryden, J., & Johnson, B. (1999). Childhood resilience: Review and critique of literature. *Oxford Review of Education*, 25(3), 307-323.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55.
doi:10.1080/10705519909540118
- Huebner, A. J., & Betts, S. C. (2002). Exploring the utility of Social Control Theory for youth development: Issues of attachment, involvement and gender. *Youth & Society*, 34(2), 123-145. doi: 10.1177/004411802237860
- Hussey, J. M., Chang, J. J., & Kotch, J. B. (2006). Child maltreatment in the United States: Prevalence, risk factors, and adolescent health consequences. *Pediatrics*, 118(3), 933 -942. doi: 10.1542/peds.2005-2452
- Hussey, J. M., Marshall, J. M., English, D. J., Dawes Knight, E., Laud, A. S., Dubowitz, H., & Kotch, J. B. (2005) Defining maltreatment according to substantiation: Distinction without a difference? *Child Abuse & Neglect*, 29(5) 479–492.
doi:10.1016/j.chiabu.2003.12.005
- Jonson-Reid, M. (2002). Exploring the relationship between child welfare intervention and juvenile corrections involvement. *American Journal of Orthopsychiatry*, 72(4), 559– 576. doi:10.3037//0002-9432.72.4.559

- Kiesner, J., Dishion, T. J., Poulin, F., & Pastore, M. (2009). Temporal dynamics linking aspects of parent monitoring with early adolescent antisocial behavior. *Social development, 18*(4), 765–784. doi:10.1111/j.1467-9507.2008.00525.x
- Keith, T. Z. (2006). *Multiple regression and beyond*. Boston, MA: Allyn & Bacon.
- Kline, R. B. (2011). *Principles and practice of structural equation modeling, 3rd edition*. NY, NY: Guilford Press.
- Kristjánsson, A. L., & Sigfúsdóttir, I. D. (2009). The role of parental support, parental monitoring, and time spent with parents in adolescent academic achievement in Iceland: A structural model of gender differences. *Scandinavian Journal of Educational Research, 53*(5), 481–496. doi:10.1080/00313830903180786
- Lahey, B. B.; Van Hulle, C. A., D'Onofrio, B. M., Rodgers, J. L., & Waldman, I. D. (2008). Is parental knowledge of their adolescent offspring's whereabouts and peer associations spuriously associated with offspring delinquency? *Journal of Abnormal Child Psychology, 36*(6), 807-823. doi: 10.1007/s10802-008 9214-z
- Lee, V. E., Winfield, L. F., & Wilson, T. C. (1991). Academic behaviors among high-achieving African-American students. *Education and Urban Society, 24*(1), 65-86. doi:10.1177/0013124591024001006
- Luthar, S. S., & Zigler, E. (1991). Vulnerability and competence: A review of research on resilience in childhood. *American Journal of Orthopsychiatry, 61*(1), 6- 22.
- Lynam, D., Moffitt, T., & Stouthamer-Loeber, M. (1993). Explaining the relation between IQ and delinquency: Class, race, test motivation, school failure, or self-control? *Journal of Abnormal Psychology, 102*(2), 187-196.

- Mallett, C. A. (2012). The school success program: Improving maltreated children's academic and school-related outcomes. *Children & Schools, 34*(1), 13-26.
doi:10.1093/cs/cdr004
- Mandleco, B. L., & Peery, J. C. (2000). An organizational framework for conceptualizing resilience in children. *Journal of Child and Adolescent Psychiatric Nursing, 13*(3), 99-111.
- Marcus, R. F., & Sanders-Reio, J. (2001). The influence of attachment on school completion. *School Psychology Quarterly, 16*(4), 427-444.
- Martinez, C. R., DeGarmo, D. S., & Eddy, J. M. (2004). Promoting Academic Success Among Latino Youths. *Hispanic Journal of Behavioral Sciences, 26*(2), 128-151.
doi:10.1177/0739986304264573
- Martins, S. S., Storr, C. L., Alexandre, P. K., & Chilcoat, H. D. (2008). Adolescent ecstasy and other drug use in the National Survey of Parents and Youth: The role of sensation-seeking, parental monitoring and peer's drug use. *Addictive Behaviors, 33*(7), 919-933. doi:10.1016/j.addbeh.2008.02.010
- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist, 56*(3), 227-238.
- Masten, A. S., Best, K. M., & Gramezy, N. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology, 2*(1), 425-444.
- Masten, A. S., & Cicchetti, D. (2010). Developmental cascades [Editorial]. *Development and Psychopathology, 22*(3), 491-495. doi:10.1017/S0954579410000222

- Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American Psychologist, 53*(2), 205–220.
- Masten, A. S., DesJardins, C. D., McCormick, C. M., Kuo, S. I., & Long, J. D. (2010). The significance of childhood competence and problems for adult success in work: A developmental cascade analysis. *Development and Psychopathology, 22*(3), 679–694. doi:10.1017/S0954579410000362
- Masten, A. S., Hubbard, J. J., Gest, S. D., Tellegen, A., Garmezy, N., & Ramirez, M. L. (1999). Competence in the context of adversity: Pathways to resilience and maladaptation from childhood to late adolescence. *Development and Psychopathology, 11*(1), 143–169
- Masten, A. S., & Obradović, J. (2006) Competence and Resilience in Development. *Annals of the New York Academy of Sciences, 1094*, 13–27.
doi:10.1196/annals.1376.003
- Masten, A. S., & Powell, J. L. (2003). A resilience framework for research, policy, and practice. In S. S. Luthar (Ed.) *Resilience and Vulnerability: Adaptation in the Context of Childhood Adversities* (pp. 1-25). Cambridge, England: Cambridge University Press
- Masten, A. S., Roisman, G. I., Long, J. D., Burt, K. B., Obradović, J., Riley, J. R., ... Tellegen, A. (2005). Developmental cascades: Linking academic achievement, externalizing and internalizing symptoms over 20 years. *Developmental Psychology, 41*(5), 733–746. doi:10.1037/0012-1649.41.5.733

- Masten, A. S., & Tellegen, A. (2012). Resilience in developmental psychopathology: Contributions of the Project Competence Longitudinal Study. *Development and Psychopathology, 24*(2), 345–361. doi:10.1017/S095457941200003X
- McArdle, J. J., & Kadlec, K. M. (2013). Structural equation models. In T. D. Little (Ed.) *The Oxford Handbook of Quantitative Methods, Vol. 2: Statistical Analysis*, (pp. 295- 337). NY, NY: Oxford University Press.
- Minnard, C. V. (2002). A Strong Building: Foundation of Protective Factors in Schools. *Children and Schools, 24*(4), 233-246. doi:10.1093/cs/24.4.233
- Mounts, N. S. (2002). Parental management of adolescent peer relationships in context: The role of parenting style. *Journal of Family Psychology, 16*(1), 58–69. doi:10.1037/0893-3200.16.1.58
- National Data Archive on Child Abuse and Neglect (2012). *National Survey of Child and Adolescent Well-Being, Restricted release* (NSCAW II) [Data file, appendices, data file and users manual and code books]. Ithaca, NY: Cornell University
- Obradovic', J., Burt, K. B., & Masten, A. S. (2006). Pathways of adaptation from adolescence to young adulthood: Antecedents and correlates. *Annals of the New York Academy of Sciences, 1094*, 340–344. doi:10.1196/annals.1376.046
- Office of Juvenile Justice and Delinquency Prevention (2013). *OJJDP Statistical Briefing Book*. Pittsburgh, PA: National Center for Juvenile Justice. Retrieved from: <http://www.ojjdp.gov/ojstatbb/court/qa06201.asp?qaDate=2010>
- Pallant, J. (2007). *SPSS survival manual: A step-by-step guide to data analysis using SPSS for Windows, 3rd edition*. NY, NY: McGraw-Hill

- Parker, J. S., & Benson, M. J. (2004). Parent-adolescent relations and adolescent functioning: Self-esteem, substance abuse, and delinquency. *Adolescence*, 39(155), 519- 530.
- Peguero, A. A., Popp, A. M., Latimore, T. L., Shekarkhar, A., & Koo, D. J. (2011). Social Control Theory and school misbehavior: Examining the role of ethnicity. *Youth Violence and Juvenile Justice*, 9(3), 259-27. doi:10.1177/1541204010389197
- Perkins, D., & Jones, K. (2004). Risk behaviors and resiliency within physically abused adolescents. *Child Abuse and Neglect*, 28(5), 547–563.
doi:10.1016/j.chiabu.2003.12.001
- Powers, J. D. (2010). Ecological risk and resilience perspective: A theoretical framework supporting evidence-based practice in schools. *Journal of Evidence-Based Social Work*, 7(5), 443-451. doi:10.1080/15433714.2010.509216
- Preacher, K. J., & Coffman, D. L. (2006). Computing power and minimum sample size for RMSEA [Computer software]. Available from
<http://quantpsy.org/rmse/rmse.htm>
- Puzzanchera, C., & Kang, W. (2013). *Easy Access to FBI Arrest Statistics 1994-2010*. Pittsburgh, PA Retrieved from: <http://www.ojjdp.gov/ojstatbb/ezaucr/>
- Reivich, K., & Gillham, J. (2010, March/ April). Building resilience in youth: The Penn Resiliency Program. *NASP Communiqué*, 38(6) pp. 1, 17-19.
- Repetti, R. L., Taylor, S. E., & Seeman, T. E. (2002). Risky families: Family social environments and the mental and physical health of offspring. *Psychological Bulletin*, 128(2), 330-366. doi:10.1037//0033-2909.128.2.330

- Research Triangle Institute International (2008). *Adolescence involved with child welfare: A transition into adulthood*. NC: RTI International. Retrieved:
http://www.acf.hhs.gov/sites/default/files/opre/adolescents_involved.pdf
- Research Triangle Institute International (2010). *Children involved with child welfare: A transition to adolescence*. NC: RTI International. Retrieved:
http://www.acf.hhs.gov/sites/default/files/opre/wave5_adolescence_report_final.pdf
- Rutter, M. (1987). Psychological resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57(3), 316–331.
- Rutter, M. (2006). Implications of resilience concepts for scientific understanding. *Annals of the New York Academy of Sciences*, 1094, 1-12. doi:10.1196/annals.1376.002
- Sampson, R. J., & Laub, J. H. (2003). Life-course desisters? Trajectories of crime among delinquent boys followed to age 70. *Criminology*, 40(3), 555- 592.
- Schafer, J. L., & Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, 7(2), 147-177.
- Shader, M. (2003). *Risk factors for delinquency: An overview*. Office of Juvenile Justice and Delinquency Prevention. Retrieved from:
<https://www.ncjrs.gov/pdffiles1/ojjdp/frd030127.pdf>
- Sheridan, S. M., Eagle, J. W., & Dowd, S. E. (2006). Families as contexts for children's adaptation. In S. Goldstein and R.B. Brooks (Eds.) *Handbook of Resilience in Children* (pp. 181-200). NY, NY: Springer.

- Smith, C. A., Park, A., Ireland, T. O., Elwyn, L., & Thornberry, T. P. (2013) Long-term outcomes of young adults exposed to maltreatment: The role of educational experiences in promoting resilience to crime and violence in early adulthood. *Journal of Interpersonal Violence, 21*(1), 121-156.
doi:10.1177/0886260512448845
- Sousa, C., Herrenkohl, T. I., Moylan, C. A., Tajima, E. A., Klika, J. B., Herrenkohl, R. C. & Russo, M. J. (2011). Longitudinal study on the effects of child abuse and children's exposure to domestic violence, parent-child attachments, and antisocial behavior in adolescence. *Journal of Interpersonal Violence, 26*(1), 111-136.
doi:10.1177/0886260510362883
- Stattin, H., & Kerr, M. (2000). Parental monitoring: a reinterpretation. *Child Development, 71*(4), 1072–1085. doi: 10.1111/1467-8624.00210
- Teague, R., Mazerolle, P., Legosz, M., & Sanderson, J. (2008). Linking childhood exposure to physical abuse and adult offending: Examining mediating factors and gendered relationships. *Justice Quarterly, 25*(2), 313-348.
doi:10.1080/07418820802024689
- Thornberry, T. P., Henry, K. L., Ireland, T. O., & Smith, C. A. (2010). The causal impact of childhood-limited maltreatment and adolescent maltreatment on early adult adjustment. *Journal of Adolescent Health, 46*(4), 359-365.
doi:10.1016/j.jadohealth.2009.09.011

- Ullman, J. B. (2007) Structural Equation Modeling. In B.G. Tabachnik & L.S. Fidell (Eds.) *Using Multivariate Statistics, Fifth Edition*, (pp. 676- 781). Boston, MA: Allyn & Bacon.
- Urduan, T., & Schoenfelder, E. (2006). Classroom effects on student motivation: Goal structures, social relationships, and competence beliefs. *Journal of School Psychology, 44*(5), 331-349. doi:10.1016/j.jsp.2006.04.003
- U.S. Department of Education, Office of Special Education and Rehabilitative Services, Office of Special Education Programs. (2012). *31st Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act, 2009*. Washington, D.C.: US. Retrieved from:
<http://www2.ed.gov/about/reports/annual/osep/2009/parts-b-c/31st-idea-arc.pdf>
- Vrtička, P., & Vuilleumier, P. (2012). Neuroscience of human social interactions and adult attachment style. *Frontiers in Human Neuroscience, 6*, 1-17.
DOI:10.3389/fnhum.2012.00212
- Wang, B., Stanton, B., Li, X., Cottrell, L., Deveaux, L., & Kaljee, L. (2013). The influence of parental monitoring and parent-adolescent communication on Bahamian adolescent risk involvement: A three-year longitudinal examination. *Social Science & Medicine, 97*, 161–169. doi:10.1016/j.socscimed.2013.08.013.
- Werner, E. (2005). What can we learn about resilience from large-scale longitudinal studies. In S. Goldstein, & R. B. Brooks (Eds.), *Handbook of Resilience in Children* (pp. 91-105). New York, NY: Springer.

- West, S. G., Finch, J. F., & Curran, P. J. (1995). Structural equation models with nonnormal variables: Problems and remedies. In R. H. Hoyle (Ed.), *Structural Equation Modeling: Concepts, Issues and Applications* (pp. 56-75). Thousand Oaks, CA: Sage Publications.
- Wiig, J., Widom, C. S., & Tuell, J. A. (2003). *Understanding child maltreatment and juvenile delinquency: From research to effective program, practice, and systemic solutions*. Washington, DC: Child Welfare League of America Press. Retrieved from: <http://www.cwla.org/programs/juvenilejustice/ucmjd.htm>
- Williams, L. R., & Anthony, E. K. (2013). A model of positive family and peer relationships on adolescent functioning. [Published online]. *Journal of Child and Family Studies*, 1-10. doi:10.1007/s10826-013-9876-1
- Zeanah, C. H., & Smyke, A. T. (2011). Attachment disorders. In C.H. Zeanah, Jr. (Ed.) *Handbook of Infant Mental Health, Third Edition* (pp. 421-437). NY: Guilford Press.
- Zimmerman, M. A., Stoddard, S. A., Eisman, A. B., Caldwell, C. H., Aiyer, S. A., & Miller, A. (2013). Adolescent resilience: Promotive factors that Inform prevention. *Child Development Perspectives*, 7(4), 215–220. doi: 10.1111/cdep.12042
- Zingraff, M. T., Leiter, J., Johnsen, M. C., & Myers, K. A. (1994). The mediating effect of good school performance on the maltreatment-delinquency relationship. *Journal of Research in Crime and Delinquency* 31(1) 62-91.
doi:10.1177/0022427894031001003