The Role of Institutions in the Transition to Adulthood
and
Their Impact on Pathways to Adulthood and Adult Criminal Outcomes

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Abstract

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In today's social and economic context in the U.S., many individuals experience an extended transition to adulthood period during which they are able to delay adopting adult social roles and responsibilities, such as initiating careers, making long-term commitments to a romantic partner, and starting a family. However, many individuals do not have the resources or supports that would enable them to delay adopting one or more of those roles, experiencing an accelerated transition to adulthood. An accelerated transition can pose more challenges in the form of economic or housing hardships and may hinder the ability of individuals to accumulate additional and necessary human capital. This dissertation applies an institutional lens to the study of the transition to adulthood in order to help illuminate the role of social structures in shaping individual lives during childhood, adolescence, and the transition to adulthood, and consists of three analyses. Chapter 2 examines the experiences of a general diverse sample of urban youth, and chapters 3 and 4 focus on foster youth aging out of care. Chapter 2 considers whether the normative socializing institutions of family and school play a role in shaping the transition to adulthood, whether extended or accelerated, and whether the individual's bond to these institutions mediates the relationship. Although the findings indicate that the prosocial socialization process operating in the family and school does not play a role in explaining

differences in who experiences an extended or accelerated adulthood, other characteristics of the family play an important role, such as parent school expectations, a family disruption, and immigrant status. Chapter 3 examines the impact of legal system involvement on foster youth in preparation for the transition to adulthood on criminal activities during the transition to adulthood. The findings indicate that legal system involvement is associated with higher levels of criminal activities at age 21. In addition, legal system involvement initiates a process of social exclusion where youth are less likely to graduate from high school by age 19, and this has an impact on their employment status at age 21. Chapter 4 investigates the impact on arrests of extending foster care support during the transition to adulthood; the findings indicate that extended support in the first year after turning 18 reduces the risk of arrest, but this effect declines after the first year. Together, this dissertation research finds that during childhood and adolescence, as well as during the transition to adulthood, institutions play an important role in shaping the transition to adulthood. Improving institutional structures to better support individuals through the transition period, especially for those who experience an accelerated adulthood, can help more individuals successfully transition into adulthood. For example, increasing the high school completion rate of foster youth with legal histories and providing extended care support to former foster youth can reduce the likelihood of social exclusion for these youths.

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DEDICATION

To my father whose love of books inspires the academic in me,
and to my mother whose enormous heart inspires the social worker in me.

CHAPTER 1: INTRODUCTION

Background and Significance

In today's social and economic context in the U.S., many individuals experience an extended transition to adulthood period during which they are able to delay adopting adult social roles and responsibilities, such as initiating careers, making long-term commitments to a romantic partner, and starting a family. This extended transition period allows individuals time to acquire additional and necessary capital (e.g., human, social, cultural and identity) while exploring multiple possibilities before making long-term commitments to adulthood institutions, decisions that will have a lasting impact on their lives. However, many individuals experience an accelerated transition to adulthood, which can pose more challenges in the form of economic or housing hardships and may hinder the ability of individuals to accumulate additional and necessary human capital (Bynner, 2005; Lee, In Press; Oxford et al., 2005). Extant studies indicate that racial minority youth and those who are poor or from a lower socioeconomic status are more likely to experience an accelerated adulthood (Berzin & De Marco, 2010; Bynner, 2005; Cohen, Kasen, Chen, Hartmark, & Gordon, 2003; Macmillan & Copher, 2005; Schoen, Landale, Daniels, & Cheng, 2009).

Individuals who experience an accelerated adulthood receive inadequate supports during the transition to adulthood and are most likely to have trouble transitioning into adulthood. Men who struggle in their transition into adulthood are characterized by long-term spells of unemployment and high rates of involvement with the legal system, while women who have inadequate support during the transition to adulthood may become young mothers living in poverty by age 25 (Wald, 2005). The most vulnerable youth during the transition to adulthood are arguably those who are involved in public institutions during childhood and adolescence,

such as children and youth in the foster care and juvenile justice systems, or those who have become disconnected from most or all systems such as runaway and homeless youth (Osgood, Foster, Flanagan, & Ruth, 2005). These youths, who are disproportionately boys, poor, and youth of color (Foster, Flanagan, Osgood, & Ruth, 2005), are of particular interest to Social Welfare practitioners not only because of their vulnerability, but also due to their interaction with public systems and the impact of these systems on their lives. These youths typically come to the attention of public systems because their families and/or schools have provided inadequate socialization and support, such as the foster care youth who have been maltreated by their families, or because they have special needs that require additional support, e.g., youth with learning disabilities or mental health problems (Osgood et al., 2005).

Due to the extent of the challenges these youth face, and for some, the failures of the people and institutions that have been tasked with preparing these youths for adulthood, many of these vulnerable youth are inadequately prepared to make the transition to adulthood. Social workers play an important role in providing services for these youths, but research on how institutional practices succeed or fail to serve these vulnerable youth as they transition into adulthood is limited (Foster et al., 2005). Key social institutions exert a slow-moving force during childhood and adolescence that is often overlooked (Pierson, 2004). The present study applies an institutional lens to the study of the transition to adulthood in order to help illuminate the role of social structures in shaping individual lives during childhood, adolescence, and the transition to adulthood. This study primarily focuses on the socializing institutions of family, school, and the child welfare system during childhood and adolescence, and the social institutions of education, the labor market, parenthood, and the legal system during the transition to adulthood. Drawing from neo-institutionalism, a theoretical body of work that seeks to

understand institutions and how they affect society, institutions are defined as the "rules of the game" (North, 1990, p. 3) that channel social choices by shaping the incentives, constraints and alternatives for individuals (Hoffman & Ventresca, 1999). In other words, institutions influence social choices by defining choice options available to individuals (North, 1990). For example, each family plays an important role in providing opportunities for their children, and encourages involvement in various opportunities through rewards and punishments.

The field of Social Welfare would benefit from a better understanding of how institutional structures shape lives during the transition to adulthood, particularly for vulnerable youth. Insights from this understanding can inform points of interventions that may have a systematic impact by contributing to more socially just social structures such as through modified policies and practices in the child welfare and juvenile justice systems. Systematic intervention through improved institutional structures during the transition to adulthood has the potential to produce significant benefits. For instance, during the transition period, individuals are tasked with making an extensive set of role transitions, allowing them the opportunity to move into new contexts throughout multiple domains in their lives (Masten et al., 2004; Schulenberg, Sameroff, & Cicchetti, 2004; Tanner, 2006). This complete set of role and context transitions can be stressful and challenging, but with better and more informed interventions, Social Welfare researchers and practitioners can provide opportunities for many to leave dysfunctional contexts or move into contexts that may better encourage positive outcomes (Schulenberg, Bryant, & O'Malley, 2004). For example, the field of Social Welfare can take advantage of related work by criminologists who have documented that attachments to various institutions of adulthood, such as employment, marriage, and parenthood, can positively alter the trajectories of those with histories of delinquency (Crutchfield & Pitchford, 1997; Kreager,

Matsueda, &Erosheva, 2010; Laub & Sampson, 2003; Sampson & Laub, 1990). Helping

individuals successfully establish themselves within a set of adult institutions may alter lives and

increase the likelihood of positive adult outcomes.

Institutions and the Transition to Adulthood

The study of the transition to adulthood reveals both changes in social contexts and in the

role that institutions play in shaping the life course. The shift in the U.S. labor market from a

manufacturing to service-oriented base has resulted in increased incentives to pursue

postsecondary education, since jobs available to high school graduates pay less, are less stable,

and provide fewer growth opportunities than jobs do within a manufacturing economy (Fussell &

Furstenberg Jr., 2005). In addition, since the mid-1970s, women have had more opportunities

within the labor market and to pursue postsecondary education (Stanger-Ross, Collins, & Stern,

2005). The institution of the labor market has thus increased the incentive to seek postsecondary

educational attainment and delay initiating a long-term career. These changes in the labor

market and education, coupled with rising housing costs, create the incentive for young adults to

delay marriage and childbearing until they become more financially established (Stanger-Ross et

al., 2005). Previously coupled transitions, such as the school to work transition, leaving the

parental home to marriage, and from marriage into parenthood, are now decoupled, termed

destructuralization (Côté, 2000). Within this context of destructuralization, those who experience

an extended transition to adulthood face increased options and possibilities (Arnett, 2006).

However, destructuralization in the transition to adulthood has led to uneven institutional

support of the transition to adulthood across the population (Settersten, 2005). Material and other

supports that enable some to experience an extended transition is provided through families

and/or postsecondary educational institutions (Arnett, 2006; Brock, 2010; Schoeni & Ross, 2005;

The William T. Grant Foundation Commission on Work, 1988). Individuals who do not have families to offer support and/or cannot afford to pursue postsecondary education, such as many foster youth who age out of care, may perceive few alternatives to the immediate adoption of adult social roles, but there are disadvantages associated with an accelerated transition. For example, entering the full-time labor force and parenthood early in the transition to adulthood period limits opportunities for the development of human capital (Berzin & De Marco, 2010; Guldi, Page, & Stevens, 2007; Macmillan & Copher, 2005), which in turn is related to limited acquisition of social and cultural capital (Furstenberg, 2006). Thus, developing institutional structures that will ensure that all youth receive support and guidance during their transition to adulthood may reduce the risks during the transition period, especially for those with limited resources, while increasing the likelihood of positive attachments to adult institutions.

Thus, in this dissertation I seek to explore a broad question: How do institutions influence the transition to adulthood? Chapter 2 considers whether the normative socializing institutions of family and school play a role in shaping the transition to adulthood (whether extended or accelerated) and whether the individual's bond to these institutions mediates the relationship. Whereas chapter 2 examines the experiences of a general diverse sample of urban youth, chapters 3 and 4 focus on foster youth aging out of care. Chapter 3 examines the impact of legal system intervention on youth in preparation for the transition to adulthood on criminal activities during the transition to adulthood. Chapter 4 investigates the impact of extending foster care support during the transition to adulthood on later arrests during the transition to adulthood. Together, these three chapters consider the cumulative effects of institutions during childhood and adolescence, as well as the potential influence of institutions during the transition to adulthood.

Through an Institutional Lens

From an institutional perspective, the transition to adulthood is characterized by the detachment from childhood institutions, such as schools and family, and attachments to the institutions of adulthood, such as the labor market, marriage, and/or parenthood. These are considered normative institutions that most individuals experience in their lifetimes. An additional goal is avoidance of the intervention of non-normative public institutions such as the child welfare, criminal justice, or welfare systems, which touch the lives of a subset of the general population. The transition to adulthood is often characterized as a time with loosened institutional ties as individuals graduate from their childhood institutions but may not yet have established attachments to adulthood institutions. For many, the transition to adulthood is the first opportunity to exercise choice about their attachments to social institutions.

The conceptual framework for this dissertation is broadly based upon an institutional framework (Lee, In Press). This framework incorporates concepts from neo-institutionalism, a theoretical body of work that seeks to understand institutions and how they affect society, into the life course perspective. The life course perspective embeds human development within a multidimensional context, taking into account the historical context and relationships with other people, the timing of events within an individual's life, and finally, choices that individual makes within the context of their own lives (Elder, 1994, 1998). As Elder (1998) writes, "[a]ll life choices are contingent on the opportunities and constraints of social structure and culture" (p. 2). This dissertation seeks to examine the role that institutions play in shaping the opportunities and constraints that are available to individuals, in preparation for and during the transition to adulthood.

Chapters 2-4 of this dissertation each focus on a different institution(s) in preparation for or during the transition to adulthood. Whereas neo-institutionalism focuses on institutions and their impact at a macro-level, an institutional framework applies those concepts to understanding individual outcomes. Each individual is proposed to have a specific set of institutions operating in their lives (Lee, In Press), and each individual develops a unique and subjective understanding of the world which guides their decision-making processes, based in part on their experiences (North, 1990). For example, although the normative socializing institutions of childhood typically include the family and educational systems, for the youth who are the subjects of chapters 3 and 4, representatives of the child welfare system have taken the place of members of the family as a primary socializing institution as these foster youth are preparing to transition to adulthood. In addition, each individual is exposed to a variation of each institution. Thus, the foster youth in chapters 3 and 4 have families that have maltreated them in some way, violating a core function of the family, in contrast to youth in chapter 2 who continue to remain with their families through the end of adolescence. In addition, each of the foster youth in chapters 3 and 4 have different experiences within the child welfare system, such as differences based on placement type: a youth placed in a foster home with relatives will have a different experience of the child welfare system than a youth placed in a group home. Combined with individual characteristics within each institutional context, each individual has a unique experience of the specific set of institutions operating in their lives.

A second proposition of an institutional framework is that the specific set of institutions operating during childhood and adolescence will play a role in shaping the transition to adulthood (Lee, In Press). Institutions exert a small but constant force on the individual through the choices, constraints, and incentives that they provide for behavior, and this influence

accumulates over time (Pierson, 2004). In line with this proposition, two chapters explore the role of institutions during adolescence on outcomes during the transition to adulthood. Chapter 2 explores the role that the family and the school may play in determining the form of the transition to adulthood. Chapter 3 explores the potential impact that legal system involvement during adolescence may have on adult outcomes among a sample of foster youth. Chapter 4 moves to examining the role of institutions during the transition to adulthood period, thus considering whether institutional structures can better support the transition to adulthood, specifically for foster youth who have aged out of the system.

Institutions structure the context within which individuals live their lives (North, 1990), but individuals have agency within their contexts (Elder, 1994, 1998). Human agency can take multiple forms, but from an institutional framework, this agency is related to an individual's relationship to the institutions in their lives. During adolescence, when individuals have little choice about their families, schools, and the public institutions that may intervene to shape their socialization, their bonding to those institutions is an important individual factor. An individual more strongly bonded to a family will be more likely to adopt their norms and values, and thus behave in the manner prescribed, by that family (Catalano, Kosterman, Hawkins, Newcomb, & Abbott, 1996; Lonczak et al., 2001). As individuals move into the transition to adulthood period, many are able to begin to make decisions about the set of institutions that are operating in their lives, including which institutions and what variation of those institutions. These decisions, however, are made within the context of the opportunities that have been shaped by the institutions that have been operating throughout their lives. For example, some youth in the transition period can make choices such as whether to attend postsecondary school, and if so, which college or university they will attend. Other youth may need to begin working

immediately in order to support themselves or their families, but they will be able to make some choices about the types of jobs they will pursue. Thus, as an individual moves through the transition to adulthood, their bonding to institutions also reflect individual choice about the attachments and commitments they have made to various institutions, such as whether and when they will work, attend school, or get married, and if so where they will work or attend school, and to whom they will marry.

Outline of Chapters

Chapter 2 broadly tests the hypothesis of an institutional framework that the socializing institutions of family and school shape the form of the transition to adulthood (Lee, In Press). These institutions socialize individuals by the constraints on action and opportunities they provide for individuals (Breen & Buchmann, 2002). In turn, individuals will become involved in those institutions at varying levels, and each family or school rewards the individual for their involvement to a varying degree (Catalano et al., 1996; Choi, Harachi, Gillmore, & Catalano, 2005). This socialization process will contribute to the individual's form of transition to adulthood by shaping individual behaviors and choices. For example, a young woman with few positive opportunities for involvement and few rewards in her family and school may experience more options to engage in unstructured activities with her peers, which in turn could increase the likelihood of outcomes such as pregnancy in adolescence. As a pregnant adolescent, her institutional contexts would likely offer few positive opportunities, decreasing further the likelihood that she would attend postsecondary school. The young woman will make her choice about whether to raise her child within this context of limited opportunities, and with few promising possibilities, may choose to raise her child, thus making an early transition into parenthood. Chapter 2 tests the hypothesis that the increased likelihood of an accelerated

transition to adulthood among racial minorities and those from low socioeconomic statuses is explained, in part, by these socializing processes operating within each individual's family and school (i.e., the number and types of constraints and opportunities available through the family and school, and the rewards for involvement) and their bonding to their family and school.

In chapters 3 and 4, two criminological theories, labeling and social control, are used to provide additional specificity in articulating the active role that institutions may play in shaping the life course, specifically in regards to criminal outcomes. In chapter 3, labeling theory provides an explanation for why foster youth might disproportionately be involved in the juvenile justice system, and predicts that this involvement, which may act as a formal label, is related to later adult criminal activities and thus leads to later social exclusion. In contrast to other criminological theories that focus on the individual to identify causes of deviance, labeling theorists consider factors outside the individual, such as the state and other institutions, in understanding deviance within a society (Paternoster & Iovanni, 1989). Labeling theory argues that assigning a label, such as when an individual experiences official intervention and becomes labeled as a "felon" or an "ex-con," may serve to increase rather than decrease criminal or deviant behavior (Bernburg & Krohn, 2003). One of the hypothesized mechanisms operating between the application of a label and future criminal behavior is the exclusion from conventional opportunities in society, such as educational attainment and employment opportunities (Paternoster & Iovanni, 1989). Thus, the intervention of a public institution such as the juvenile justice system has the potential both to label the individual as a deviant and to weaken that individual's bond to society through limited opportunities, contributing to increased future criminal behaviors.

Social control theory is used in chapter 4 to examine the hypothesis that extended foster care support will reduce the likelihood of later legal system involvement, and thus increase the likelihood of social inclusion. Social control theorists argue that individuals commit deviant acts when their bond to society is weakened, and this bond may be conceptualized as an individual's bond to social institutions (Hirschi, 1969). Sampson and Laub (1990) incorporated the life course perspective into criminology with their age-graded theory of informal social control. They argue that different social institutions serve a more or less important function of informal social control, depending on an individual's developmental stage (Laub & Sampson, 1993; Sampson & Laub, 1997). Thus, an individual with strong bonds to the developmentally appropriate institutions will engage in less crime and deviance than an individual with weak bonds to those institutions (Sampson & Laub, 1990). They identify the dominant institutions of adulthood as work, marriage, parenthood, and investment in the community. Criminologists have documented that attachment to social institutions in adulthood, including education, employment, marriage, and parenthood, can serve as turning points, deterring individuals with early histories of delinquency from continued criminal involvement (Blomberg, Bales, Mann, Piquero, & Berk, 2011; Crutchfield & Pitchford, 1997; Kreager et al., 2010; Laub & Sampson, 2003; Sampson & Laub, 1990). This suggests that, more generally, the transition to adulthood may be a high-risk period since the transition to adulthood has been characterized as a period of "freedom from institutional guidance" (Arnett 2006, p. 308), and highlights the potential of attachments to institutions during the transition to adulthood to reduce criminal involvement and legal system involvement. This chapter tests the hypothesis that the foster care system can effectively serve as an institution of social control during the transition to adulthood period for former foster youth, and that extended care will reduce legal system involvement.

Chapters 2-4 explore three lines of inquiry about the influence of institutions in preparation for and during the transition to adulthood on subsequent adult deviant/criminal outcomes from a perspective that considers the active, slow, influence of institutions on the lives of individuals and provides implications for social welfare practice. For example, identifying the prosocial socialization processes in families and schools that can encourage increased opportunities for individual choice and success during the transition to adulthood (chapter 2) can provide implications useful for parent or teacher education or training programs or a model that substitute care programs can build upon. Understanding the potential adverse effects of legal system involvement as an adolescent (chapter 3) can inform juvenile sentencing policies and the use of diversionary programs. Finally, knowing whether there is a benefit to extended foster care support during the transition to adulthood in reducing arrests (chapter 4) can assist states and localities in deciding whether and how they will use available federal funds to provide extended support to their foster youth aging out of care.

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CHAPTER 2: SOCIALIZING INSTITUTIONS AND PATHWAYS TO ADULTHOOD

Introduction

The contemporary transition to adulthood has been described as an extended transition period characterized by a period of relaxed social norms and limited responsibilities, allowing individuals to explore possibilities for themselves before making intentional choices about their attachments to adulthood institutions, such as the labor force, marriage, and parenthood (Arnett, 1998, 2000; Côté, 2000; Furstenberg, Rumbaut, & Settersten, 2005). Some argue that this extended transition period should be considered a distinct developmental stage, termed *emerging adulthood* (Arnett, 1998, 2000). Due to the relaxed social norms during this transition period, there is a tremendous amount of observed heterogeneity (Arnett, 2006; Cohen, Kasen, Chen, Hartmark, & Gordon, 2003; Tanner, 2006). This observed heterogeneity is attributed, in part, to the process of individualization, the ability of individuals to make unique choices during this period in contrast to the uniform transitions in childhood such as from middle school to high school (Côté, 2000).

However, for some, the transition period is brief in duration and marked by the immediate adoption of one or more adult roles and responsibilities, termed *accelerated adulthood* (Bynner, 2005; Lee, In Press). An important distinction between an extended and accelerated transition to adulthood is the ability for an individual to make choices about the timing of transitions into adult social roles, such as worker, spouse, and parent; those experiencing an accelerated transition to adulthood lack the institutional supports that would allow them to delay moving into some or most adult roles while those experiencing an extended transition into adulthood have the supports that enable them to delay the adoption of some adult social roles, if they choose, over an extended period of time. For example, many young adults continue to receive financial support

from their families during the transition to adulthood (Schoeni & Ross, 2005), and residential

colleges and universities provide career guidance and affordable, subsidized housing and

cafeterias that enable many young adults to live outside of their parental home (Brock, 2010; The

William T. Grant Foundation Commission on Work, 1988). Unfortunately, not all youth in

transition to adulthood have families that are able to provide these supports or are able to attend

postsecondary education. Extant studies indicate that racial minority youth and those who are

poor or from a low socioeconomic status are more likely to experience an accelerated adulthood

(Berzin & De Marco, 2010; Bynner, 2005; Cohen et al., 2003; Macmillan & Copher, 2005;

Schoen, Landale, Daniels, & Cheng, 2009).

 This study seeks to explore the role that institutions may play in explaining group

differences in the likelihood of an accelerated or extended transition to adulthood. This study

begins with a brief introduction to an institutional framework and a discussion of the importance

of institutions during the transition to adulthood period, followed by an introduction to the life

course perspective of the transition to adulthood, conceptualized as a *pathway*. A review of the

literature exploring group differences in the transition to adulthood and socializing institutions

follows.

Institutions and the Transition to Adulthood

 This study draws from the conceptual framework specified by an institutional framework,

which uses concepts from neo-institutionalism, a theoretical body of work that seeks to

understand institutions and how they affect society, incorporated into a life course perspective, to

hypothesize the role that institutions play in shaping the transition to adulthood for individuals

(Lee, In Press). According to neo-institutionalism, institutions are defined as "the rules of the

game in a society or, more formally, are the humanly devised constraints that shape human

interaction" (North, 1990, p. 3). Institutions exert a small but constant force on the individual through the choices, constraints, and incentives that they provide for behavior (Hoffman & Ventresca, 1999), and this influence operates slowly over time (Pierson, 2004). The life course perspective embeds human development within the individual's historical and structural context, arguing that individual choices are "contingent on the opportunities and constraints of social structure and culture" (Elder, 1998, p. 2). Thus, an institutional framework examines the role that institutions play in shaping the opportunities and constraints operating in individual lives.

An institutional framework proposes that the specific set of institutions operating during childhood and adolescence will play a role in shaping the transition to adulthood (Lee, In Press). Each individual has a specific set of institutions operating in their life. For example, while participation in a church, synagogue, mosque, or other religious institution may be an important socializing experience for some children, others have no involvement with any religious institution. In addition, each individual is exposed to a variation of that institution, since there are numerous churches, synagogues, or mosques. Individuals also develop a unique and subjective understanding of the world which guides their decision-making processes, based on their experiences which provide partial information about the world as well as their underlying ideas about how the world should be organized (North, 1990), so that even individuals with the same set of specific institutions operating, such as siblings, may each develop a different understanding of their world. Both individual characteristics and their perception of the world interact with the institutional context, so that each individual has a unique experience of the specific set of institutions operating in their lives.

One primary purpose of institutions is to socialize individuals, or in other words, to convince "members to accept the society's fundamental normative patterns" (Messner &

Rosenfeld, 2007, p. 72). The primary, formal institutions for socialization during childhood and adolescence are the family and school, although other informal institutions may also have a socializing influence on individuals (e.g., communities/neighborhoods). The normative patterns that individuals are socialized into usually consist of the values and norms of the dominant culture (Messner & Rosenfeld, 2007). This socialization process exerts a slow force on individuals throughout childhood and adolescence by channeling and guiding behavior, and this force will influence the individual's transition to adulthood (Lee, In Press).

The Social Development Model (SDM) provides a useful and empirically tested conceptualization and operationalization of socialization (Catalano, Kosterman, Hawkins, Newcomb, & Abbott, 1996; Fleming et al., 2008; Lonczak et al., 2001). The SDM is grounded in criminological theory, and was developed to explain the development of antisocial behaviors based upon a range of psychological and social risk and protective factors across multiple domains, such as family, school, community, and peer group (Catalano et al., 1996). According to the SDM, the process of socialization operates at multiple levels through various units, including individuals, groups, or institutions (Choi, Harachi, Gillmore, & Catalano, 2005; Fleming et al., 2008). Moreover, the SDM operationalizes socialization as the perceived opportunities, degree of involvement, skills for involvement, and rewards or recognition that a child or adolescent receives (Catalano et al., 1996; Choi et al., 2005). In response, children become bonded to socializing units, and are more likely to adopt the behaviors, norms and values held by the units to which they are bonded (Catalano et al., 1996; Choi et al., 2005; Lonczak et al., 2001).

This study builds upon the SDM's conceptualization of the prosocial socialization process, but focuses on the process that operates through and across institutions. Institutions socialize

individuals by establishing a "set of opportunities and constraints" to which individuals respond (Breen & Buchmann, 2002, p. 303), and thus constraints to behavior are also an important aspect of the socialization process. Thus, while the SDM conceptualizes constraints as external to the socialization process, this study includes constraints, which consist of the limits and supervision that parents or teachers provide, as a component of socialization. Moreover, while SDM considers families, schools, peers, and the community as important domains in an individual's life, for this study, the family and school are conceptualized as formal socializing institutions. Individuals learn the norms and values of society that forbid, permit, or require action as they learn to play social roles through their families and schools (Ostrom, 1990; Portes, 2006). Individuals learn to play social roles based on opportunities for action and skill acquisition, as well as the limits or constraints to their set of possible actions, and this is communicated and reinforced through rewards or punishments.

This study hypothesizes that the socialization process will contribute to the individual's form of transition to adulthood by shaping individual behaviors and choices. For example, a young woman may have few prosocial opportunities for involvement and few rewards in her family and school, and this is unlikely to change over time since institutions tend to be stable in nature. She may experience more options to engage in unstructured activities with her peers, which in turn could increase the likelihood of an outcome such as pregnancy in adolescence. As a pregnant adolescent, her family and school would likely provide few positive opportunities for involvement, decreasing her likelihood of attending postsecondary school. The young woman will make her choice about whether to raise her child within this context of limited opportunities. With few promising possibilities in terms of school and employment, she may choose to raise her child, thus making an early transition into parenthood. This study tests the hypothesis that the

likelihood of an accelerated or extended transition to adulthood is explained, in part, by the number and types of constraints and opportunities available through the key socializing institutions in her life, her family and school, and the rewards within the family and school for involvement. Thus, an individual with a family and school that provide fewer prosocial constraints and opportunities, and fewer rewards for involvement, is more likely to experience an accelerated transition to adulthood.

The relationship between the family or school and individual behavior depends, to some degree, on the strength of the individual's bond to the family or school. As previously noted, the more strongly an individual is bonded to the family and school, the more likely they will adopt behaviors, norms, and values promoted by the family and school. For example, an individual who is strongly bonded to school is more likely to take advantage of opportunities and maintain their involvements with their school. They also will be more likely to pursue postsecondary education, which will have implications for a delayed transition into marriage and parenting. Stronger bonds to school are hypothesized to be associated with a higher likelihood of an extended transition to adulthood, since the extended transition tends to be related to the pursuit of postsecondary education. It is unclear how stronger bonds to family may influence the transition to adulthood, since there is more variability in the family and the norms and values that could be promoted by each family. It is difficult to make a group prediction about whether a bond to a given family would encourage the pursuit of postsecondary education, and whether and when the transition into employment, marriage, and parenthood due to the variability across families.

Pathways to Adulthood

From a life course perspective, the transition to adulthood is conceptualized as a *pathway*, where the transitions into each adult status (e.g., head of household, worker, spouse, parent) are

linked at a point in time, and the set of transitions at a point in time are linked over time (Macmillan & Copher, 2005; Macmillan & Eliason, 2003). For example, a hypothetical individual at age 21 may be preparing to graduate from college and remains single. They may have moved out of their parents' home, but are living in a college dorm and have not established their own household. They may not yet have completed school, begun their career, or started their own family. Their status in college influences their status on the labor market, which is likely part-time at most, and without financial security, may be delaying decisions about marriage and parenthood. By age 25, they may have completed college, be living on their own, and begun working full-time. They would be better situated to make plans for marriage and a family. Alternatively, if their success in college at age 21 had encouraged them to continue their education by pursuing a professional degree (e.g., JD or MD), they may continue to be working part-time and because of their lack of financial stability, may not yet be making plans for marriage and/or parenthood. In this way, the attainment of adult statuses is linked across domains and across time.

A study that used latent class analysis to estimate pathways to adulthood for a diverse sample of urban youth provides an empirical example of pathways to adulthood. Oesterle et al. (2010) used four role statuses (school attendance, employment status, marital status, and whether they were living with children) from study participants who were ages 18-30 between 1993 to 2005 to identify three pathways to adulthood for women and three pathways for men. The first pathway for both men and women was characterized by a low likelihood of being married and limited involvement in postsecondary education. However, many of the women were likely to be living with children by age 21, while few of the men were living with children throughout the transition period. Although women were more likely to be attending postsecondary school until

age 21 and thus less likely to work during the first few years of the transition period, after age 21, both men and women were likely to be working and not attending school. The second pathway was characterized by a high likelihood of being married and parenting by the mid-20s, with limited involvement in postsecondary education. In this pathway, women became parents earlier than men, and were more likely to be parenting overall. Women were also less likely than the men to be working. The third pathway was the largest, consisting of over 40% for both men and women. This third pathway was characterized by investment in postsecondary education and the delay of full-time employment, marriage and parenting and most closely resembles the description associated with an extended transition. Men and women were most similar on this pathway, although women were more likely to marry earlier and more likely to have children. Differences between men and women, as well as between pathways, were characterized primarily by the timing of marriage and parenting. To a lesser degree, pathways were differentiated by participation in postsecondary education.

Social Location and the Transition to Adulthood

The characterization of the transition to adulthood as a period of individualization focuses attention on the individual (Arnett, 2006; Cohen et al., 2003; Côté, 2000; Tanner, 2006), but extant studies indicate that there are differences in the transition to adulthood by gender, race/ethnicity, and social class (Fussell & Furstenberg Jr., 2005; Jackson & Berkowitz, 2005; Landale, Schoen, & Daniels, 2010; Macmillan & Copher, 2005; Mortimer, Staff, & Lee, 2005; Osgood, Ruth, Eccles, Jacobs, & Barber, 2005; Schoen et al., 2009), suggesting that there may be structural forces operating. Studies focusing on the timing of various adult role transitions indicate that lower socioeconomic status (SES) and ethnic/racial minorities are associated with an increased likelihood of an accelerated adulthood (Berzin & De Marco, 2010; Bynner, 2005;

Cohen et al., 2003; Macmillan & Copher, 2005; Schoen et al., 2009). For example, African

American women are more likely to become parents earlier than their white and/or Hispanic

peers (Landale et al., 2010; Macmillan & Copher, 2005; Schoen et al., 2009). Individuals from

higher SES backgrounds, as measured by parental educational attainment and income, tend to

experience an extended transition into adulthood by continuing education for longer periods and

delaying entry into long-term employment (Guldi, Page, & Stevens, 2007; Mortimer et al., 2005;

Osgood et al., 2005). Poor youth, defined as those at or below 200% of the poverty line, are more

likely to leave home and marry before turning 18, and more likely to become parents during the

early part of the transition to adulthood, but less likely to leave home, marry, and become parents

later in the transition to adulthood (Berzin & De Marco, 2010). However, these trends should not

overshadow the heterogeneity within each group, such as the fraction of African American

women who do not become parents at a young age (Landale et al., 2010; Macmillan & Copher,

2005) and the poor youth who, if they do not make an accelerated transition, are less likely to

make transitions into adult social roles later during the transition period (Berzin & De Marco,

2010). Overall, an extended transition into adulthood appears to be more prevalent among white

and middle/upper SES individuals than poor and/or racial/ethnic minority youth (Macmillan &

Copher, 2005). However, little work has been done to identify the factors that may contribute to

these patterns.

There is some evidence that gender, race, and social class interact to influence the

transition to adulthood, although rarely have all three been examined simultaneously (Mahaffy,

2004). Studies that have considered some combination of gender, race, and social class have

found that there is more variability in the transition to adulthood for women and racial/ethnic

minorities (Fussell & Furstenberg, 2005; Jackson & Berkowitz, 2005; Macmillan & Copher,

2005). For example, in a study that examined the sequence, but not timing, of transitions (e.g., the transition into work was followed by marriage then parenthood, or the transition into parenthood was followed by work then marriage), Jackson and Berkowitz (2005) reported that while only two sequence patterns accounted for over 90% of white and Latino men, three patterns accounted for over 90% of white women, four for African American men, five for Latina women, and six for African American women. In another study, MacMillan and Copher (2005) identified separate sets of pathways by race/ethnicity, and found three pathways for African American women, three pathways for Hispanic women, and four pathways for White women. While the pathways for African American women tended to be characterized by a single role transition (e.g., an early transition from school to work), the pathways for Hispanic and White women were characterized by multiple role transitions (e.g., a transition into marriage followed by a transition into work). Without attention to both gender and race, some of these differences between groups may not have been evident.

While there are observed differences in the transition to adulthood by gender, race/ethnicity, and socioeconomic status, the reasons for these differences have not been well explored. The next section presents the hypothesis that institutions play a role in explaining these differences.

Group Differences in Socializing Institutions

Although there appear to be consistent trends in racial and socioeconomic differences in the transition to adulthood, both in the sequencing and timing of adult role adoption, the processes operating to differentially shape the transition to adulthood have not been well-articulated or well-tested. Although the influence of uniquely individual experiences within institutions as proposed in an institutional framework (Lee, In Press) has not yet been empirically

examined, there is some research to suggest that there may be a relationship between social location and the socialization processes operating in the family and school.

Families vary by race/ethnicity and socioeconomic status. For example, the prevalence of various family structures differs by race/ethnicity. There is a higher prevalence of female-headed families among African American families (51.2%) and Latino families (31.2%) than American Indian families (26.2%) and European American families (22.8%), while, Asian American families tend to have more household members and include a higher percentage of extended family members (McLoyd, Cauce, Takeuchi, & Wilson, 2000). These family characteristics are likely to have an impact on the socialization process, since a single-headed family probably has less capacity to supervise and monitor their child(ren) (i.e., provide constraints), provide opportunities for involvement, and reward involvement for the child in comparison to a two-parent family or a family with extended adult relatives living in the household. In addition, family structure also appears to play a role in educational attainment, so that youth living in a two-parent household are more likely to pursue postsecondary education (Vartanian, Karen, Buck, & Cadge, 2007). Families also vary by socioeconomic status, since with only one potential breadwinner, a single-parent family is more likely to be poor than a two-parent family (West Coast Poverty Center, 2010).

In addition to differences in family structure, parenting styles may differ by race/ethnicity and socioeconomic status (Choi et al., 2005; Hardaway & McLoyd, 2009; McLoyd et al., 2000). These differences in parenting style can directly influence the socializing process that operates within each family. For example, Choi et al. (2005) tested the applicability of the socialization process, as operationalized in the SDM, to ethnic minority youth. In her study, she used a measure of family prosocial socialization that consisted of family involvement (e.g., how often

do your parents ask what you think before they make family decisions) and family rewards (e.g.,

how often do your parents praise you for doing good things). She concluded that while the

processes of family socialization did not differ across groups, there were differences in levels of

family prosocial socialization: the European American youth reported higher levels of family

involvement and rewards than the minority youth (African American, Asian/Pacific Islander, and

multiracial) in her sample. In addition, in comparison to working class and poor parents, middle

class parents tend to employ parenting strategies that increase the opportunities and involvement

of their children (Hardaway & McLoyd, 2009). In line with these findings, I hypothesize that in

comparison to Caucasian youth, racial minority youth will report overall lower levels of family

prosocial socialization, so that racial minority youth will report lower levels of perceived

prosocial constraints and opportunities for involvement, and fewer rewards for their

involvement.

There may also be group differences in the school socialization process by race/ethnicity.

There is evidence that there are differences in school involvement and bonding by race/ethnicity,

and that these differences are related to both student-level factors, such as family structure and

parental education, and school-level factors, such as total school enrollment and percentage of

own race/ethnicity students (Johnson, Crosnoe, & Elder, 2001). Thus, a student who attends a

school with a higher percentage of students of their own racial/ethnic background may have

more opportunities for involvement in student clubs or activities than a student at a different

school with a lower percentage of students of their own racial/ethnic background. However, it is

difficult to predict how school socialization may differ by race/ethnicity and SES without

additional school-level information, and at the time of the study, mandatory busing was used to

achieve racial balance. However, I hypothesize that there will be differences in levels of school prosocial socialization in this study.

Other Family Factors Explaining Group Differences

In addition to the prosocial socializing process operating within the institutions of family and school, there are other factors related to the family that may play a role in explaining group differences in the form of the transition to adulthood. These other family factors, parental school expectations, family disruption, and immigrant status, may not directly impact the socialization process, but may have a direct impact on the individual's choices during the transition to adulthood period.

As the research reviewed above has indicated, the pursuit of postsecondary educational attainment is typically associated with the delayed transition into full-time employment, marriage, and parenthood (Mortimer, Oesterle, & Krüger, 2004). Other factors that may increase the likelihood of attainment of postsecondary education may also contribute to an increased likelihood of an extended transition. Extant research has found that higher parent expectations for their child's educational attainment are a predictor for educational achievement and school persistence, and that there are racial/ethnic differences in parental school expectations (Yamamoto & Holloway, 2010). Higher parent expectations and higher levels of educational achievement will increase the likelihood that an individual will choose to pursue postsecondary education and delay the transition into the labor market and adult family roles.

As was previously noted, family structure is hypothesized to be related to group differences in socializing processes. In addition to the role that family structure may play in shaping socializing processes, a change in structure has been found to be associated with a higher likelihood of an accelerated transition rather than an extended transition among women (Landale

et al., 2010; Oesterle et al., 2010). A change in family structure is associated with early sexual involvement, and this in turn may influence an individual's ideas about acceptable transitions into marriage or parenthood (Landale et al., 2010). Thus, for an individual whose parents have divorced, a single-parent family may become more normalized than for an individual whose parents remain married. The individual may more readily accept establishing a single-parent family if faced with an unexpected pregnancy during adolescence, and thus may be more likely to choose to raise their child out of wedlock, making an accelerated transition.

Finally, family immigrant status (i.e., the individual was born in another country, or is the child of someone who was born in another country) may also play a role in explaining group differences in pathways to adulthood. Immigration status is likely to have an impact on the transition to adulthood, although given the diverse experiences of immigrants (Rumbaut & Komaie, 2010), there are forces operating within the heterogeneous immigrant population that may be at odds with one another, making it difficult to predict how immigrant status may influence the transition to adulthood in this study. There is evidence that immigrant youth have lower access to and use of high-quality institutions in adolescence, such as schools, extracurricular programming, and health care resources (Fuligni & Hardway, 2004). This may translate to fewer opportunities and rewards within their institutional contexts and increase the likelihood of an accelerated transition. Additionally, immigrant status may have an impact on the importance of family roles such as marriage and parenting: foreign-born young adults report having more children, and earlier, than their U.S. born counterparts (Rumbaut, 2005), increasing the likelihood of an accelerated transition. On the other hand, immigrant status may also have an impact on educational achievement. Among Asian Americans, immigrant status and parental expectations appear to play an important role in explaining their high rates of postsecondary

education attainment (Vartanian et al., 2007), increasing the likelihood of an extended transition. However, there is also a tremendous amount of variability across different Asian ethnic groups, ranging from 14% of Hmong- and Cambodian-Americans holding at least a Bachelor's degree to 73% of Taiwanese-Americans (Asian Pacific AAmerican Legal Center &Asian American Justice Center, 2011), so that aggregating these ethnic groups may obscure some of these educational differences, which may, in turn, result in a higher likelihood of accelerated adulthood for some ethnic groups. In addition, a young adult from an immigrant family with undocumented status may not be able to attend postsecondary education, and instead may be forced to make an immediate transition from high school-to-work (Gonzales, 2011).

The Current Study

This study considers the role of socialization in both the institutions of family and school in shaping pathways to adulthood. Since previous studies have noted gender differences in pathways to adulthood, this study focuses on women, similar to previous studies (Landale et al., 2010; Macmillan & Copher, 2005). Gender differences are largely driven by differences in the timing and prevalence of the transition into marriage and parenthood, and there is more variability in pathways among women than men (Fussell & Furstenberg, 2005; Jackson & Berkowitz, 2005). A focus on women will reduce the number of pathways being considered and allow for a more in-depth exploration of the experiences of women. In addition, existing studies primarily focus on differences between individuals who identify as African American and Caucasian young adults, and sometimes include individuals who identify as Hispanic or Latino. This study adds to the literature by including Asian/Pacific Islander experiences of the transition to adulthood, an ethnic/racial group that has been absent from prior comparative studies.

In this study, I build on the prior work of Oesterle and colleagues (2010), using the same dataset and their three identified pathways to adulthood for women. This study also uses measures informed by the SDM to estimate the socializing influence of two separate institutions, the family and school, as well as the individual's bond to each institution during adolescence. This study tests the conceptual model presented in Figure 2.1, which hypothesizes that the higher likelihood of an accelerated adulthood among racial/ethnic minority youth and youth from low socioeconomic status families can be explained by lower levels of family and school prosocial socialization. The individual's bonding to their family and school will also influence the relationship between socialization in the family and school, and pathway to adulthood. In addition, other family characteristics, such as parental school expectations, family disruptions, and immigrant status, will also play a role in explaining group differences. This study asks the following questions:

1. Do racial minorities and youth from low socioeconomic status families experiences lower levels of prosocial socialization (i.e., fewer constraints, fewer perceived opportunities, less involvement, and fewer rewards) than their Caucasian and high socioeconomic status peers?

2. Are higher levels of prosocial socialization (i.e., more constraints, more perceived opportunities, more involvement, and more rewards) in the family and school related to a higher likelihood of an extended transition to adulthood? Does prosocial socialization in the family and school explain differences by racial/ethnic minority and low socioeconomic status?

3. Is the relationship between the family and school and pathways to adulthood influenced by the individual's bond to the family and school? Are stronger bonds to school

associated with an increased likelihood of an extended transition and weaker bonds to school associated with an increased likelihood of an accelerated transition?

4. Can the differences in pathway to adulthood by racial/ethnic minority and low socioeconomic status be explained by other family characteristics, such as parental expectations, a family disruption, and immigrant status?

Method

Sample

The present study used prospective data from the Seattle Social Development Project (SSDP), a longitudinal panel study of the development of prosocial and antisocial behaviors. In 1985, 18 Seattle elementary schools that served students from high-crime neighborhoods were identified. During this study, the Seattle School District used mandatory busing to achieve racial balance in schools. Thus, all schools in the study served a heterogeneous population of students drawn from at least two different neighborhoods of the city. The SSDP study population included all fifth graders in these schools ($N = 1,053$). A total of 808 students (77% of the identified population) and their families agreed to participate in the longitudinal SSDP study.

The SSDP panel has been interviewed in 12 waves from 1985 through 2005, when most subjects were 30 years old ($SD_{age} = .52$) (annually during school Grades 5-10, in Grade 12, and every 3 years thereafter). Questionnaires were group-administered in school in Grades 5 and 6. In later years, panel members were interviewed individually and in person. Respondents who moved out of state were tracked and interviewed. Retention rates for the sample have remained above 90% since 1989, when panel members were 14 years old. Nonparticipation at each wave was not consistently related to gender, ethnicity or poverty. The SSDP sample includes about

equal numbers of male ($n = 412$) and female ($n = 396$) students and is ethnically diverse: About

47% are white, 26% are black, 22% are Asian American, and 5% are Native American. Each

study participant was classified into a single ethnic category, and there was no option for mixed

race. Of these groups, 5% are Hispanic. A substantial proportion of the participants are from

low-income families. Forty-six percent of the participants' parents reported a maximum family

income of less than $20,000 per year in 1986. About 52% of the panel members participated in

the National School Lunch/School Breakfast Program between the ages of 10 and 12. Forty-two

percent of the sample reported only one parent present in the home when the student was in fifth

grade.

 For this study, only women were examined, as was previously noted. Native American

youth were also omitted from analyses due to their small sample size ($n = 27$) for a final sample

of 369 women.

Measures

 Pathways to Adulthood is an unordered categorical variable with three categories. These

three pathways were previously measured by Oesterle et al. (2010), which used the attainment of

adult statuses (school attendance, employment status, marital status, and whether they were

living with children) at ages 18, 21, 24, 27, and 30 to identify latent trajectories of role

configurations across time. Using latent class analysis, Oesterle et al. (2010) found three

pathways: unmarried early mothers (27.4%), married mothers (29.3%), and postsecondary

educated women without children (43.4%). For the purpose of this analysis, respondents were

classified into the most likely latent pathway identified in the latent class analysis, resulting in a

manifest variable with three unordered categories. For the present paper, the unmarried early

mothers pathway is referred to as the *accelerated transition* since it is characterized by a high

probability of taking on a parenting role by age 21 (but mostly outside the context of marriage), accompanied by movement into employment and a low likelihood of school attendance after high school. The pathway of postsecondary educated women without children reflects the most *extended transition* to adulthood, since it is characterized by prolonged educational involvement after high school and the delay of adoption of family roles (both marriage and parenthood) through age 30. The third pathway falls in between the accelerated and extended pathways and reflects what can be thought of as the most "*traditional*" female pathway to adulthood, characterized by marriage and parenthood by the mid- to late-20s accompanied by limited involvement in post-secondary schooling after high school and moderate involvement in full-time work.

Confirmatory factor analyses were used to create four latent constructs: two measures of the prosocial socialization process (*socialization in the family* and *socialization in school*) and two measures of bonding (*family bonding* and *school bonding*) experienced during grades 8-10. For the two prosocial socialization measures, *constraints*, *opportunities*, *involvement*, and *rewards* were estimated as a first order factor model. Indicators of each latent construct were asked annually between grades 8-10, and each individual item was averaged across years. For example, within family constraints, participants were asked in grades 8, 9, and 10 whether "the rules in my family are clear," and they were given four possible response categories (yes!, yes, no, no!). Responses to each item across the three years were averaged, and this averaged item was used in the confirmatory factor analysis. This provided a measure of the process across several years spanning middle school and high school. Although previous studies using SSDP data created socialization measures across domains, this study sought to create domain-specific socialization measures. Thus, items were included following SDM items classified within each

category (i.e., family constraints, family opportunities, and family rewards), and prior studies provided a guide for inclusion of items in the models (Catalano et al., 1996; Lonczak et al., 2001). The items included in the measurement models are listed in Figures 2.2-2.4. The factor scores for each of these four latent constructs were used as observed measures of each latent construct, since the sample size would have limited the power of the analyses if the second order model was estimated simultaneously with the path model.

A dichotomous measure of *low socioeconomic status* (1 = yes, 0 = no) at grades 5 and 6 was created from three variables: whether the student was eligible for the school free lunch program, family income, and the average parental education. Each variable was standardized, and family income and average parental education were reverse-coded to reflect low socioeconomic status. These three standardized variables were then averaged. An inspection of a histogram of the continuous measure of socioeconomic status (SES) showed a bimodal distribution with a peak above and below the mean. Respondents above the mean were grouped into a low SES group (=1) and respondents below the mean were grouped into a high SES group (=0). SES was recoded as a dichotomous variable since it may be difficult to detect the effect of a one point difference on the standardized scale of SES, and the comparison between individuals in low versus high SES groups is more meaningful than between individuals who score one point higher or lower than another individual.

Race was self-reported as Caucasian, African American, or Asian American. Twenty-seven women identified themselves as Native American, but were excluded from analyses due to their small sample size.

Parents were asked how much schooling they expected their children to complete, and they were given seven possible responses ranging from some high school through graduate or

professional school. Parent responses to this question were averaged across grade 8-10 to create a measure of *parental school expectation*.

A dichotomous measure of a *family disruption* (1 = yes, 0=no) was also included, indicating whether respondents experienced parental divorce or separation or the loss of a parent, between grades 5 and 12. A measure of family *immigrant status* (1 = yes, 0 = no) was included based on whether the individual reported that they were born in a country other than the U.S., or at least one of their parents was born in a country other than the U.S.. Thus, this measure of immigrant status is a measure of family immigrant status, and does not differentiate between first- or 1.5-generation immigrant status of individuals, where individuals were born in a country other than the U.S., and second-generation immigrant status, where individuals were born in the U.S. but their parents were born in a country other than the U.S.

Analyses

All analyses were conducted in MPlus version 6.1 (Muthén & Muthén, 1998-2010). Confirmatory factor analyses were conducted to create factor scores for family and school socialization and family and school bonding. Factor scores were then used in path models to estimate the direct effects of school and family socialization on pathways to adulthood and their indirect relationship via school and family bonding. Full information maximum likelihood estimation was used to address missing data in both the measurement and path models. In the path models, which included the factor scores for family and school socialization and family and school bonding, complete information was available for 91% (*n* = 330) of the sample.

Confirmatory factor analyses. School and family socialization factors were estimated separately as second order factor models, while school bonding and family bonding were estimated simultaneously in one model (see Figures 2.2-2.4). Items with low factor loadings (

<.5), model fit statistics (Root Mean Square Error of Approximation (RMSEA), Comparative Fit Inex (CFI) and the Tucker Lewis Index (TLI), and the number of remaining items for each factor were used to inform whether an item was included in the final models. In all models, factor variances were constrained to 1.00 and all factor loadings were allowed to vary in order to scale the metric of the factor.

Path models. First, bivariate relationships among study variables were assessed with t-tests and analysis of variance (ANOVA), chi-square tests, or bivariate multinomial regression models. Second, path models were estimated.

Since the outcome variable, pathways to adulthood, is an unordered categorical variable, multinomial logistic regression models were estimated. The multinomial logistic regression model is an extension of the logistic regression model, and can be thought of as estimating separate logistic regression models for each pairwise comparison of outcome categories (Long, 1997). For this study, the comparison group is the extended pathway, so that the first logistic regression model compares an accelerated pathway to an extended pathway outcome, and the second compares a traditional pathway to an extended pathway outcome. The exponentiated coefficients of a multinomial logistic regression describe the ratio of the odds of following an accelerated pathway to adulthood compared to an extended pathway in the first case, and the odds of following a traditional pathway to adulthood compared to an extended pathway in the second case. An odds ratio of 1 indicates equal odds of experiencing the two transitions being compared. Odds ratios greater than 1 indicate that there is a greater likelihood of the first pathway (an accelerated or traditional pathway); and odds ratios of less than 1 indicate that there is a greater likelihood of the second pathway (an extended pathway in both cases).

These multivariate models were estimated in three stages. In the first stage, the relationship between socializing institution and pathway to adulthood was estimated while taking into account race and SES. In the second stage, bonding to the socializing institution, both family and school, was added to the models to test the mediating effect of bonding between the socializing institution and pathway to adulthood, while taking into account race and SES. In the third stage, the additional family characteristics (parental school expectations, family disruption, and immigrant status) were added to the models. Maximum likelihood robust estimators were used to estimate the multinomial logistic regression model.

Intervention effects. A portion of the sample was exposed to a multicomponent preventive intervention in the elementary grades, consisting of teacher training, parenting classes, and social competence training for children (see Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999, for a description and analysis of the intervention and effects). Consistent with prior analyses that have shown few differences in the covariance structures of the intervention and control groups (Abbott, Catalano, & Hawkins, 1991; Catalano, Kosterman, Hawkins, Newcomb, & Abbott, 1996; Huang, Kosterman, Catalano, Hawkins, & Abbott, 2001), analyses for this study were based on the full sample after the following steps were taken to ensure that consistency existed between the covariance structures of the control group and both the group assigned to receive all of the intervention components and the group that received the treatment only in grades 5 and 6 (previous analyses have shown that the "full" intervention group was most likely to demonstrate significant intervention effects on the means; Hawkins et al., 1999) (e.g., Bentler, 1993; Jörskog & Sörbom, 1989).

First, analysis of variance (ANOVA) tests were conducted to test mean intervention differences in family and school socializing institutions and bonding to family and school. None

of these analyses indicated significant differences between the control and both the full and late treatment groups.

In order to test the consistency of the covariance structures, I examined the fit of a multi-group measured variable model where all covariances among the measures of family and school socializing institutions, bonding to family and school, and the pathways to adulthood measures were constrained to be equal across the control and intervention groups. The Wald test of parameter constraints comparing nested models indicated that there was no significant difference in model fit (e.g., for the control versus full model, $\chi^2(16) = 20.993$, $p = .179$). These results suggested no substantial group differences in the relationships of interest in this study, supporting a single group analysis.

Results

Confirmatory factor analysis. The measurement models are presented in Figures 2.2-2.4. Reported factor loadings are standardized, and all standardized factor loadings are significant at the $p < .05$ level. For the family socialization model, all standardized factor loadings on the first order factors (constraints, opportunities, involvement, and rewards) ranged between .609 and .903, and the standardized factor loadings on the second order factor, socialization, ranged between .624 and .979. The correlation between two items that were substantively related was modeled, and the model fit statistics indicated better fit: *how often do your parents listen to you when you want to talk to them* and *do your parents ask you before most family decisions affecting you are made*. The model fit statistics indicated reasonable model fit, $\chi^2 (72) = 282$, RMSEA = .089, CFI = .927, TLI = .908.

For the school socialization model, the standardized factor loadings for the first order factors (constraints, opportunities, involvement, and rewards) ranged between .513 and .824, and

the factor loadings for the second order factor, socialization, ranged from .618 to .988. The correlation between two sets of related items was modeled, resulting in model fit statistics that indicated improved fit. Each set of two items pertained to either the *social studies* teacher or the *other* teacher and were: *my teacher praises or compliments me when I work hard* and *my teacher notices when I am doing a good job and lets me know*. The model fit statistics also indicated reasonable model fit, χ^2 (59) = 175, RMSEA = .071, CFI = .943, TLI = .924.

For the bonding model, the factor loadings ranged between .522 and .878. The correlation between school and family bonding was modeled. In addition, modeling the correlation between the error terms for two items, *do you want to be the kind of person your father is* and *do you share your thoughts and feelings with your father*, indicated better model fit. Model fit statistics indicated moderate fit, χ^2 (12) = 62, RMSEA = .107, CFI = .937, TLI = .890.

Bivariate relationships. Table 2.1 presents the bivariate relationships between the study variables and pathways to adulthood, each estimated separately with multinomial regression. Higher levels of family prosocial socialization reduced the odds of experiencing an accelerated pathway rather than an extended pathway. In addition, higher levels of family and school bonding both reduced the odds of experiencing an accelerated pathway rather than an extended pathway. However, school prosocial socialization does not appear to be related to the likelihood of experiencing an accelerated or extended pathway. Family and school socialization, and family and school bonding do not appear to be related to the likelihood of experiencing a traditional pathway in comparison to both an accelerated and extended pathway.

Race and low socioeconomic status (SES) also appear to be related to pathway to adulthood. More specifically, in comparison to Caucasian youth, African American youth were 6.27 times more likely to experience an accelerated pathway than an extended pathway, 2.48

times more likely to experience a traditional pathway than an extended pathway, and 2.53 times more likely to experience an accelerated pathway than a traditional pathway. Similarly, in comparison to youth from high SES families, youth from low SES families were 3.69 times more likely to experience an accelerated pathway than an extended pathway, 2.68 times more likely to experience a traditional pathway than an extended pathway. Asian American women were no more or less likely than Caucasian women to experience any of the pathways to adulthood.

Family characteristics were also related to pathway to adulthood. Higher parent school expectations and immigrant status were both related to a lower likelihood of experiencing an accelerated pathway in comparison to an extended or traditional pathway. In addition, higher parent school expectations were related to a lower likelihood of experiencing a traditional pathway rather than an extended pathway. A family disruption had the opposite relationship: a family disruption increased the likelihood of an accelerated and traditional pathway in comparison to an extended or traditional pathway.

Tables 2.2 and 2.3 present descriptive statistics by race and SES. The highest percentage of Caucasian youth (52%) and Asian American youth (56%) fell into the extended pathway, while the highest percentage of African American youth fell into the accelerated pathway (50%). About 30% of each racial group fell into the traditional pathway. There were also significant racial differences in family and school prosocial socialization. Caucasian women reported the highest average score for family prosocial socialization. While Asian American women reported the highest average score on school prosocial socialization, they reported the lowest average score on family prosocial socialization. In addition, Asian American women reported the highest levels of parent school expectations, the lowest rates of family disruptions, and were almost all immigrants or children of immigrants (99%).

Table 2.3 shows that there were significant differences between youth from high and low SES families in pathway to adulthood, family prosocial socialization, parental expectations, family disruption, and immigrant status, but there were no differences in family and school bonding by SES. While a majority of high SES youth (59%) fell into the extended transition pathway, approximately one-third of the low SES youth fell into each of the three pathways. Youth from low SES families reported lower levels of family prosocial socialization, lower parent expectations, and more family disruptions than their high SES peers.

Path models. The models comparing accelerated to extended pathways are presented first, followed by results for the models comparing the traditional to extended pathways. Within each set of comparisons, the first stage model is described first, where pathways were regressed on the socialization variables, race, and SES. In the second stage model, bonding was added to the models as a potential mediator between socialization and pathways. In the third stage models, family characteristics were added to the models.

Accelerated versus extended pathway. Figure 2.5 presents the coefficients, standard errors (in parentheses), and significance levels (non-significant paths are indicated with a dotted line) for the first stage regression models, which tests the hypothesis that the socialization processes of the family and the school will mediate the relationships between race and SES, and an individual's pathway to adulthood. In this model, African American women were 3.98 times as likely as Caucasian women to experience an accelerated rather than an extended pathway, and low SES women were 3.00 times as likely than high SES women to experience an accelerated rather than an extended pathway to adulthood. The direct effect for African American and low SES women decreased slightly with the addition of the socialization variables, although they both remain significant. In addition, Asian American women were 0.330 times as likely than

Caucasian women to experience an accelerated rather than an extended pathway in this model, although the bivariate relationship was not significant.

In this model, low SES women reported lower levels of family socialization than their high SES peers. In turn, higher levels of family socialization were related to a lower likelihood of experiencing an accelerated pathway rather than an extended pathway. The slight decrease in the relationship between SES and pathway and the significant relationship between SES and family socialization suggests that family socialization may partially mediate the differences between low and high SES and pathway to adulthood. However, the indirect effect for low SES women ($B = .094$, $p = .134$) via family socialization was not significant, indicating that family socialization does not partially mediate the differences between low and high SES and pathway to adulthood.

The coefficient for Asian American women (in comparison to Caucasian women), which was not significant in the bivariate analysis, was significant in the multivariate model. In a test of the indirect effect from Asian American to pathway to adulthood via family socialization, the effect is marginally significant ($B = 0.159$, $p = .062$), albeit in the opposite direction of what would be expected: the indirect effect indicates that Asian American women are associated with a higher likelihood of an accelerated pathway. As can be seen in the path model, Asian American women report *lower* family socialization than their Caucasian peers, but *higher* levels of family socialization are associated with a lower likelihood of an accelerated adulthood. However, coupled with the direct effect, the total effect for Asian American women is in the expected direction and significant ($B = -.951$, $p=.021$), so that overall, Asian American women are less likely to experience an accelerated pathway.

Figure 2.6 presents the results for the second stage regression models, which tests the hypothesis that bonding is a mediator between socialization and pathway to adulthood. In this model, the direct effects of race and SES remain significant. The coefficients for African American women and low SES did not change. African American women were 3.92 times as likely as Caucasian women, and low SES women were 3.00 times as likely as high SES women to experience an accelerated rather than an extended pathway. The coefficient for Asian American women has decreased slightly, but remains significant; Asian American women were .361 times as likely to experience an accelerated rather than an extended pathway.

Although the bivariate relationships between both family and school bonding and an accelerated versus extended pathway to adulthood were significant, in this model, the coefficients for family and school bonding were not significant. In addition, the coefficient for family socialization was no longer significant. This suggests that family socialization and family bonding may explain the same variation in pathway to adulthood, and controlling for both variables results in non-significance for both variables.

Table 2.4 presents results for the third stage regression models, where parental school expectations and family disruption are hypothesized to explain the relationship between race, low SES, and pathway to adulthood. In this model, the direct effects of being Asian American and low SES on pathway were no longer significant, but the direct effect for African American remains significant, although the effect appears to have decreased slightly. African American women were still 3.41 times as likely as Caucasian women to experience an accelerated rather than an extended pathway. This suggests that parent expectations and family disruptions fully mediates the relationship between both Asian American women and low SES and pathway, and partially mediates the relationship between African American women and pathway to adulthood.

There is a significant relationship between being Asian American and SES on both parent school expectation and family disruption in the expected directions: Asian Americans reported higher parent school expectations than their Caucasian peers, while women from low SES families reported lower parent school expectations than their peers from high SES families. There was also a significant relationship between higher parent school expectations and a decreased likelihood of an accelerated pathway versus an extended pathway to adulthood. The indirect effects of race and SES on pathway through parent expectations was significant for Asian American women (B = -.555, p=.001), so that Asian American reported higher parent expectations and were less likely to experience an accelerated pathway. Youth from low SES families (B = .521, p<.001) reported lower parent expectations and were more likely to experience an accelerated pathway.

In addition, Asian American women reported fewer family disruptions than Caucasian youth, and low SES and African American women reported more family disruptions than their high SES and Caucasian counterparts. A family disruption was associated with a higher likelihood of an accelerated pathway versus an extended pathway. The indirect effects of race and SES on pathway through family disruption were also significant. Asian American women (B = -1.703, p = .004) reported fewer family disruptions and were less likely to experience an accelerated pathway rather than an extended pathway. African American women (B = .919, p=.040) and women from low SES families (B = 1.036, p=.013) reported more family disruptions and were more likely to experience an accelerated pathway rather than an extended pathway. Thus, parent expectations and family disruptions together fully mediate the relationship between Asian American women and low SES and pathway to adulthood. Family disruption partially mediates the relationship between African American women and pathway to adulthood.

Immigration status was also taken into account as another factor that may be related to pathway to adulthood. The coefficient for immigration status on pathway to adulthood was significant, so that if a young woman was from an immigrant family, they were .214 times as likely to experience an accelerated pathway rather than an extended pathway.

Traditional versus extended pathway. Figure 2.7 presents the coefficients, standard errors (in parentheses), and significance levels (non-significant paths are indicated with a dotted line) for the first stage regression models for the traditional versus extended transition pathway outcome, where pathway to adulthood is regressed on family and school socialization, race, and low SES. In the first stage, the direct effect for Asian American women compared to Caucasian women, and low SES were both significant, but there was no direct effect for African American women compared to Caucasian women. While African American women were more likely to experience a traditional than an extended pathway in the bivariate analyses, the relationship was no longer significant after also controlling for SES, family socialization, and school socialization. In addition, while the bivariate relationship for Asian American women and pathway was not significant, Asian American women were .330 times as likely to experience a traditional as an extended pathway. Low SES women were 2.73 times more likely to experience a traditional transition rather than an extended transition. Just as in the accelerated versus extended pathways model, Asian American women were associated with lower levels of family socialization and higher levels of school socialization than their Caucasian peers. There does not appear to be a difference between African American and Caucasian women in terms of family socialization and school socialization. There does not appear to be a relationship between family socialization and school socialization, and whether a woman experienced a traditional or

extended pathway to adulthood. Family and school socialization did not appear to mediate the relationship between race and SES, and a traditional versus extended pathway to adulthood.

Figure 2.8 presents results from the second stage regression models for the traditional versus extended pathways, where bonding was included as a potential mediating pathway between socialization and pathway. However, since family and school socialization were not significant in the first stage model, bonding would not play a mediating role. In this model, the coefficient for low SES on pathway appears largely unchanged while there no longer appears to be a relationship between race and pathway. Asian American women were no more or less likely to experience a traditional versus an extended pathway than their Caucasian peers. As in the accelerated versus extended pathways model, Asian American women were associated with lower levels of family socialization, and higher levels of family socialization were associated with higher levels of family bonding. Asian American women were also associated with higher levels of school socialization. However, there does not appear to be a relationship between family socialization, family bonding, school socialization, school bonding and pathway to adulthood.

Table 2.5 shows results for the third stage model. In this model as in the second stage model, there was no longer a significant relationship between race and a traditional versus extended pathway. Although the coefficient for low SES women has decreased slightly, in this model, low SES women continued to be 2.05 times as likely to experience a traditional rather than an extended pathway.

There was a relationship between race and SES and both parent school expectations and family disruption. Asian American women reported higher levels of parent school expectations than their Caucasian peers, while low SES women reported lower parent school expectations

than their high SES peers. In turn, higher parent school expectations were associated with a lower likelihood of experiencing a traditional versus extended pathway. There was an indirect effect for Asian American women through parent school expectations (B = -.464, *p*=.003), so that higher parent school expectations were associated with a lower likelihood of a traditional pathway than an extended pathway among Asian American women. There was also an indirect effect for low SES women (B = .438, *p* =.001), so that low SES women reported lower levels of parent school expectations and were more likely to experience a traditional rather than an extended pathway to adulthood.

Asian American women reported fewer family disruptions than their Caucasian peers, while low SES and African American women (compared to Caucasian women) reported more family disruptions. In turn, there does not appear to be relationship between family disruption and a traditional versus extended pathway.

Discussion

In this study, Caucasian women reported the highest levels of family prosocial socialization, while Asian American women reported the lowest levels of family prosocial socialization as hypothesized and confirming earlier research (Choi et al., 2005). Asian American women reported the highest levels of school socialization, thus confirming that there are differences in school socialization by race/ethnicity. Low SES women reported lower levels of family socialization than their high SES peers as was hypothesized, but there were no differences in school socialization by SES.

Second, higher levels of family prosocial socialization were associated with a decreased likelihood of an accelerated pathway, so that more constraints and opportunities, and more rewards for involvement were associated with a decreased likelihood of an accelerated pathway.

However, family socialization does not appear to partially mediate the relationship between low SES and pathway to adulthood, since the indirect effect was not significant. In addition, while the bivariate relationship for Asian American and pathway was not significant, the indirect relationship through family socialization was marginally significant and was associated with an *increased* likelihood of an accelerated pathway. This effect was in the opposite direction of both the direct relationship and what was hypothesized. This may suggest that the family socialization process may differ for Asian American and Caucasian youth. The family socialization process in this study reflects a democratic parenting style (Choi et al., 2005), and includes items that reflect a collaborative exchange between parent and child, such as soliciting child input in family decisions. Studies have found that Asian families may employ a more authoritarian parenting style (McLoyd et al., 2000). Further research in how these cultural differences in parenting style may operate to differentially socialize children, and in turn, shape pathways to adulthood is warranted.

School socialization was not associated with pathway to adulthood, and thus did not play a role in explaining group differences in pathway to adulthood. This is somewhat surprising, since postsecondary education is often coupled with delayed transitions into family roles and employment, and thus characteristic of an extended pathway. However, the measure of school socialization did not capture individual educational achievement, which may be a stronger indicator of whether an individual will choose to pursue postsecondary education. In addition, while other family characteristics were included in this study, there may be other school characteristics that may influence pathways to adulthood that were not captured here, such as the quality of the school, available support to prepare students for postsecondary education, and the socialization influence of school peers.

Third, higher levels of family and school prosocial bonding were associated with a lower likelihood of experiencing an accelerated pathway in comparison to an extended pathway. In addition, although there were race differences in school bonding (Asian American women reported the highest levels of school bonding), there were no group differences in family bonding. When the two bonding measures were added to the multivariate models, the relationships were no longer significant. In addition, the family socialization variable was no longer significant after adding the bonding measures to the model. This suggests that family bonding and socialization may be related and competing processes in their influence on pathways to adulthood, and the inclusion of both measures resulted in non-significance for both variables.

Fourth, after adding other family characteristics to the model, parent school expectations, family disruptions, and immigrant status, only African American women continued to be more likely to experience an accelerated rather than an extended pathway, and only low SES women were more likely to experience a traditional rather than an extended pathway. This suggests that the variables included in the full model explain differences between Asian American and Caucasian women, and low SES and high SES women in the likelihood of experiencing an accelerated or extended pathway, but differences between African American women and Caucasian women remain. The variables included in the full model also appear to explain racial differences in the likelihood of experiencing a traditional versus extended pathway, but differences between low and high SES remain.

Parent school expectations, family disruptions, and immigrant status indicate that while all three are related to whether a woman experiences an accelerated or extended pathway, only parent school expectations were related to whether a woman experiences a traditional or

extended pathway. Taken as a whole, this suggests that the specific family and school prosocial socialization processes measured in this study are not as important as parent school expectations in shaping the transition to adulthood, at least in shaping the likelihood that Asian American women and low SES women will experience an extended transition rather than an accelerated adulthood. Thus, although the family socialization process that operates through the constraints imposed, perceived opportunities, and levels of reward for involvement may have a limited role in shaping pathways to adulthood, the family itself plays an important role in shaping an individual's pathway and in explaining some group differences.

In these models, immigrant status is an important and potentially confounding family characteristic. The bivariate analyses indicate that immigrant status is associated with a higher likelihood of an extended pathway, is more common among the low SES women, and describes almost all the Asian American families (99%). In addition, immigrant status was significant in the full model, even when controlling for family socialization, family bonding, and parent school expectations, indicating that immigrant status plays a role in increasing the likelihood of an extended rather than an accelerated beyond the family characteristics included in these models.

In addition, these models indicate that school socialization and school bonding do not play a role in shaping pathways. Instead, parent school expectations appear to be more important than school socialization and school bonding in shaping the transition to adulthood. This suggests that designing interventions that will encourage parents to maintain high expectations for educational attainment for their children may have an impact on increasing the likelihood that their children will experience an extended pathway to adulthood, although attention should be paid to setting realistic expectations, and to also equipping parents with the knowledge and support necessary to help their children achieve those expectations.

This study begins to test aspects of an institutional framework for studying the transition to adulthood. More specifically, this study finds that individuals experience their families and schools uniquely, and when considering the family and school, the family plays a larger role in shaping the transition to adulthood and in explaining some differences by race/ethnicity and socioeconomic status. However, the measures of family and school prosocial socialization used in this study may be limited. As noted earlier, the socialization process in the family consisted of a democratic parenting style, which may be less common among racial/ethnic minority families (Choi et al., 2005; McLoyd et al., 2000). Future work can include developing family socialization measures that may be more sensitive to varying parenting styles. In addition, although this study used general prosocial socialization measures, future work can include identifying norms and values that might be specifically related to an accelerated, traditional, or extended transition to adulthood, and measuring these norms and values within the family and school. Most likely, these norms and values would be related to expectations for school, work, and family formation. For example, the literature on parent school expectations suggests that there may be a socialization process operating through high parent expectations which encourages children to adopt high norms for academic achievement (Yamamoto & Holloway, 2010). While parent school expectation was included in the study, it was a separate measure and not captured in the measure of family prosocial socialization process.

In addition, the measure of pathway to adulthood used for this initial study may be a limited measure of an accelerated versus extended transition to adulthood, and future work can include developing a measure that takes into account the individuals' ability to make choices about their transition. The pathways to adulthood variable does not necessarily capture the degree to which the individual was supported by families or colleges during the transition, and

thus the ability for the individual to make choices about their adoption of role transitions. For example, in a study comparing the experiences of upper and lower SES youth who made immediate transitions into full-time work, Blustein and his colleagues (2002) found that their experiences were substantively different. Low SES youth described their work as a means for survival, and reported few resources and high levels of difficulties while the high SES youth used the early work experiences as an important means for career exploration and were able to develop their sense of self. These types of important differences may not be captured in the measures used for this study.

Limitations

There are several limitations to this study. First, the sample size for this study limited my ability to test the interaction of race and SES. For example, with only 72 Asian American women in this sample and three categories in the pathway variable, taking into account the interaction of race and SES would result in small cells making it difficult to make meaningful comparisons. The size of the sample also resulted in treating the socialization and bonding variables as observed measures, rather than estimating the measurement and overall model simultaneously.

The small sample size also limited power in terms of untangling the influence of immigrant status on the transition to adulthood. With almost 30% of transition age young adults immigrants or children of immigrants (Rumbaut & Komaie, 2010), a better understanding of the impact of immigrant status on the transition to adulthood is an important task. However, while the majority of new immigrants are Hispanic and Asian (Rumbaut & Komaie, 2010), since this study did not specifically identify Hispanic youth, the overwhelming majority of immigrants in this study were Asian immigrants. In addition, almost all the Asian American youth in the study were either immigrants or children of immigrants, making it difficult to untangle the impact of

race/ethnicity versus immigrant status. Aggregating a group of diverse Asian American youth may also mask differences between Asian ethnicities. In addition, the measure of immigrant status used for this study did not differentiate between those who had been born outside of the U.S. and those who had been born in the U.S., and thus potential differences between these two immigrant groups could not be examined.

Conclusion

Families appear to be more important than schools in shaping the transition to adulthood, and while the specific prosocial socialization processes measured in this study do not play a large role in shaping the transition to adulthood, characteristics of the family institution play an important role in explaining the differences between Asian American youth and their Caucasian peers, and low SES youth and their high SES peers.
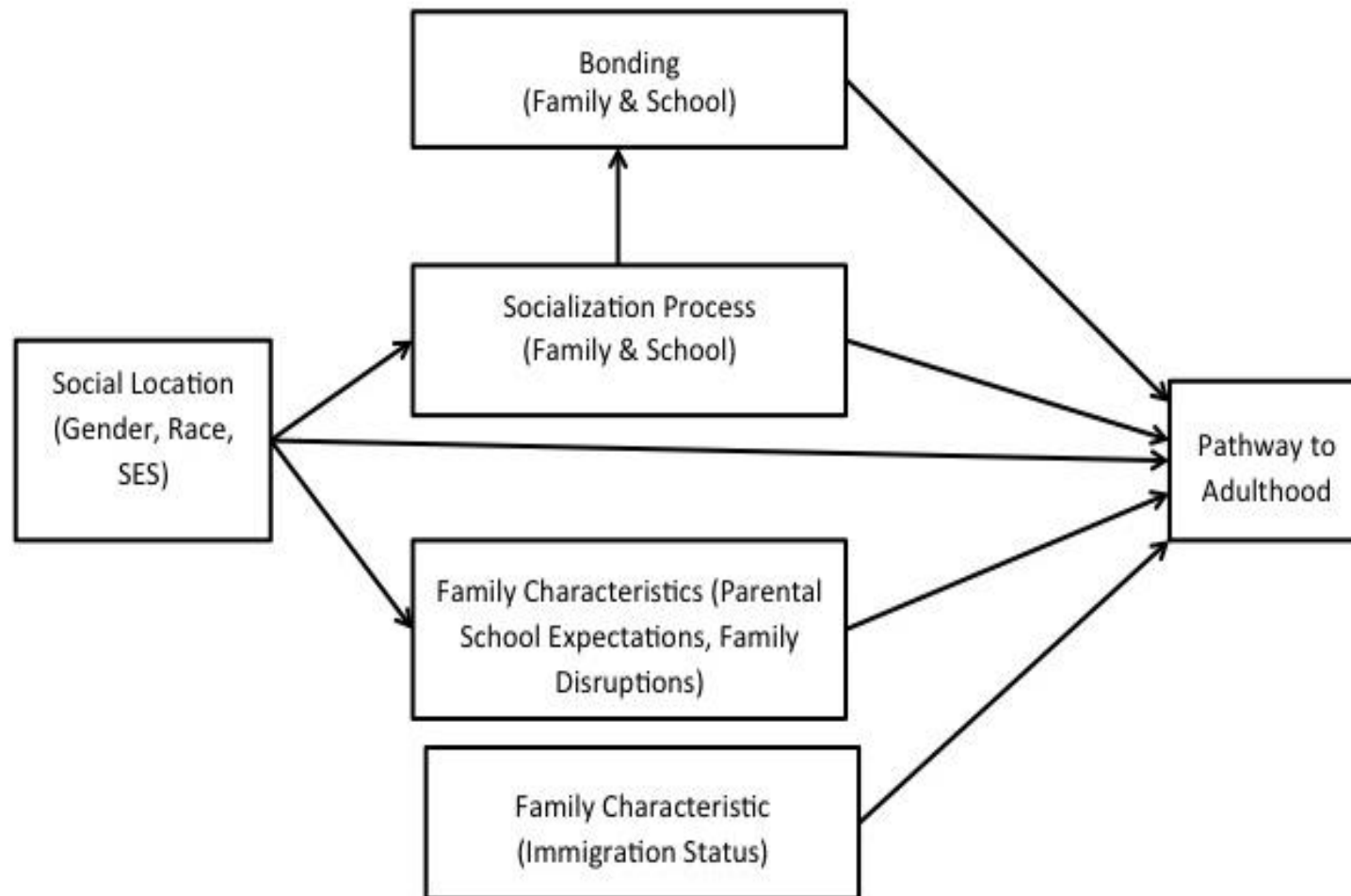
Figure 2.1. Conceptual Model
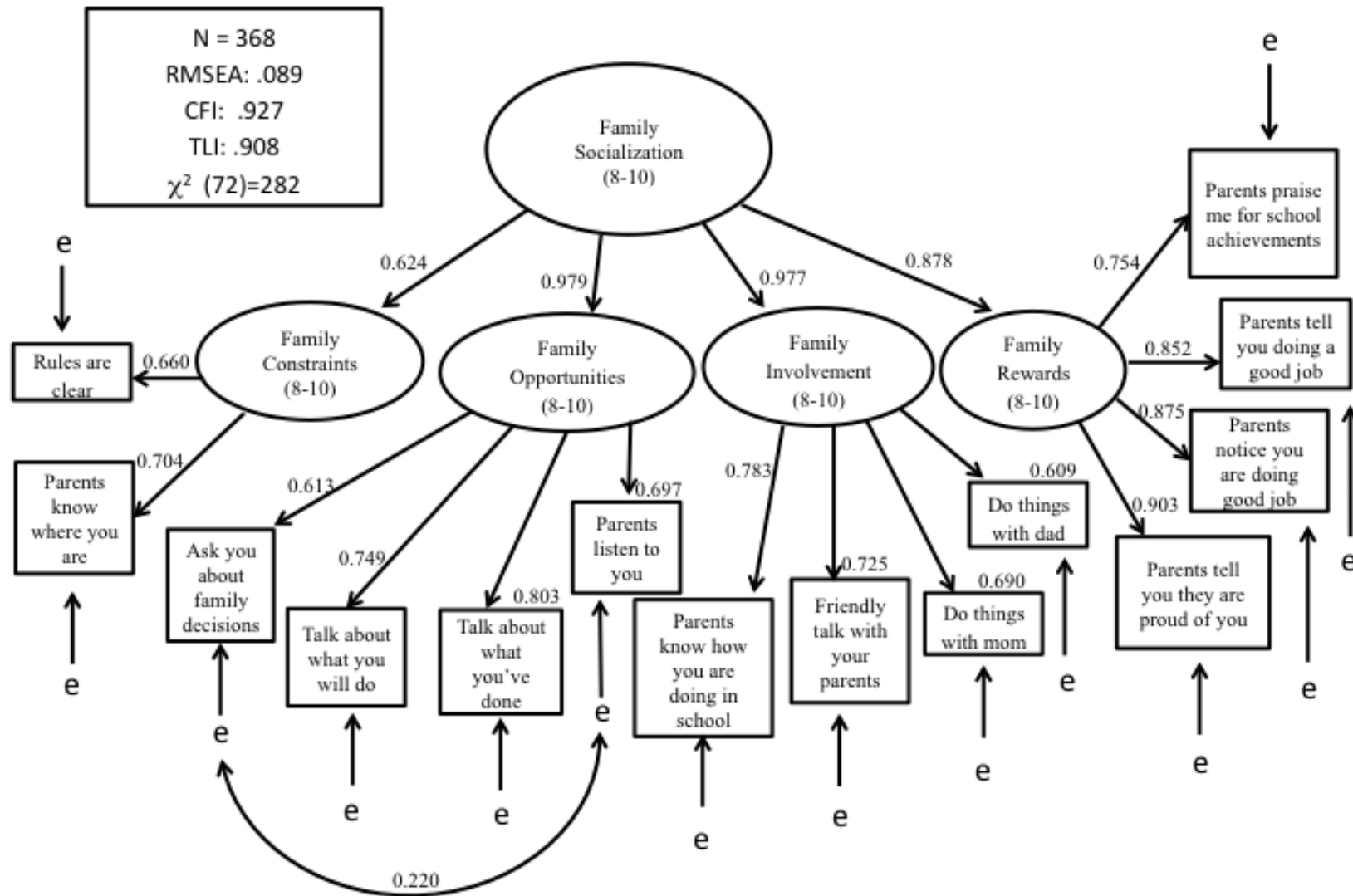
Figure 2.2. Family Socialization Measurement Model

N = 387
RMSEA: .071
CFI: .943
TLI: .924
$\chi^2 (59)=175$

School
Socialization
(8-10)

0.755

0.988

0.618

0.768

School
Constraints
(8-10)

School
Opportunities
(8-10)

School
Involvement
(8-10)

School
Rewards
(8-10)

0.778

0.737

Other teacher
lets me know
when I'm
doing a good
job

Social Studies
teacher lets
me know I'm
doing a good
job

Teacher
is fair

0.824

0.769

Teacher
is in
control

0.555

Feel
safe at
school

0.520

Chances
to get
involved

0.554

0.655

Work in
groups or
teams

0.630

Chances to
take part in
class
activities (8)

Others want
me to do my
best

0.721

Take part
in class
discussions

0.513

Friendly
talk with
your
teacher

0.716

Social Studies
teacher praises
me for
working hard

0.798

Other teacher
praises me
for working
hard

e

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e

e

0.449

0.728

Figure 2.3. School Socialization Measurement Model
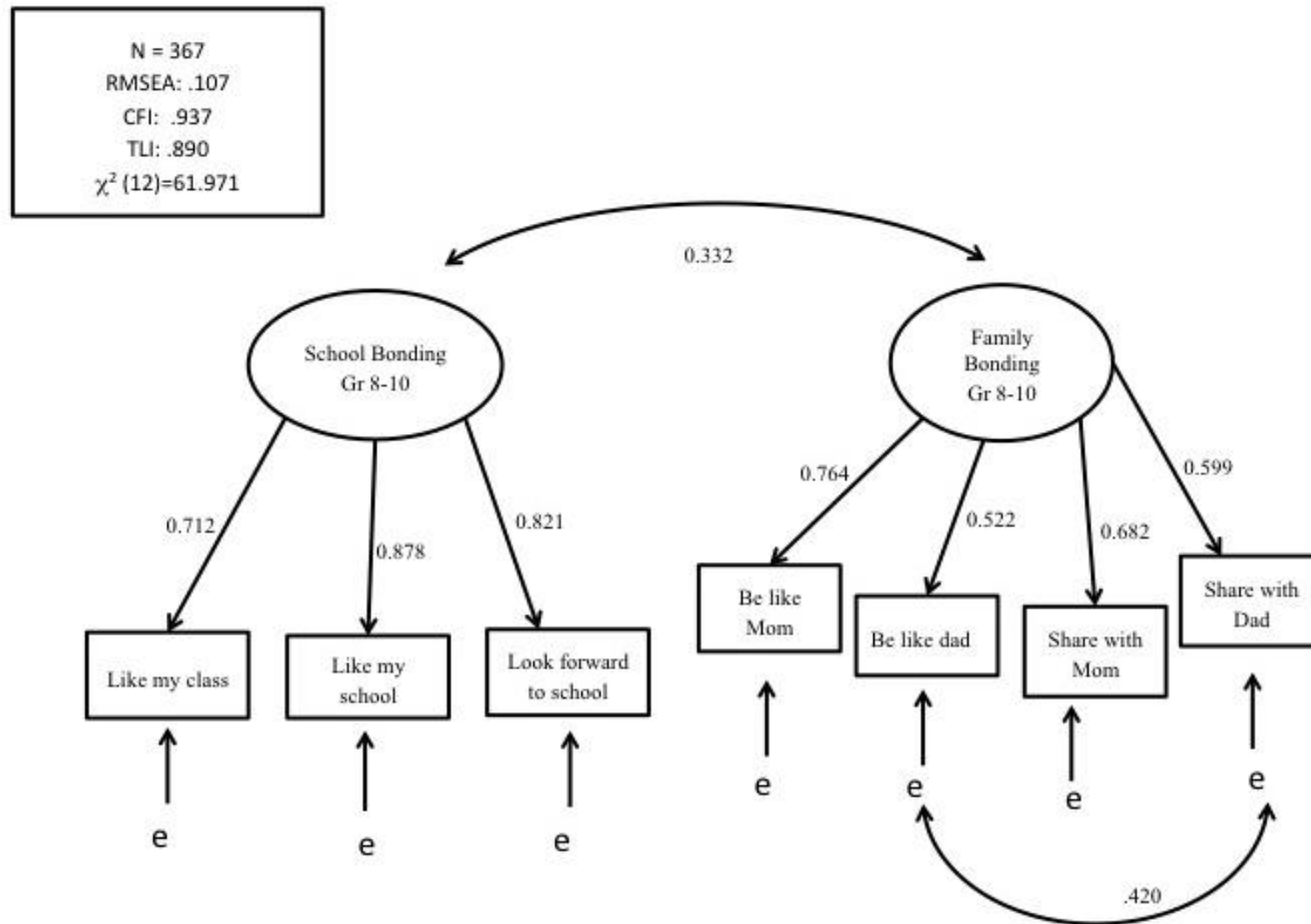
Figure 2.4. Bonding Measurement Model

Family Socialization Process
Gr 8-10

-.03
(.14)

-.44**
(.14)   -.26*
(.12)

-.36*
(.17)

African
American vs.
Caucasian

1.38***
(.35)

Asian
American vs.
Caucasian

-1.11**
(.43)

.33***
(.04)

Low SES
Gr 5-6

1.10***
(.31)

Accelerated
vs. Extended
Pathway to
Adulthood
(ages 18-30)

.27*
(.12)

-.03
(.12)

-.08
(.18)

.11
(.10)

School Socialization Process
Gr 8-10
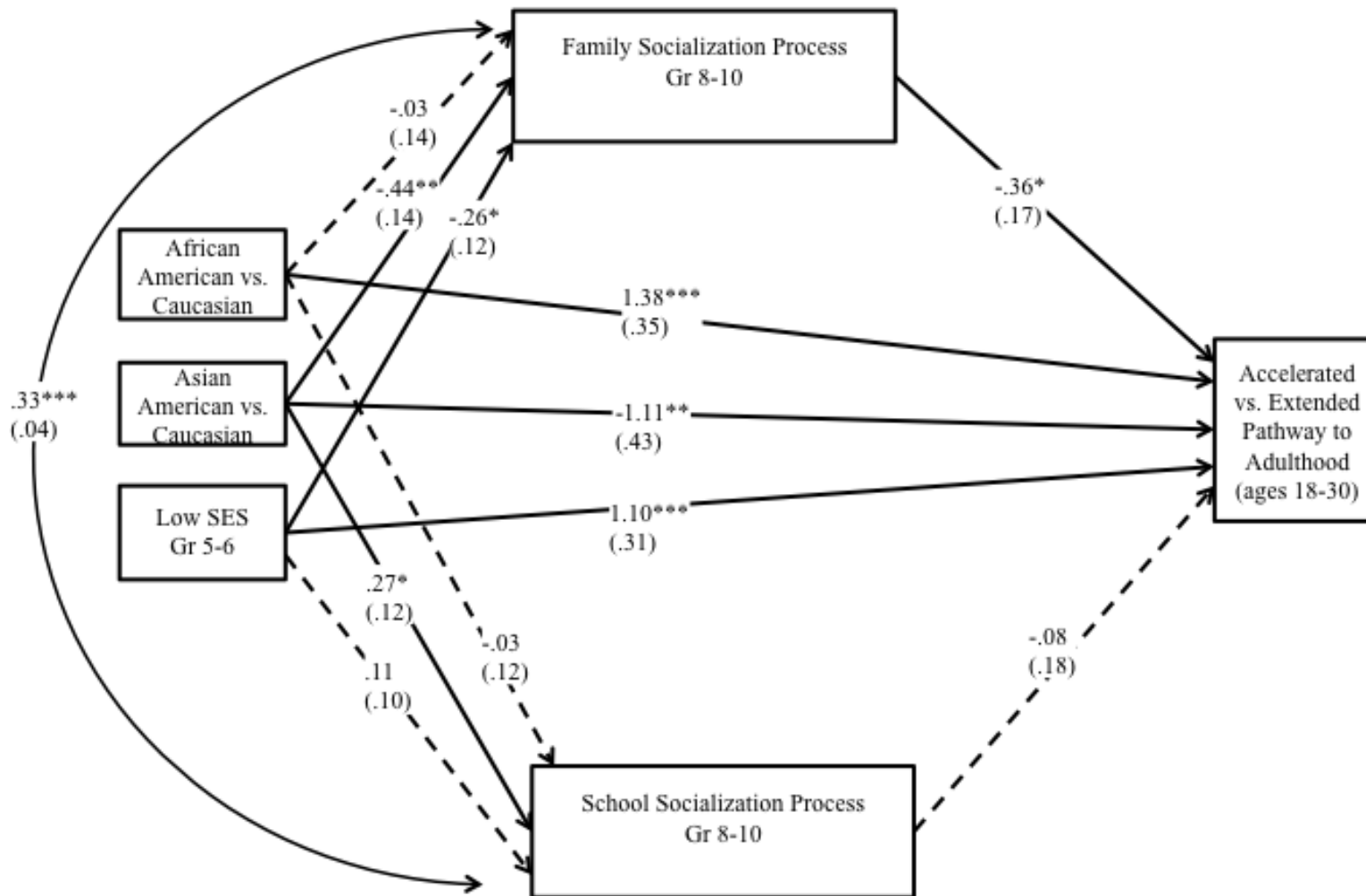
* p<.05; ** p<.01; *** p<.001

Figure 2.5. Accelerated versus Extended Pathway, Socialization Model (N = 361)

61
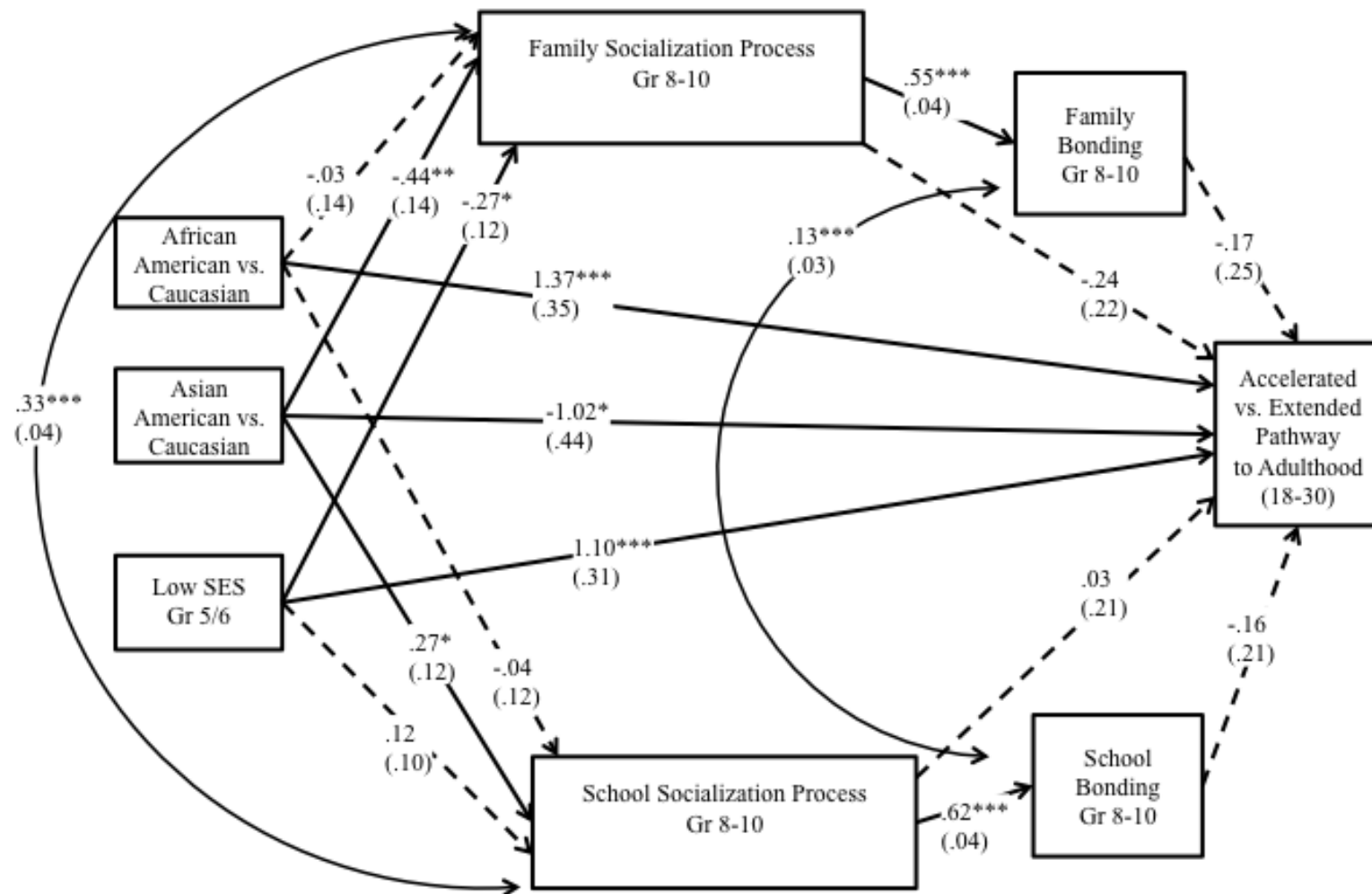
* *p*<.05; ** *p*<.01; *** *p*<.001

Figure 2.6. Accelerated versus Extended Pathway, Socialization and Bonding Model (N = 361)

Family Socialization Process
Gr 8-10

-.03
(.14)

-.44**
(.14) -.26*
(.12)

African
American vs.
Caucasian

.49
(.37)

Asian
American vs.
Caucasian

-.75*
(.38)

Low SES
Gr 5-6

1.00**
(.30)

-.20
(.17)

Traditional
vs. Extended
Pathway
(ages 18-30)

.33***
(.04)

.27*
(.12)

.11
(.10)

-.03
(.12)

.06
(.16)

School Socialization Process
Gr 8-10
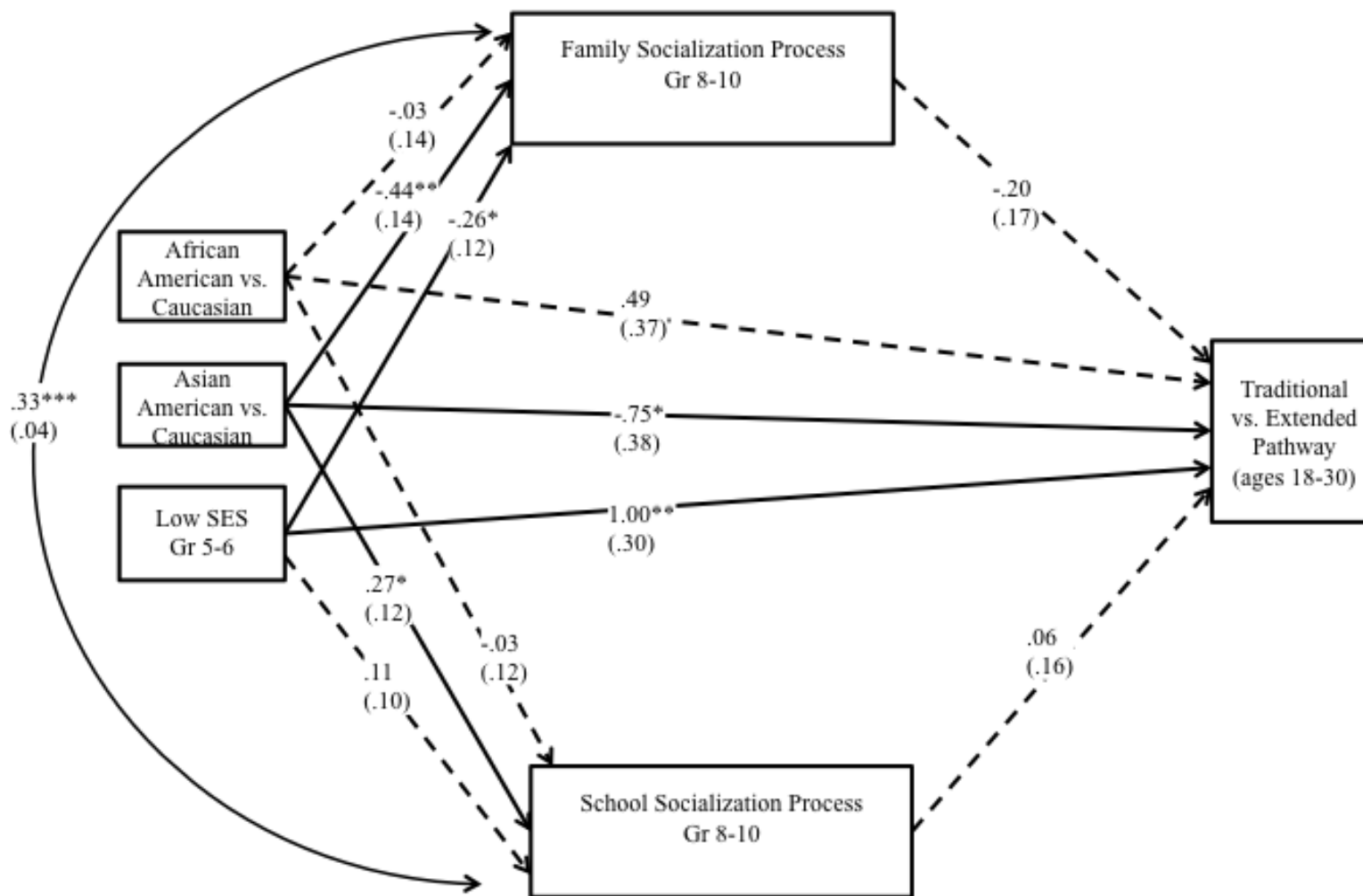
* $p<.05$; ** $p<.01$; *** $p<.001$

Figure 2.7. Traditional versus Extended Pathway, Socialization Model (N = 361)
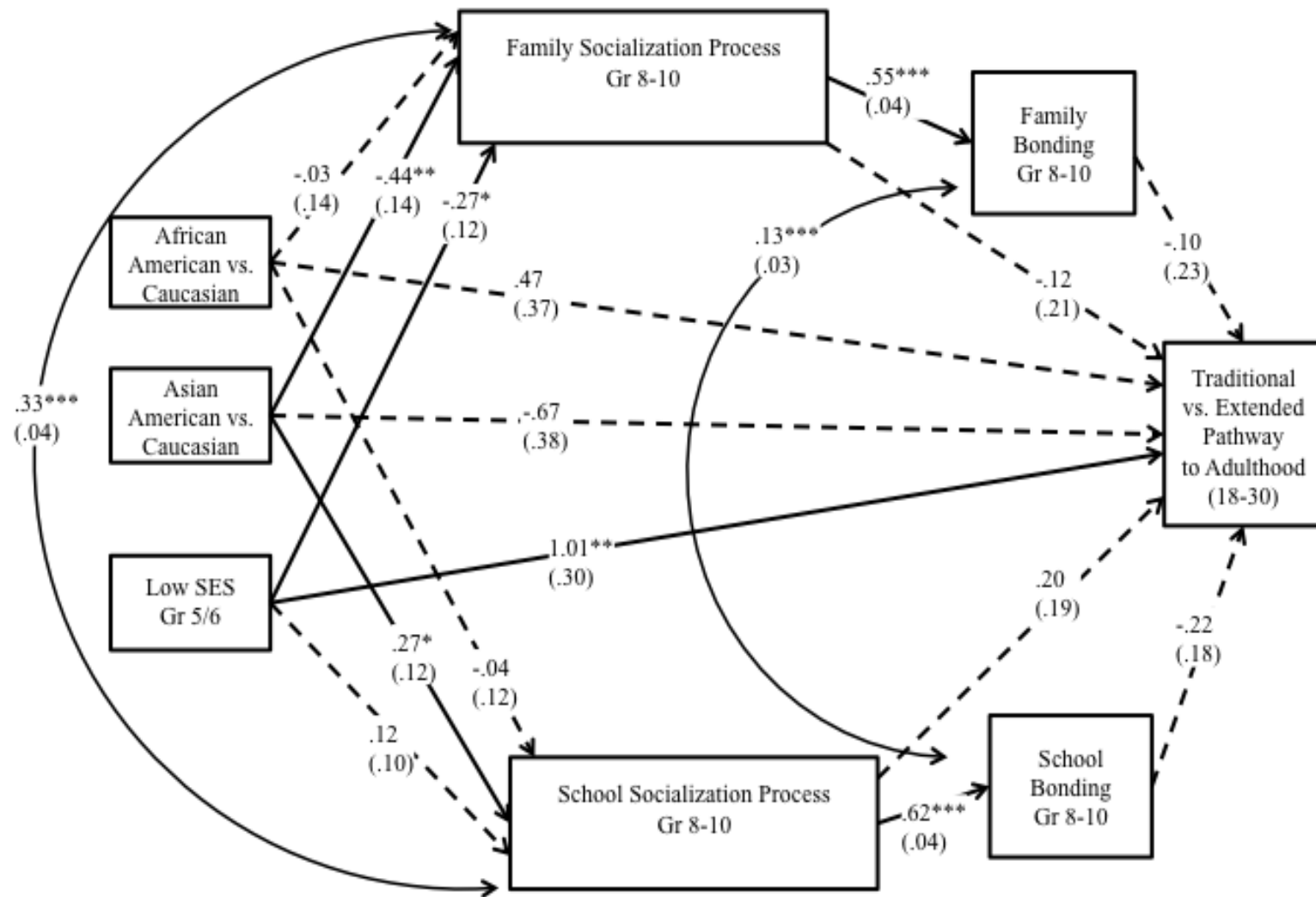
Figure 2.8. Traditional versus Extended Pathway, Socialization and Bonding Model (N = 361)

The figure contains the following labeled boxes and path coefficients:

Boxes:
- Family Socialization Process Gr 8-10
- Family Bonding Gr 8-10
- African American vs. Caucasian
- Asian American vs. Caucasian
- Low SES Gr 5/6
- School Socialization Process Gr 8-10
- School Bonding Gr 8-10
- Traditional vs. Extended Pathway to Adulthood (18-30)

Path coefficients (standard errors):
- .55*** (.04)
- -.03 (.14)
- -.44** (.14)
- -.27* (.12)
- .13*** (.03)
- -.10 (.23)
- .47 (.37)
- -.12 (.21)
- .33*** (.04)
- -.67 (.38)
- 1.01** (.30)
- .20 (.19)
- -.22 (.18)
- .27* (.12)
- -.04 (.12)
- .12 (.10)
- .62*** (.04)

* p<.05; ** p<.01; *** p<.001

Table 2.1. Key Variables by Pathway to Adulthood

	Accelerated vs. Extended Pathway				Traditional vs. Extended Pathway				Accelerated vs. Traditional Pathway			
	B	(SE)	OR		B	(SE)	OR		B	(SE)	OR	
Family Socialization	-0.34	0.14	0.72	*	-0.19	0.14	0.83		-0.15	0.15	0.86	
Family Bonding	-0.48	0.16	0.62	**	-0.27	0.16	0.76	+	-0.21	0.18	0.81	
School Socialization	-0.23	0.16	0.80		0.00	0.14	1.00		-0.23	0.16	0.80	
School Bonding	-0.34	0.15	0.71	*	-0.21	0.14	0.82		-0.13	0.16	0.88	
Race (vs. Caucasian)												
African American	1.84	0.33	6.27	***	0.91	0.34	2.48	**	0.93	0.32	2.53	**
Asian American	-0.47	0.39	0.62		-0.20	0.31	0.82		-0.27	0.43	0.76	
Low SES	1.31	0.28	3.69	***	0.99	0.26	2.68	***	0.32	0.30	1.38	
Family Characteristics												
Parent School Expectation	-1.16	0.18	0.32	***	-0.89	0.17	0.41	***	-0.26	0.13	0.77	*
Family Disruption	1.74	0.29	5.71	***	0.78	0.26	2.18	**	0.96	0.30	2.62	**
Immigrant Status	-1.39	0.35	0.25	***	-0.49	0.28	0.61	+	-0.90	0.38	0.41	*

+ $p<.10$; * $p<.05$; ** $p<.01$; *** $p<.001$

Table 2.2. Descriptive Statistics by Race

	Total N = 338		Caucasian n = 173		African American n = 93		Asian American n = 72		
	% or Mean	(SD)	% or Mean	(SD)	% or Mean	(SD)	% or Mean	(SD)	
Pathway to Adulthood									***
Accelerated Transition	0.26		0.19		0.50		0.14		
Married Mothers	0.30		0.30		0.30		0.31		
Extended Transition	0.44		0.52		0.20		0.56		
Family Socialization	0.02	(0.94)	0.17	(0.87)	0.02	(1.02)	-0.33	(0.95)	**
School Socialization	0.02	(0.88)	-0.06	(0.90)	-0.04	(0.82)	0.28	(0.84)	*
Family Bonding	-0.01	(0.83)	0.03	(0.78)	-0.09	(0.88)	0.08	(0.86)	
School Bonding	0.00	(0.93)	-0.05	0.90	-0.17	1.03	0.33	(0.05)	**
Low SES	0.52		0.31		0.77		0.71		***
Family Characteristics									
Parental Expectations	0.07	(0.95)	0.11	(0.94)	-0.34	1.03	0.50	(0.63)	***
Family Disruption	0.46		0.44		0.69		0.24		***
Immigrant Status	0.28		0.09		0.06		0.99		***

+ $p<.10$; * $p<.05$; ** $p<.01$; *** $p<.001$

Table 2.3. Descriptive Statistics by Socioeconomic Status

	High SES n = 162		Low SES n = 176		
	% or Mean	(SD)	% or Mean	(SD)	
Pathway to Adulthood					***
Accelerated Transition	0.17		0.35		
Married Mothers	0.25		0.35		
Extended Transition	0.59		0.31		
Family Socialization	0.20	(0.87)	-0.14	(0.98)	**
School Socialization	-0.08	(0.93)	0.10	(0.82)	+
Family Bonding	0.09	(0.75)	-0.07	(0.89)	+
School Bonding	-0.03	(0.88)	0.02	(0.99)	
Race					***
Caucasian	0.74		0.30		
African American	0.13		0.41		
Asian American	0.13		0.29		
Family Characteristics					
Parental Expectations	0.33	(0.79)	-0.17	(1.03)	***
Family Disruption	0.38		0.55		**
Immigrant Status	0.22		0.33		*

+ $p<.10$; * p<.05; ** p<.01; *** p<.001

Table 2.4. Accelerated versus Extended Pathway Full Model

			B	(SE)	
African American vs. Caucasian	->	Accelerated v Extended Pathway	1.23	(0.38)	**
Asian American vs. Caucasian	->	Accelerated v Extended Pathway	1.14	(0.79)	
Low SES	->	Accelerated v Extended Pathway	0.59	(0.35)	
Immigrant Status	->	Accelerated v Extended Pathway	-1.54	(0.67)	*
African American vs. Caucasian	->	Family Socialization	-0.02	(0.14)	
Asian American vs. Caucasian	->	Family Socialization	-0.43	(0.14)	*
Low SES	->	Family Socialization	-0.27	(0.12)	*
African American vs. Caucasian	->	School Socialization	-0.03	(0.12)	
Asian American vs. Caucasian	->	School Socialization	0.27	(0.12)	*
Low SES	->	School Socialization	0.11	(0.10)	
African American vs. Caucasian	->	Parent School Expectation	-0.16	(0.14)	
Asian American vs. Caucasian	->	Parent School Expectation	0.62	(0.13)	***
Low SES	->	Parent School Expectation	-0.58	(0.11)	***
Family Socialization	Correlated	Parent School Expectation	0.14	(0.05)	**
African American vs. Caucasian	->	Family Disruption	0.68	(0.29)	*
Asian American vs. Caucasian	->	Family Disruption	-1.26	(0.32)	***
Low SES	->	Family Disruption	0.77	(0.25)	**
Family Socialization	->	Family Bonding	0.55	(0.04)	***
School Socialization	->	School Bonding	0.62	(0.04)	***
Family Socialization	Correlated	School Socialization	0.31	(0.04)	***
Family Bonding	Correlated	School Bonding	0.13	(0.03)	***
Family Socialization	->	Accelerated v Extended Pathway	-0.01	(0.24)	
School Socialization	->	Accelerated v Extended Pathway	0.00	(0.23)	
Family Bonding	->	Accelerated v Extended Pathway	-0.34	(0.27)	
School Bonding	->	Accelerated v Extended Pathway	-0.04	(0.23)	
Parent School Expectation	->	Accelerated v Extended Pathway	-0.89	(0.19)	***
Family Disruption	->	Accelerated v Extended Pathway	1.35	(0.33)	***

* p<.05; ** p<.01; *** p<.001

Table 2.5. Traditional versus Extended Pathway Full Model

			B	(SE)	
African American vs. Caucasian	->	Traditional vs. Extended Pathway	0.37	(0.39)	
Asian American vs. Caucasian	->	Traditional vs. Extended Pathway	0.25	(0.61)	
Low SES	->	Traditional vs. Extended Pathway	0.72	(0.32)	*
Immigrant Status	->	Traditional vs. Extended Pathway	-0.45	(0.50)	
African American vs. Caucasian	->	Family Socialization	-0.02	(0.14)	
Asian American vs. Caucasian	->	Family Socialization	-0.43	(0.14)	*
Low SES	->	Family Socialization	-0.27	(0.12)	*
African American vs. Caucasian	->	School Socialization	-0.03	(0.12)	
Asian American vs. Caucasian	->	School Socialization	0.27	(0.12)	*
Low SES	->	School Socialization	0.11	(0.10)	
African American vs. Caucasian	->	Parent School Expectation	-0.16	(0.14)	
Asian American vs. Caucasian	->	Parent School Expectation	0.62	(0.13)	***
Low SES	->	Parent School Expectation	-0.58	(0.11)	***
Family Socialization	Correlated	Parent School Expectation	0.14	(0.05)	**
African American vs. Caucasian	->	Family Disruption	0.68	(0.29)	*
Asian American vs. Caucasian	->	Family Disruption	-1.26	(0.32)	***
Low SES	->	Family Disruption	0.77	(0.25)	**
Family Socialization	->	Family Bonding	0.55	(0.04)	***
School Socialization	->	School Bonding	0.62	(0.04)	***
Family Socialization	Correlated	School Socialization	0.31	(0.04)	***
Family Bonding	Correlated	School Bonding	0.13	(0.03)	***
Family Bonding	->	Traditional vs. Extended Pathway	-0.21	(0.25)	
School Bonding	->	Traditional vs. Extended Pathway	-0.11	(0.21)	
Family Socialization	->	Traditional vs. Extended Pathway	0.06	(0.22)	
School Socialization	->	Traditional vs. Extended Pathway	0.19	(0.20)	
Parent School Expectation	->	Traditional vs. Extended Pathway	-0.75	(0.19)	***
Family Disruption	->	Traditional vs. Extended Pathway	0.52	(0.28)	

* p<.05; ** p<.01; *** p<.001

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CHAPTER 3: LABELING AND THE EFFECT OF ADOLESCENT LEGAL SYSTEM INVOLVEMENT ON ADULT OUTCOMES

Introduction

Almost 28,000 youth emancipated from the foster care system in fiscal year 2010 (Children's Bureau, 2011), and many of these former foster youth are vulnerable during the transition to adulthood. Many of these youths have limited human capital, and few are able to continue to acquire human capital during the transition to adulthood. For example, over 33% of 19-year-old former foster youth from a sample of Midwest former foster youth did not have a high school diploma or equivalency, but by age 25 or 26, 20% still did not have a high school diploma or equivalency, and only 8% had a postsecondary degree (Courtney et al., 2011; Courtney et al., 2005). Former foster youth typically lack the material and other support provided by families during the transition to adulthood (Schoeni & Ross, 2005). Studies have documented a range of negative outcomes for these youth during the transition to adulthood period, including limited educational attainment, limited employment experiences, substance use and abuse, homelessness, economic instability and involvement in criminal activities (Barth, 1990; Berzin, 2008; Blome, 1997; Collins, 2001; Courtney et al., 2011; Courtney et al., 2007; Courtney, Dworsky, Lee, & Raap, 2010; Courtney & Heuring, 2005; Foster & Gifford, 2005; Reilly, 2003). Criminal involvement during the transition to adulthood period can impact and be impacted by the key transitions into adulthood, such as working, marriage, and parenting. A criminal record can have a lasting, negative impact on the lives of these youths (Rumbaut, 2005), while the transitions into work, marriage, and parenting have been associated with derailing

previously negative trajectories (Crutchfield & Pitchford, 1997; Kreager, Matsueda, & Erosheva, 2010; Sampson & Laub, 1990).

Foster youth placed in care experience risk factors that are also associated with criminal outcomes. For example, histories of maltreatment are associated with later delinquency and legal system involvement (Maxfield & Widom, 1996; Smith & Thornberry, 1995; Widom, 1991). Furthermore, there is evidence that child welfare involvement is associated with higher risk of juvenile justice system penetration (Fader, Harris, Jones, & Poulin, 2001; Ryan, Herz, Hernandez, & Marshall, 2007), and among former foster youth, prior arrests are strongly associated with later criminal justice system involvement (Lee, Courtney, & Hook, 2012). Foster youth aging out of care report high levels of engagement in delinquent behavior and legal system involvement as a juvenile which have accumulated throughout their lives, and are at high risk for continued engagement in criminal activities and legal system involvement as adults (Barth, 1990; Courtney & Dworsky, 2006; Courtney et al., 2011; Reilly, 2003; Southerland, Casanueva, & Ringeisen, 2009; Vaughn, Shook, & McMillen, 2008).

Foster youth who are aging out of care are at a critical crossroads in their lives as they are transitioning out of care and into adulthood simultaneously. These foster youth are making choices about their adult commitments for the first time, which may have consequences that affect the rest of their lives. The transition to adulthood has been characterized as a period of freedom from social norms and obligations to allow individuals the opportunity to explore possibilities before making long-term commitments (Arnett, 2006), although this latitude may also heighten the risk of engagement in criminal behaviors for some youth. This study seeks to learn whether foster youth experience higher rates of legal system involvement as a juvenile in comparison to their non-foster peers, and how this may increase their risk for engaging in

criminal activities during the transition to adulthood. This study also attempts to estimate the difference in rates of legal system involvement as a juvenile between foster youth preparing to age out of care and non-foster youth with a comparable array of risk factors. In addition, this study seeks to understand whether there is a relationship between higher levels of legal system involvement as a juvenile and higher levels of engagement in later adult criminal behaviors among foster youth who have aged out of care as is hypothesized by labeling theory.

Legal System Involvement among Foster Care Youth

There is a growing body of work focused on youth who are involved in both the child welfare and juvenile justice systems (Bender, 2010; Chiu, Ryan, & Herz, 2011; Jonson-Reid & Barth, 2000; Ryan & Testa, 2005; Yampolskaya, Armstrong, & McNeish, 2011). Studies indicate that there is a disproportionate percentage of foster youth in the juvenile justice system (Herz, Ryan, & Bilcik, 2010; Ross, Conger, & Armstrong, 2002; Ryan et al., 2007). In a study using juvenile justice data from New York City, Ross et al. (2002) reported that although foster youth were detained at a higher rate than those not involved in the foster care system, there was no evidence that the foster youth committed more crimes or more severe crimes, two potential explanations for the higher rates of detention of foster youth. Ross and colleagues identified the source of the disproportionality as stemming from a lack of communication between child welfare and juvenile justice workers and a lack of understanding of each others' system, citing examples where foster care staff were not aware that the youth had been arrested or did not realize their responsibility to appear in court, while legal staff often did not know how to locate the youth's case worker.

Ryan and colleagues (2007) merged child welfare and juvenile justice data in Los Angeles County to explore whether child welfare involvement is related to disposition decisions in the

juvenile justice system. They included all first time offenders between 2002 and 2005, and used propensity score matching to create two samples of youth: child welfare involved, and a matched sample of non-child welfare involved youth. They estimated models in two phases, one examining the likelihood of case dismissal, and the second examining the likelihood of probation after excluding cases that were dismissed. Although they did not find that child welfare status was related to case dismissal, among those who did not have a case dismissal, they found that youth involved in the child welfare system were more likely than non-child welfare involved youth to be placed into a group home supervised by probation or placed in a juvenile justice facility than simply receiving a probation disposition.

In contrast to these studies focused on youth involved in both the child welfare and juvenile justice systems, Berzin (2008) did not find higher rates of arrests and incarceration when comparing foster youth to a matched group of non-foster youth, although some matching schemes did produce significant differences. Berzin (2008) conducted propensity score matching and other similar matching techniques to compare foster youth to a group of non-foster youth who would be comparable on a range of risk factors for child welfare involvement except for their child welfare involvement. She concluded that the array of risk factors that preceded child welfare placement contributed similarly to negative adult outcomes for both groups of youth. However, although she used an array of pre-placement measures including child, family, and community risk factors, she failed to include reported maltreatment experiences among the youth. In addition, the exclusion of institutionalized youth from the study sample limited her measure of foster youth. Finally, she did not take into account self-reported criminal behaviors.

The increased rate of penetration into the juvenile justice system by child welfare involved individuals compared to non-child welfare children and youth is consistent with the ideological

underpinnings of the juvenile justice system. The juvenile justice system was designed to consider the youth's social circumstances more strongly than the youth's guilt (Feld, 1999), and factors such as child and family functioning are considered "paramount" in helping authorities make decisions in the best interest of the child (Fader et al., 2001; Gebo, 2002). In fact, Fader et al. (2001) examined administrative data in Philadelphia to identify the factors that influenced decisions to commit juvenile offenders, using only information that would have been available to judges. They found that a history of being referred to the child welfare system was an important factor in determining whether an individual was detained in many decisions, and the most important factor for decisions about first time offenders with a history of drug use (Fader et al., 2001).

Criminal Behaviors in Adulthood

The high rates of legal system involvement as a juvenile and later adult criminal behavior among foster youth who have aged out of care may be related to the chronic risk factors for criminal outcomes present for many foster youth, including family conflict (Ciaravolo, 2011), histories of maltreatment (Maxfield & Widom, 1996; Smith & Thornberry, 1995; Widom, 1996), a history of mental health or substance abuse (Bender, 2010; Maschi, Hatcher, Schwalbe, & Rosato, 2008), low academic achievement or trouble in school (Bender, 2010; Blomberg, Bales, Mann, Piquero, & Berk, 2011; Maschi et al., 2008), or may be related to experiences within the child welfare system such as placement instability and placement type (Jonson-Reid & Barth, 2000; Ryan, Marshall, Herz, & Hernandez, 2008; Ryan & Testa, 2005). However, in addition to these risk factors for later adult criminal behaviors, legal system involvement as a juvenile may also be an independent risk factor for later criminal behavior. Labeling theory makes two general claims: 1) those more likely to be labeled are "those with less power and prestige"

(Paternoster & Iovanni, 1989, p. 364); and 2) the experience of these labels leads to future deviant behavior (Bernburg, 2009). Although there is evidence for the relationship between a label and later deviance generally (Huizinga, Schumann, Ehret, & Elliott, 2004; McAra &McVie, 2005, 2007), and more specifically between legal system involvement as a juvenile and later adult criminal outcomes (Bernburg & Krohn, 2003; Gatti, Tremblay, & Vitaro, 2009), to my knowledge labeling theory has not been tested within a sample of foster youth.

Early labeling theorists focused on describing the psychological process that may result from the application of the label, whereby an individual begins to reorganize their identity in response to societal labels, ultimately resulting in subsequent deviance (Becker, 1963; Lemert, 1951; Tannenbaum, 1938). Repeated applications of a label over time were believed to result in changes to the individual's self-identity and/or development of a deviant identity or self-concept (Bernburg, 2009; Lemert, 1951).

More recently, theorists have articulated a second process that may be initiated by the application of a label, that of social exclusion (Bernburg, 2009; Paternoster & Iovanni, 1989; Sampson & Laub, 1997). The label is believed to be tied to structural mechanisms, whereby a labeled deviant or criminal might be excluded from conventional opportunities such as limited educational attainment and restricted employment prospects (Paternoster & Iovanni, 1989; Sampson & Laub, 1997). This process of social exclusion also encompasses the potential stigmatization an individual may experience in their daily lives and the individual's consequent withdrawal from conventional society (Bernburg, 2009). In this sense, the label may initiate a process that weakens the individual's bond to society (Sampson & Laub, 1997), such as an ex-felon who loses the right to vote and faces limited job opportunities. Both internal and external processes are also tied to increased association with deviant peers, which may also increase the

likelihood of future criminal activity (Bernburg, 2009; Paternoster & Iovanni, 1989). Although

limited attention has been paid to testing these three intermediary processes, there has been some

evidence supporting the internal process (Matsueda, 1992), the social exclusionary process

(Bernburg & Krohn, 2003; Sampson & Laub, 1997), and association with deviant peers

(Bernburg, Krohn, & Rivera, 2006), as well as all three processes simultaneously (Ciaravolo,

2011).

Labeling theorists argue that the effect of a label is likely to vary with an individual's

social location, although there is no clear consensus about whether the effect will be stronger or

weaker among the socially disadvantaged (Bernburg, 2009; Paternoster & Iovanni, 1989). The

labeling effect is believed to be stronger when it initiates stigmatizing reactions from others in

the lives of the individual, and may be more likely to be embraced by others if the individual is

already perceived as "different" (Bernburg, 2009). Although the research is limited, there is

some evidence to support this hypothesis that the effect of labeling in the form of juvenile justice

intervention on later adult crime is larger for young men from families in poverty and African

American young men (Bernburg & Krohn, 2003). Among foster youth aging out of care, the

effect of juvenile justice involvement may be larger if they are already stigmatized, whether it is

because their family has already been labeled deviant, or whether they themselves are perceived

as deviant for their status as a foster youth. For example, higher levels of family conflict have

been found to be associated with a labeling effect twice that of those without family conflict

(Ciaravolo, 2011). Moreover, for a child who is being raised in state care, legal system

involvement necessarily becomes part of their case files and known to the multiple staff in their

lives, thus becoming "public" to a group of important others. In contrast, a non-foster youth

being raised by their family may be better able to keep the label private and prevent the legal

system involvement from becoming generally known. For foster youth, this may create multiple and ongoing experiences of the label from various child welfare and juvenile justice representatives, increasing the likelihood of later criminal behavior.

The alternative hypothesis for socially disadvantaged individuals is that the labeling effect will be smaller for those who are disadvantaged, since they may already be stigmatized; a negative label may have more of an impact on an individual who is advantaged, since the individual may have greater investment in maintaining a positive reputation (Bernburg, 2009). For example, racial minorities often experience stigmatization before becoming formally labeled by the legal system, and in support of this hypothesis, there has been evidence that individuals who are white experience a greater labeling effect of legal system involvement than individuals who are African American (Chiricos, Barrick, Bales, & Bontrager, 2007; Ciaravolo, 2011), although there has also been evidence that the effect is stronger among young men who are African American (Bernburg & Krohn, 2003). Similarly, for foster youth who are aging out of care, the process of social exclusion may have already begun. Their families may already have experienced some form of exclusion, since families who are chronically involved in the child welfare system often become disconnected from formal institutions and rely more heavily on the informal networks in their lives (Mitchell & Campbell, 2011). Moreover, former foster youth report limited educational and employment experiences as they age out of care (Courtney et al., 2010; Pecora et al., 2006; Reilly, 2003), and thus the process of exclusion that a label is hypothesized to initiate already may have begun with the individual's involvement with the foster care system.

The Current Study

This study seeks to estimate the difference in rates of legal system involvement as a juvenile between a sample of foster youth preparing to age out of care and a matched sample of youth from a nationally representative sample. Furthermore, this study provides a test of labeling theory hypothesis that prior arrests, incarceration and convictions are associated with an increased likelihood of engagement in criminal behaviors in adulthood with a sample of foster youth as they are aging out of care and transitioning to adulthood, providing a test of the theory with a new, high-risk sample and spanning developmental periods. This study asks the following questions:

1. Is there a higher prevalence of legal system involvement as a juvenile among foster youth who are in preparation to leave care, in comparison to a matched sample of their non-foster peers from the general population?

2. Among foster youth aging out of care, is legal system involvement as a juvenile associated with increased criminal behaviors in adulthood, even when taking into account prior delinquent behaviors?

3. If there is a relationship between legal system involvement as a juvenile and increased self-reported criminal behaviors in adulthood among foster youth aging out of care, is this relationship mediated by bonds to social institutions, namely education, employment, and parenthood?

First, I hypothesize that foster youth will report higher levels of legal system involvement as a juvenile in comparison to their non-foster peers, taking into account a comparable array of risk factors for child welfare involvement. Second, I hypothesize that there will be a labeling

effect of legal system involvement as a juvenile among foster youth who are aging out of care, leading to increased criminal behaviors as an adult. Third, in testing the intermediary process of social exclusion, I hypothesize that bonds to social institutions will only have a limited or no mediating role between legal system involvement and later criminal behaviors, since the labeling effect is likely to have been initiated prior to legal system involvement for foster youth.

Separate measures of delinquency and legal system involvement (e.g., arrests, incarceration, convictions) are included in the analyses. Much of the work looking at relationships between maltreatment, child welfare involvement, and criminal outcomes are interested broadly in criminal outcomes and primarily operationalize their outcome with the use of administrative data on arrests or other forms of legal system involvement (Herz et al., 2010; Jonson-Reid, 2002; Jonson-Reid & Barth, 2000; Ryan et al., 2008; Ryan & Testa, 2005; Yampolskaya et al., 2011). However, delinquency/criminal activities and legal system involvement may each contribute uniquely to the relationships being tested. While delinquent behavior reflects the actions of an individual, referred to as "behaviors of individuals," systemic biases may be captured within legal system involvement, referred to as "the behavior of law" (Uggen & Kruttschnitt, 1998). For example, an individual living in a more disadvantaged and heavily policed neighborhood could be more likely to be arrested for a given delinquent act in comparison to an individual perpetrating the same act but living in a less heavily policed neighborhood (Sampson, 1986). Furthermore, individuals may be arrested for crimes they did not commit. Thus, in contrast to prior studies that use a single measure for criminal outcomes, both measures are included in this study in order to better understand how delinquency and legal system involvement may differentially influence the processes being tested.

Method

Sample

This study uses survey data from the Evaluation of the Adult Functioning of Former Foster Youth (Midwest Study), a prospective study that sampled 732 youth from Illinois, Iowa and Wisconsin as they were preparing to leave the foster care system. The Midwest Study drew a random sample of two-thirds of youth from Illinois and all eligible youth from Wisconsin and Iowa who had been in the foster care system for at least a year, and were age 17 and thus preparing to transition to independence. After the initial interview, participants were re-interviewed every two years up through the age of 25 with an over 80% retention rate at each interview. Youth were asked questions about a range of topics, including pre-foster care experiences of abuse and neglect, foster care experiences, and outcomes including education, employment, general health, parenting, and delinquency and legal system involvement. This study uses interviews from waves 1-4; the first wave of interviews was conducted between May 2002 and March 2003 when participants were 17-18 years old, and the fourth wave of interviews was conducted in July 2008-April 2009 when participants were 23-24 years old.

While data from the Midwest Study were used to answer all three research questions, data from the National Longitudinal Study of Adolescent Health (Add Health) were used for the propensity score analysis conducted to answer research question 1 by estimating differences in the rates of legal system involvement as a juvenile for foster care compared to non-foster care youth. Add Health provided a general population sample of potential matches for the former foster youth in the Midwest Study, since many questions, including the delinquency items, were asked in both studies. Add Health is a nationally representative sample of adolescents in grades 7-12 who were sampled during the 1994-1995 school year. There are four waves of Add Health

interviews, but the third wave of data, collected when participants were ages 18-26 in July 2001-April 2002, was used as the comparison group to the wave 1 Midwest Study interviews. Data from the in-home interviews were used for this study, which covered a range of topics including childhood maltreatment and outcomes including education, employment, general health, parenting, and delinquency and legal system involvement.

Measures

Self-reported criminal behaviors: The Midwest Study and Add Health asked about a set of delinquent/criminal behaviors at each interview. A delinquency variable was created from the items in the baseline interview, and considered for balance, or comparability between groups, in evaluating the propensity score matching technique, which was used to answer question 1. At the baseline interview, nine questions were asked about the frequency of engagement in delinquent behaviors in the last 12 months: 1) damaged property that didn't belong to the participant, 2) stole something worth more than $50, 3) went into a house or building to steal something, 4) used a weapon to get something, 5) sold marijuana or other drugs, 6) stole something less than $50, 7) took part in a gang fight, 8) pulled a knife or gun on someone, and 9) shot or stabbed someone. Participants were given four response categories: 0=never, 1=1 or 2 times, 2=3 or 4 times, and 3=5 or more times. These nine questions were summed for a baseline measure of delinquency (α=.727).

The engagement in criminal activities variables used as the outcome for the multivariate regression models to answer questions 2 and 3 were constructed from 17 questions in the adult interviews at waves 3 and 4, when participants were 21 and 23 or 24 years old. Participants were asked about the frequency of engagement in criminal behaviors in the last 12 months. In addition to the 9 questions used at baseline, eight additional questions were asked about the

frequency with which they: 1) hurt someone badly enough that they needed medical care, 2) carried a weapon to school, 3) bought, sold, or held stolen property, 4) used someone else's credit card, bankcard, or ATM card without their permission or knowledge, 5) deliberately wrote a bad check, 6) used a weapon in a fight, 7) belonged to a named gang, and 8) took part in a physical fight in which you were so badly injured you were treated by a doctor or nurse. These 17 questions were used to create a composite variable of both the number of types of acts engaged in, as well as frequency of engagement in those acts (α=.775- .828). The distributions for these two variables approximated a count distribution.

Juvenile/criminal justice system involvement: Legal system involvement as a juvenile was measured based on self-reported arrests and convictions in the propensity model used to answer question 1. For arrests, Midwest Study participants, who were 17 or 18 years at the time of the interview, were asked whether they had ever been arrested while Add Health participants, who were all over 18 years, were asked how many times they were arrested before age 18. For convictions, Midwest Study participants were asked if they had ever been convicted while Add Health participants were asked if they had ever been convicted or pled guilty to a juvenile crime. Two dichotomous variables were created for arrests and convictions, where 1=yes and 0=no, in order to estimate arrest and conviction rates for the foster care and comparably high-risk non-foster care youth.

For the multivariate regression models estimated to answer question 2 and question 3, a dichotomous variable (1=yes, 0=no) was created to indicate whether the Midwest Study youth reported that they had been arrested, incarcerated, or convicted prior to the first interview. This baseline measure was included in all models, and is referred to as *legal system involvement as a juvenile*.

Risk factors included in the propensity score model (Q1): Variables that could be ascertained to precede placement in the foster care system with relative certainty, and that were associated with risk of child welfare placement, were used to estimate the propensity score. *Gender*, coded as male or female, and *race*, coded as white, black, and other race (including Asian, Hispanic, Native, and other) were demographic variables included in the propensity score model. Three measures of child maltreatment were also included in the propensity score model. Three separate dichotomous variables were created: *neglect, physical abuse,* and *sexual abuse.* Neglect was based on whether the participant reported that their parents or caretaker had failed to provide them with their basic needs, including food and clothing. Physical abuse was based on whether the participant reported that their caretaker had slapped, kicked or hit them. For sexual abuse, Add Health participants were asked if their caretaker had touched them in a sexual way or forced sexual relations, whereas for the Midwest Study participants, they were asked if they had been sexually molested or forced to have sexual intercourse, although the perpetrator was not identified. *Born in the U.S.* was also included in the propensity score model. Parental citizenship has been identified as a risk factor for placement in the foster care system (Berzin, 2008), but since this was not available in both datasets, whether the child was born in the U.S. was included as a proxy. *Caregiver with a criminal record* was also inspected for balance, or comparability between groups, although not included in the final propensity score model due to the inconsistency between studies. In the Midwest Study, participants were asked if their caregiver had a criminal record, while in Add Health, participants were asked if their biological father had ever served time in jail or prison.

Control variables for the multivariate models (Q2 & Q3): In the models for adult criminal activities among former foster youth, demographic variables (sex and race) were included, as

were state indicators, whether the youth was from Illinois, Wisconsin, or Iowa. Scores on the Wide Range Achievement Test (*WRAT*) were also included as a measure of academic aptitude, as well as early risk factors. These early risk factors include a measure of *family conflict*, which was based on whether the participant said that their caregiver had issues with domestic violence (yes or no), and their histories of maltreatment (neglect, physical abuse, or sexual abuse), both of which were measured at baseline. In addition, two measure of mental well-being measured at baseline were included: a dichotomous measure of symptoms of *posttraumatic stress syndrome (PTSD) or depression* and a dichotomous measure of symptoms of *alcohol or substance use or abuse*.

Two measures of child welfare experience, measured at baseline, were also included in the models: *number of placements*, and *last placement at baseline*. The last placement at baseline is a categorical variable with four categories: foster family with or without relatives and adoption, group home, independent living, or other. The first category, foster family with or without relatives, was collapsed after the coefficient for foster family with relatives was not significant in reference to foster family without relatives.

Four dichotomous items were included that measured an individual's conventional opportunities and/or bonds to society. These included *educational attainment*, a dichotomous measure that either indicated less than a high school degree or at least a high school diploma or equivalence; *school enrollment*, a measure that indicated whether they were enrolled in a school or vocational training program at the time of the interview; *employment status*, a measure that indicated whether they were employed at the time of the interview; and *parenthood*, a measure that indicated whether they had a child at baseline or whether they had a child living with them

in subsequent interviews. These last three variables were dichotomous variables where 1=yes and 0=no, and were measured at Waves 1, 2 and 3, when participants were ages 17, 19 and 21.

Two interaction terms were also included in the models to test the potential moderating effect of gender on legal system involvement as a juvenile and self-reported delinquency at baseline. See Table 3.1 for a summary of the descriptive statistics.

Analyses

In order to consider whether foster care involvement is associated with increased criminal justice involvement among foster youth (Q1), propensity score matching techniques were used to estimate the difference in arrest and conviction rates between youth in the Midwest Study and a comparable group of their peers without foster care involvement in Add Health. The Midwest Study is drawn from a sample of Midwestern foster youth who are preparing to age out of care, while Add Health is a nationally representative sample of the general adolescent population. Differences between these two study populations that existed prior to foster care placement are likely to be related to later differences in arrest and conviction rates. Matching techniques can address these differences, but become difficult when attempting to take into account multiple dimensions. Propensity scores, the conditional probability of being in foster care, are a single summary measure based on the set of observed risk factors for placement in foster care, and matching based on this single quantity can produce unbiased causal estimates (Thoemmes & Kim, 2011). Propensity scores are estimated with a logit or probit or similar type multivariate regression model, and several matching techniques can be used to construct a control group (Thoemmes & Kim, 2011). After constructing a control group, differences are estimated based on group averages.

For this study, several exclusions were applied to the Add Health sample in order to increase comparability between the two studies. Only Add Health participants who lived in the Midwest were included, although this included more states than the Midwest Study; Hill and colleagues (2004) demonstrates the importance of taking into account geographic location in improving estimates. Add Health also consists of a larger age range of participants, so only those who were between the ages of 18- 22 were included in the pool of potential matches for the Midwest Study youth, who were 17-18 years old. Further restricting the age of Add Health participants would have reduced the number of potential matches with youth in the Midwest Study, which is already limited, as is illustrated below. Additionally, Add Health youth who reported that they had been removed from their home by child protective services before 6th grade or reported that they had ever lived in a foster home were excluded. This ultimately yielded 1,990 potential Add Health cases that could be matched with the 732 cases in the Midwest Study.

Analyses for the propensity score model (Q1) were conducted in Stata 12.1 (StataCorp, 2009). Propensity scores were estimated using PSCORE and PSMATCH2 v. 4.04. Demographic variables, including gender and race, as well as histories of neglect, physical abuse, sexual abuse, and born in the U.S., as well as a variety of interaction terms as is suggested by Dehejia (2004), were considered as pre-placement risk factors that were available in both datasets. Participants from both studies were matched using 1:1 nearest neighbor (i.e., matching to the next case with the same or closest propensity score) with replacement (i.e., an Add Health participant can be matched multiple times), and differences in rates for arrests and convictions between the matched groups are reported. Only those who fell within the common support area, or in other words, only participants from the Midwest Study who fell within the range of

propensity scores for Add Health participants were included. As a result, 22 cases from the Midwest Study were dropped since they fell outside the range of common support.

Analyses for the multivariate and path models (Q2 & Q3) were conducted in MPlus 6.12 (Muthén& Muthén, 1998-2010). Maximum likelihood robust estimators were used in all models, in order to take into account the non-normality of the outcome variables. In order to consider how system involvement is related to future criminal adult behaviors (Q2), two negative binomial regression models were estimated using only the Midwest Study youth. Self-reported engagement in criminal activities at ages 21 and 23 or 24 were regressed on legal system involvement as a juvenile, while controlling for earlier self-reported delinquency or criminal activities. Since the two criminal activities variables have a count distribution, negative binomial models were estimated. The Poisson model is a special case of the negative binomial model; while Poisson assumes that the mean equals the variance, the negative binomial model estimates an additional dispersion parameter that does not impose this constraint (Long, 1997). The Poisson model is the case where the dispersion parameter equals zero. In all estimated models, the dispersion parameter was statistically significant, indicating that the negative binomial was the appropriate choice. When exponentiated, the coefficients in a negative binomial regression model are incidence rate ratios, and similar to an odds ratio in the case of logistic regression, can be interpreted as the likelihood of the incidence of an event. Key variables related to the study questions were included in the models. Other variables, such as symptoms of depression or PTSD, were included in the models based on whether model fit indices indicated improved fit. Model fit was evaluated using the Akaike information criterion (AIC) and the Bayesian information criterion (BIC), which compares estimated model values to actual values (Agresti, 2002). Although both provide similar information, the BIC adds a penalty for additional

parameters, thus favoring more parsimonious models. In addition, the Wald chi-square test was used to compare nested models, more specifically, to evaluate the impact on model fit statistics of adding the four conventional opportunities variables to the model.

In order to test whether the relationship between legal system involvement as a juvenile and later criminal activities is mediated by conventional opportunities and/or bonds to society (i.e., school enrollment, educational attainment, employment status, and parenthood), a structural model was estimated (Q3), including the models used to answer Q2 where criminal activities at ages 21 and 23 or 24 were regressed on conventional opportunities at the prior interview (i.e., ages 19 and 21) and legal system involvement as a juvenile. Mediating pathways were modeled by regressing school enrollment, educational attainment (no attainment of a high school diploma versus at least a high school diploma or equivalence), employment status, and parenthood on legal system involvement as a juvenile while controlling for delinquency. Since these four outcomes were dichotomous variables, logistic regression was used to model these mediating models. Covariance between baseline delinquency and legal system involvement as a juvenile, as well as school enrollment and the lack of a high school diploma or equivalency at age 19 were estimated in the models. Since engagement in criminal activities has a count distribution, model fit was evaluated with the AIC and BIC. Direct, indirect, and total pathways between adult criminal activities and legal system involvement as a juvenile through the four conventional opportunities variables were calculated.

For the propensity score model (Q1), listwise deletion was used to address missing data. Overall, 5.7% of Midwest Study cases and 4.4% of Add Health cases were missing values. There were no significant differences in racial composition for those with missing data in comparison to complete cases, but more males than females were missing values ($\chi^2(1) = 6.816$,

p<.01). For the multivariate and path models (Q2 & Q3), multiple imputation was used to address missing values. Multiple imputation in MPlus uses Bayesian estimation using available information in the variables included and considered in the model, as well as additional auxiliary variables (age, born in the U.S., emotional or psychological counseling, and substance abuse treatment) to produce 50 imputed datasets (Muthén & Muthén, 1998-2010). Models were estimated for all 50 datasets using maximum likelihood estimators and averaged across datasets, and standard errors were calculated using the Rubin formula (Muthén & Muthén, 1998-2010).

Results

Propensity Score Matching (Q1)

As a conditional probability, propensity scores can take on any value between 0-1; the identified areas of common support were 0.035 and 0.999, thus covering most of the possible range of values. Figure 3.1 shows the propensity scores for all cases along the x-axis, ranging from 0-1, and the frequency of Midwest Study youth above and Add Health youth below the x-axis. While this was a large range of common support, this figure illustrates that the Midwest Study youth are spread out along the spectrum of propensity scores while the Add Health youth are largely scattered at the lower-end of the spectrum. On support refers to the Midwest Study youth for whom there are Add Health youth with comparable propensity scores, while off support refers to the Midwest Study youth for whom there are no comparable Add Health youth.

It is apparent from Figure 3.1 that there are few Add Health youth to match with Midwest Study youth above a propensity score of about 0.5. Thus, matching with replacement is the preferred option for reducing bias (Dehejia & Wahba, 2002). This allows for Add Health participants to be used multiple times. Using this procedure, only 31 cases from the Add Health dataset were matched to the 667 cases from the Midwest Study. Although this produces the least

biased estimate, standard errors will be incorrect since the calculated means for each treatment unit are not independent of each other. Thus, bootstrapped standard errors were estimated and reported in Table 3.2, along with the arrest and conviction rates for the foster and non-foster youth.

Table 3.3 presents the pre- and post-matching values between the groups on key variables, including caregiver with a criminal record and self-reported delinquency, which were not included in the model. For the variables included in the propensity score model, there was a reduction in bias for almost all the variables, and any pre-treatment differences were no longer present. Table 3.2 shows arrest and conviction rates for foster youth and their matched, non-foster peers. Of the foster youth, 51.0% report that they had been arrested, and 21.1% reported that they had been convicted. In comparison, only 11.7% of the matched non-foster youth reported that they had been arrested, and none of the non-foster youth reported that they had been convicted. Using bootstrapped standard errors, differences in arrests and convictions were significant (t=5.78 and 3.91). Although the bias in baseline delinquency was reduced by 79.9% in the matched sample (see Table 3.2), large differences in legal system involvement persist.

Adult Criminal Behaviors (Q2)

Although the youth who reported legal system involvement as a juvenile reported higher levels of adult criminal activities at age 21, $M_{legalsystem}=2.05$ vs. $M_{nolegalsystem}=0.87$, $t(503)=3.96$, $p<.001$, and at age 23 or 24, $M_{legalsystem}=1.71$ vs. $M_{nolegalsystem}=.84$, $t(587)=3.61$, $p=.0002$, this relationship does not persist when controlling for other variables. Tables 3.4 and 3.5 present stepwise results for the negative binomial multivariate models estimated for criminal activities at age 21 (Table 3.4) and age 23 or 24 (Table 3.5).

At age 21 (see Table 3.4), the coefficient for legal system involvement was significant (B = .380, $p<.05$) in the base model which includes legal system involvement and self-reported delinquency at baseline only. Although this coefficient does not remain significant with the addition of covariates, the coefficient was positive, suggesting a positive relationship with later adult criminal activities. The coefficients for self-reported delinquency at baseline, being male, a history of neglect, a history of sexual abuse, and more foster care placements all had a positive and significant relationship with later adult criminal activity. The interaction term between men and delinquency was significant, indicating that the relationship between delinquency and engagement in criminal activities at age 21 is slightly smaller for men (B = -.075, $p<.05$), but men start at a higher level of overall criminal activities than women as indicated by the coefficient for men (B = .889, $p<.001$).

Of the four variables measuring conventional opportunities (employment status, school enrollment, educational attainment, and parenthood), only the coefficient for educational attainment (no high school diploma or equivalency) was significant (B = .393, $p<.01$), where the lack of a high school diploma or equivalency was associated with an increased likelihood of later engagement in criminal activities. The Wald Test comparing model fit for nested models, where the model that estimates the four coefficients is compared to the model where they are not estimated, was statistically significant, $\chi^2(4)=11.059$, $p<.05$, indicating improved model fit with the addition of these variables. In addition, the coefficient for legal system involvement as a juvenile, although not statistically significant, shrinks from 0.043 to -0.009 after adding these four variables.

At ages 23 or 24 (see Table 3.5), legal system involvement as a juvenile was not statistically significant in the base model. Prior delinquency (reported at baseline) and criminal

activities (reported at age 21) both had a positive and significant relationship with later criminal activities (reported at ages 23 or 24), as does being male and being in the racial category "Other" (Asian, Hispanic, Native, and other), as compared to Caucasian youth. In addition, family conflict (measured as caregiver domestic violence) and more foster care placements were also associated with an increased likelihood of later engagement in criminal activities.

The interaction term between men and legal system involvement as a juvenile was statistically significant. The relationship between legal system involvement as a juvenile and later criminal activities was positive for women (B=.334), but negative for men (B=.334-.767=-.433), indicating a difference in the relationship for men and women. Although the coefficient for legal system involvement as a juvenile was not significant, the difference in the relationship for men and women is significant. This may suggest that while women may experience a labeling effect, where legal system involvement as a juvenile is related to *higher* levels of criminal activity at age 23 or 24, men experience a deterrence effect where legal system involvement as a juvenile is related to *lower* levels of criminal activity at age 23 or 24.

Of the four variables measuring conventional opportunities (employment status, school enrollment, educational attainment, and parenthood), none of the coefficients were statistically significant, although the coefficient for employment was marginally significant (B = -.275, $p<.10$). The Wald Test comparing model fit between the model that estimates coefficients for these four variables and the model that does not, was not significant, indicating that the more parsimonious model, where these coefficients were not estimated, provides comparable fit.

Mediation Models (Q3)

Table 3.6 presents the results for the models where the four conventional opportunities/social bond variables at age 19 were regressed on legal system involvement as a

juvenile. Legal system involvement as a juvenile was associated with a lower odds (OR = 0.578) of employment and over twice the likelihood (OR = 2.378) of not having a high school diploma or equivalency by age 19, but does not appear to be associated with school enrollment or parenthood (see Figure 3.2). Self-reported delinquency at baseline did not have a significant relationship with conventional opportunities (education or employment), although delinquency was associated with a higher likelihood (OR = 1.113) of parenthood at age 19.

The relationship between not having a high school diploma or equivalency and criminal activities at age 21 continues to be significant in this mediation model, so that an individual without a high school diploma or equivalency was more likely (IRR = 1.488) to report criminal activities at age 21. The coefficients for the other three conventional opportunities/bonds to society variables were not significant.

Table 3.7 shows the results where the four conventional opportunities/bonds to society at age 21 were separately regressed on legal system involvement as a juvenile. Legal system involvement as a juvenile was associated with a lower likelihood (OR = .554) of being enrolled in school at age 21. In considering the indirect relationship between legal system involvement as a juvenile and employment at age 21 via the two educational variables at age 19, school enrollment was associated with a higher likelihood (OR = 1.692) of employment at age 21, and not having a high school diploma or equivalency was associated with a lower likelihood (OR = .385) of employment at age 21. As mentioned above, legal system involvement as a juvenile was positively associated with the likelihood of not having a high school diploma or equivalency at age 19.

Looking at the relationship between criminal activities at age 23 or 24 and the four conventional opportunities/bonds to society variables at age 21, only the coefficient for

employment was marginally significant (IRR = .763). None of the other variables were significantly related to criminal activities at age 23 or 24.

Table 3.8 presents a summary of the direct, indirect, and total effects between legal system involvement as a juvenile and adult criminal activities. While the indirect pathway from legal system involvement as a juvenile and criminal activities at age 21 through educational attainment was significant, the indirect pathways through employment and school enrollment were not significant. The direct effect of legal system involvement and criminal activities at age 21 was not significant. At age 23 or 24, neither the indirect pathways through the education and employment variables, nor the direct effect were significant. However, the total effect, including the direct effect and the indirect pathways through education and employment at age 21, as well as through education at age 19 then employment at 21, was significant.

Sensitivity Analysis: Legal System Penetration

The dichotomous measure of legal system involvement provides a comparison between those who have experienced any type and degree of formal label and those who have not. I also tested these models with a more nuanced measure, that of legal system penetration as a juvenile. This variable was treated as an ordinal variable, and included the following four categories: no legal system involvement as a juvenile, arrests, incarceration, and/or convictions as a juvenile. Youth were classified based on their deepest level of penetration into the system. The use of this more nuanced measure did not substantially change the results for the criminal activities models estimated to answer Q2, nor for the mediation models estimated to answer Q3.

Discussion

To answer the first question, I find evidence that when making comparisons between two similar groups of high-risk youth, foster care involvement is associated with higher levels of juvenile justice involvement. Even after matching foster youth in the Midwest Study to peers in the Add Health study from similar geographic locations with similar demographic backgrounds and child maltreatment experiences, there remain large differences in arrest and conviction rates between the two groups. However, I also find that a number of foster youth were dropped from the analysis due to the lack of comparable individuals in the general population sample, and moreover, only a very small number of youth in the general population (1.6%) reported an array of risk factors comparable to those of the foster youth. This suggests that the experiences of foster youth aging out of care lie outside that of the general population, making systematic comparisons difficult and highlighting the unique challenges that former foster youth face.

This finding is no surprise, since juvenile justice decisions take into account family functioning and dependency status in order to rehabilitate the individual and/or improve family functioning (Gebo, 2002). However, this raises the question as to whether this purpose is achieved. Fader et al. (2001) found that there is a mismatch in the services that the juvenile justice system provides and the needs of the individual. For example, only 19% of the first time offenders with substance use issues in their study who were placed were actually placed in a program with drug/alcohol services as a primary component. Although the juvenile justice system may place these youths with good intentions, the potential cost of another disruption for foster youth who have already been removed from their families should be weighed carefully, especially in the absence of appropriate services.

To answer the second question, legal system involvement as a juvenile was related to criminal activities at age 21, but the relationship was no longer significant after including demographic characteristics, maltreatment history, number of placements, and bonds to society to the model. This indicates that there is a labeling effect of legal system involvement as a juvenile among foster youth who have aged out of care on increased criminal activities at age 21, but this effect is fully mediated by the added control variables.

The relationship between legal system involvement as a juvenile and criminal activity at age 23 or 24 was not significant. However, this lack of significance may reflect opposing processes operating between males and females. Although the overall coefficient for legal system involvement was not significant at age 23 or 24, the coefficient for women was positive, while the interaction term between being male and legal system involvement was significant, resulting in an overall negative coefficient for men. The positive coefficient for women and negative coefficient for men suggests that while a labeling effect operates for women, for men, there is a deterrence effect. This relationship warrants further exploration, since the possibility of opposing processes between men and women carries important policy implications. More research is needed to test this relationship in other samples in order to understand if these opposing processes operate only within the population of foster youth who have aged out of care, or if this finding can be generalized to other populations. These findings suggest that delinquency decisions about girls in the foster care system should consider alternatives to probation or detention when possible, taking into account the possibility that legal system involvement could result in increased, not decreased, engagement in criminal activities for these girls.

Although there are three proposed mechanisms through which the labeling effect of legal system involvement may operate, this study only tests the hypothesis that labeling through legal system involvement initiates a process of social exclusion through question 3. This study finds evidence that the labeling effect of legal system involvement as a juvenile on engagement in criminal activities at age 21 is mediated by the attainment of a high school diploma or equivalency at age 19. In addition, there is limited evidence that the lack of a high school diploma or equivalency at age 19 is related to a lower likelihood of employment at age 21. In turn, employment at age 21 is marginally related to a lower likelihood of engagement in criminal activity at age 23 or 24. This finding is similar to prior research that has identified a similar process where incarceration is related to the lack of a high school diploma, which in turn has an impact not being employed (Apel & Sweeten, 2010), and in turn on engagement in criminal behavior (Bernburg & Krohn, 2003). This process of social exclusion appears to operate through education early in the transition to adulthood, and may continue to operate through employment later during the transition.

As this study and other studies have shown, foster youth are more likely to be placed into a detention or probation-related placement (Ryan et al., 2007). Unfortunately, placement may result in changing schools or interrupted educational experiences that may have already been interrupted by the foster care placement. Disrupted educational experiences may result in the decreased likelihood of completing high school as well as later employment, thus, weakening the individual's bond to society (Apel & Sweeten, 2010). However, the measure of legal system involvement used in this study does not differentiate between arrests, incarceration, or convictions. This suggests that when a juvenile makes any contact with the legal system, attention should be paid to encouraging attainment of a high school diploma. Perhaps greater

attention can be paid to ensuring continuity in the youth's educational experiences when making dispositional decisions, such as increasing the use of diversion programs which allow youth to remain in their homes and communities while supervised by probation staff in order to ensure educational continuity. Alternatively, collaborative programs between the juvenile justice and child welfare system could be developed so that foster care youth who come to the attention of the juvenile justice system can receive educational and other services tailored to the youth's specific needs through the foster care system rather than the juvenile justice system, especially for the young girls who may be more likely to experience legal system involvement as a negative label.

While there appears to be some relationship between legal system involvement as a juvenile and later educational and employment outcomes, in this study, parenthood does not appear to be related to legal system involvement unlike prior studies that found a relationship between parenthood and decreased criminal activities (Kreager et al., 2010; Lee et al., 2012). The hypothesized mediating process between legal system involvement and later criminal activities has been described alternatively as exclusion from conventional opportunities or as weakened social bonds. Since there appear to be some relationships between legal system involvement and school and employment, but not parenthood, this may suggest that the mechanism operating is through exclusion from opportunities more specifically, and not weakened bonds in general. On the other hand, the timing of becoming a parent may change the impact of parenting on an individual's bond to society. An early transition into parenthood, as is the case for most of the youth in this study who were between the ages of 17-24 for the duration of the study, may limit gains to human capital and foreclose other opportunities (Berzin & De Marco, 2010; Guldi, Page, & Stevens, 2007). In this sense, early parenthood may actually limit

the individual's bond to other aspects of society, and thus may not contribute to their overall

bond to society. The effect of parenthood is likely to change over time, and warrants future

research.

The mediating models also suggest that legal system involvement and delinquency should

be treated as two distinct concepts within this sample of foster youth aging out of care. Legal

system involvement had some significant relationships with employment and educational

opportunities, and thus appears to impact lives by limiting educational outcomes, and in

weakening individual attachments to the institutions of the labor market and education. On the

other hand, delinquency has a direct relationship with later criminal activities, but no relationship

with these conventional opportunities. Including both measures may provide a more

comprehensive measure of the impact of criminal outcomes. Future work should carefully

consider this distinction when framing research questions and whether both measures should be

included in studies in order to sufficiently answer the proposed research question. In particular,

this distinction between the two concepts should be considered when using administrative data,

since measures of legal system involvement do not appear to be synonymous with delinquency.

Future research can also explore whether this distinction holds in other populations.

Limitations

There are several limitations to this study. First, due to the differences in age and age

range between the Midwest Study and Add Health, as well as an inability to obtain state data for

Add Health in order to match youth based on state, there remain important differences between

the two samples, even after conducting the propensity score matching analysis. Since there are

important differences by state, including programs and policies around juvenile delinquency,

there likely remain important contextual differences between the Midwest Study and Add Health

youth. In addition, there is a lack of congruence between the two studies of some of the variables, most specifically the measure of sexual abuse, since some of the questions were asked differently.

Furthermore, the possible covariates included in deriving the propensity score model to answer Q1 were limited. While misspecification in the propensity score model appears to be less costly than misspecification in a regression model in which one would be directly attempting to estimate the effect of a treatment, other studies typically include a rich array of covariates (Hill, Reiter, & Zanutto, 2004) whereas only a limited number of variables were available to estimate the propensity score model in this study. I do not claim that the strong ignorability assumption (i.e., that I was able to include all relevant risk factors in estimating the propensity score) is met with this limited set of covariates, and thus I am not making any causal claims (Steiner & Cook, in press). Instead, the initial sample bias has been reduced in this study, and the differences in arrest and conviction rates between the Midwest Study and Add Health appear to be robust. This warrants further exploration with other datasets.

Conclusion

This study finds evidence that, among foster youth aging out of care, employment and educational outcomes are negatively affected by legal system involvement as a juvenile. In turn, there is limited evidence that employment and educational outcomes have an impact on engagement in criminal behaviors as an adult. Foster youth have experienced disruptions in their lives, and for those aging out of care, the normative socializing institution of family has been replaced by representatives of the child welfare system. For many of these youths, the juvenile justice system has intervened and also attempts to socialize these young individuals. Although the juvenile justice system intervenes in the lives of child welfare involved youth more

frequently than in non-child welfare involved youth, this appears to compound the situation, and the efforts of these two separate institutions to socialize these youths should be better coordinated. As these youth move from the foster care system into independence, their ability to successfully adopt roles of adulthood is dependent on their ability to transition their commitments from institutions of childhood to institutions of adulthood (Lee, In Press; Sampson & Laub, 1990). This process is difficult for former foster youth, many of whom lack the supports of family and postsecondary education during the transition period, but it appears that if they have experienced legal system involvement as a juvenile, then their ability to transition into adulthood may become more difficult and complicated by their involvement in two systems.
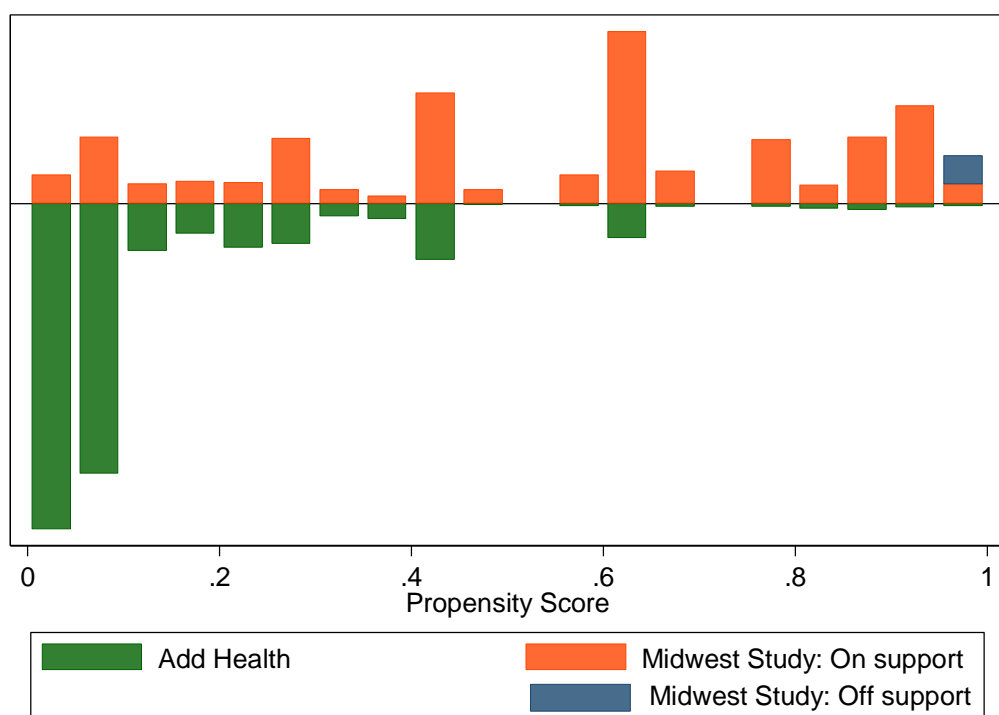
Figure 3.1. Distribution of Propensity Scores for Midwest Study and Add Health Youth
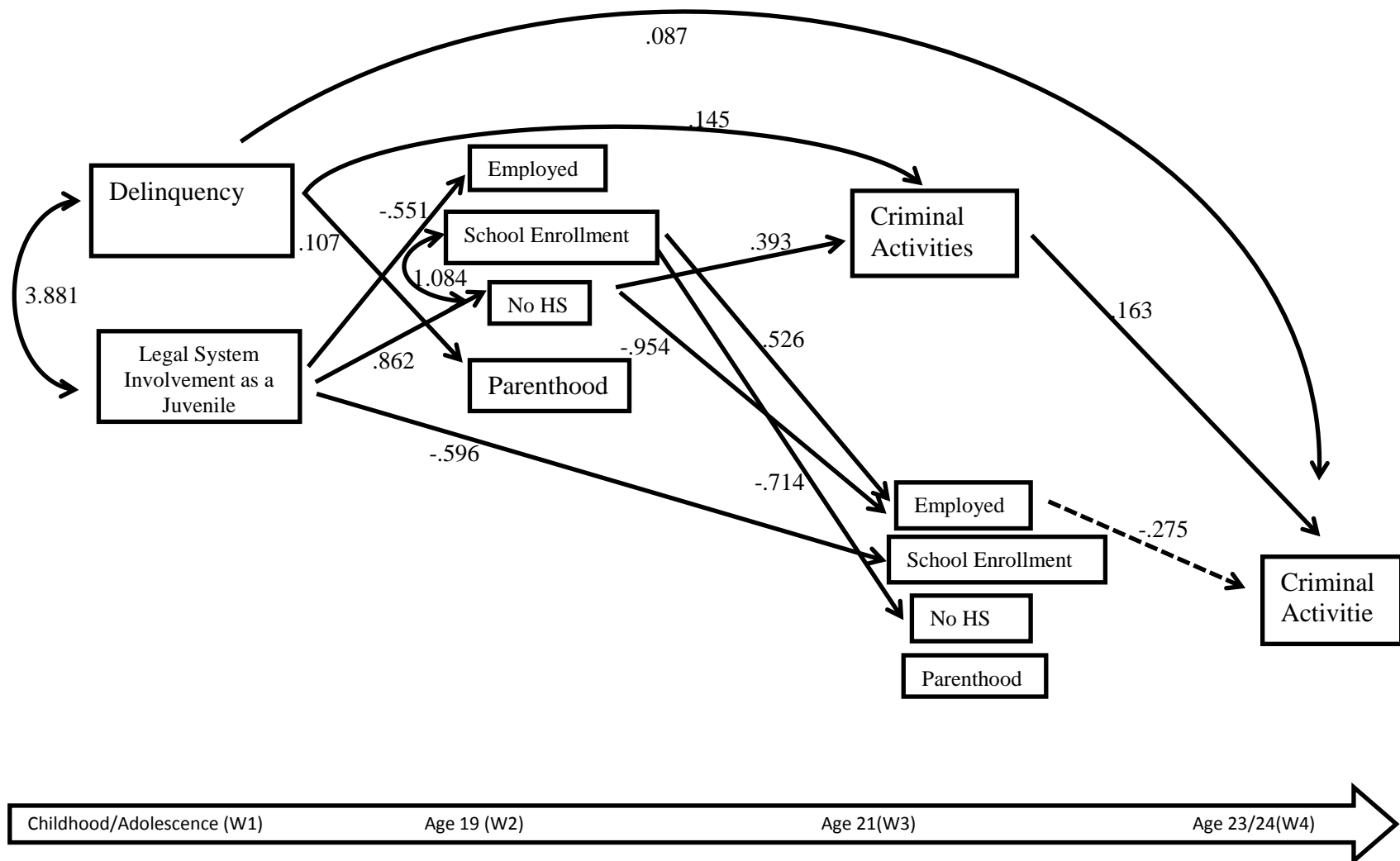
Figure 3.2. Full Model: Legal System Involvement as a Juvenile and Later Criminal Activities with Mediating Pathways
(unstandardized coefficients)

Table 3.1. Descriptive Statistics

	Baseline		Age 19		Age 21		Age 23/24	
	% or Mean	(SD)	% or Mean	(SD)	% or Mean	(SD)	% or Mean	(SD)
Delinquency/Criminal Activities	3.22	(4.15)			1.81	(3.27)	1.44	(2.85)
Legal System Involvement	0.56							
Employed	0.31		0.39		0.54			
Enrolled	0.95		0.48		0.24			
No HS Diploma or Equivalency	0.88		0.40		0.23			
Parenthood	0.86		0.17		0.32			
Male	0.49							
Race								
Caucasian	0.29							
Black	0.55							
Other	0.16							
State								
Illinois	0.64							
Wisconsin	0.27							
Iowa	0.09							
WRAT Score	39.36	(8.41)						
Caregiver DV	0.25							
History of Maltreatment								
Neglect	0.17							
Physical Abuse	0.31							
Sexual Abuse	0.16							
Depression/PTSD Symptoms	0.25							
Drug/Alcohol Symptoms	0.22							
Number of Placements	5.83	(5.85)						
Last Placement								
Foster Home, Relatives, Adoption	0.67							
Group home	0.18							
Independent Living	0.09							
Other	0.06							

Table 3.2. Arrest and Conviction Rates for Foster and Non-Foster Youth

	Foster Youth	Non-Foster Youth	Difference	Bootstrapped SE	t-statistic
Arrested					
Matching with Replacement	0.510	0.117	0.393	0.068	5.777
Convicted					
Matching with Replacement	0.211	0.000	0.211	0.054	3.911

Table 3.3. Comparison of Midwest Study and Add Health Youth, before and after Matching

		Mean or %			t-test	
		Foster Youth	Non-Foster Youth	% Bias Reduction	t	*p*
Male	Unmatched	0.480	0.448		1.48	0.140
	Matched	0.492	0.516	26.6	-0.88	0.381
White	Unmatched	0.290	0.735		-22.46	0.000
	Matched	0.300	0.297	99.3	0.12	0.905
Black	Unmatched	0.552	0.141		23.48	0.000
	Matched	0.550	0.571	94.9	-0.77	0.440
Race, other	Unmatched	0.155	0.123		2.15	0.031
	Matched	0.147	0.132	53.6	0.79	0.430
Age	Unmatched	17.427	20.845		-80.89	0.000
	Matched	17.429	20.462	11.3	-68.18	0.000
Born in the U.S.	Unmatched	0.991	0.981		1.89	0.059
	Matched	0.993	0.990	72.1	0.58	0.562
Neglect	Unmatched	0.370	0.093		17.70	0.000
	Matched	0.349	0.382	88.1	-1.25	0.211
Physical Abuse	Unmatched	0.312	0.298		0.69	0.490
	Matched	0.313	0.345	-123.4	-1.22	0.221
Sexual Abuse	Unmatched	0.300	0.025		22.86	0.000
	Matched	0.277	0.274	98.9	0.12	0.903
Caregiver with criminal history	Unmatched	0.270	0.140		7.44	0.000
	Matched	0.267	0.271	97.0	-0.16	0.876
Delinquency at Baseline	Unmatched	2.541	0.671		18.95	0.000
	Matched	2.559	2.184	79.9	1.95	0.052

Table 3.4. Legal System Involvement as a Juvenile and Adult Criminal Activities, Age 21 (N = 732)

	Model 1			Model 2			Model 3		
	B	SE		B	SE		B	SE	
Legal System Involvement	0.380	0.150	*	0.043	0.215		-0.009	0.218	
Delinquency/Criminal Activities	0.109	0.014	***	0.147	0.026	***	0.145	0.026	***
Covariance	3.747	0.458	***	3.747	0.458	***	3.747	0.458	***
Male				0.880	0.221	***	0.889	0.229	***
Race									
Caucasian (ref)									
Black				0.236	0.155		0.188	0.159	
Other				0.115	0.188		0.144	0.193	
Caregiver DV				-0.007	0.165		0.013	0.165	
History of Maltreatment									
Neglect				0.559	0.192	**	0.549	0.190	**
Physical Abuse				-0.181	0.161		-0.142	0.158	
Sexual Abuse				0.474	0.194	*	0.457	0.190	*
Number of Placements				0.029	0.01	*	0.029	0.01	**
Bonds to Society/ Conventional Opportunities									
Employed							0.064	0.146	
Enrolled							-0.173	0.153	
No HS Diploma or Equivalency							0.393	0.149	**
Parenthood							0.073	0.206	
Interaction Terms									
Male * Legal System				0.259	0.279		0.214	0.278	
Male * Delinquency				-0.073	0.029	*	-0.075	0.029	*
Dispersion Parameter	1.877	0.194	***	1.518	0.164	***	1.443	0.158	***
LL	-3795	8		-3758	18		-3752	22	
AIC	7606			7553			7547		
BIC	7643			7636			7648		
adjusted BIC	7617			7578			7578		
Wald Test							11.059	4	*

+ $p<.10$; * $p<.05$; ** $p<.01$; *** $p<.001$

Table 3.5. Legal System Involvement as a Juvenile and Adult Criminal Activities, Age 23 or 24 (N = 732)

	Model 1			Model 2			Model 3		
	B	SE		B	SE		B	SE	
Legal System Involvement	0.089	0.168		0.393	0.248		0.334	0.252	
Delinquency (baseline)	0.082	0.018	***	0.083	0.036	*	0.087	0.036	*
Prior Criminal Activities (age 21)	0.176	0.026	***	0.164	0.027	***	0.163	0.028	***
covariance	3.747	0.458	***	3.747	0.458	***	3.747	0.458	***
Male				1.037	0.256	***	1.028	0.274	***
Race									
Caucasian (ref)									
Black				0.185	0.184		0.133	0.182	
Other				0.464	0.211	*	0.484	0.210	*
Caregiver DV				0.517	0.19	**	0.487	0.191	*
History of Maltreatment									
Neglect				-0.291	0.196		-0.308	0.198	
Physical Abuse				-0.135	0.249		-0.047	0.186	
Sexual Abuse				-0.135	0.249		-0.146	0.251	
Number of Placements				0.024	0.011	*	0.024	0.011	*
Bonds to Society/ Conventional Opportunities									
Employed							-0.275	0.166	+
Enrolled							-0.059	0.199	
No HS Diploma or Equivalency							0.042	0.185	
Parenthood							-0.058	0.186	
Interaction Terms									
Male * Legal System				-0.78	0.310	*	-0.767	0.310	*
Male * Delinquency				-0.02	0.040		-0.026	0.039	
Dispersion Parameter	2.096	0.238	***	1.782	0.209	***	1.745	0.205	***
LL	-3610	9		-3585	19		-3582	23	
AIC	7238			7209			7210		
BIC	7279			7296			7316		
adjusted BIC	7250			7236			7243		
Wald Test							3.718	4	

+ p<.10; * p<.05; ** p<.01; *** p<.001

Table 3.6. Full Tables of Mediation Models for Criminal Outcomes at Age 21

	Age 19 Outcomes											
	Employment			School Enrollment			No HS Diploma/Equivalency			Parenting		
	B	SE		B	SE		B	SE		B	SE	
Legal System Involvement	-0.551	0.204	**	-0.274	0.226		0.862	0.255	**	0.094	0.295	
Self-Reported Delinquency	0.001	0.027		-0.029	0.027		0.008	0.028		0.107	0.037	**
Employment	1.189	0.200	***									
School Enrollment				0.994	0.527	+	-0.834	0.489	+			
No HS Diploma/Equivalency				0.566	0.337	+	1.651	0.486	**			
Parenting										-3.083	0.346	***
Male	0.458	0.191	*	0.099	0.212		0.234	0.229		-0.068	0.202	***
Race												
Caucasian (ref)												
African American	-0.873	0.233	***	0.851	0.266	**	1.042	0.289	***	-0.448	0.225	
Other	-0.583	0.290	*	0.904	0.329	**	0.158	0.358		0.011	0.351	

	Coef.	SE	Sig.	Coef.	SE	Sig.	Coef.	SE	Sig.
WRAT Score	0.011	0.012		0.029	0.013	*	-0.056	0.016	***
State									
IL (ref)									
WI	0.265	0.212		-0.898	0.253	***			
IA	0.325	0.325		-1.404	0.435	**			
Number of Placements	-0.022	0.017		-0.019	0.020				
Placement at Baseline									
Foster Home (ref)									
Group Home	-0.467	0.260	+	-0.637	0.285	*	-0.678	0.457	
Independent Living	0.187	0.307		0.151	0.375		-0.199	0.551	
Other Placement	-0.908	0.415	*	-1.060	0.473	*	1.526	0.564	**

+ *p*<.10; * *p*<.05; ** *p*<.01; *** *p*<.001

Table 3.7. Full Tables of Mediation Models for Criminal Outcomes at Age 23 or 24

					Age 21 Outcomes						
	Employment			School Enrollment			No HS Diploma/Equivalency			Parenting	
	B	SE		B	SE		B	SE		B	SE	
Legal System Involvement	0.077	0.209		-0.596	0.227	**	0.253	0.310		-0.221	0.257	
Self-Reported Delinquency	-0.009	0.029		-0.034	0.031		-0.002	0.043		-0.025	0.040	
Employment	1.266	0.209	***									
School Enrollment	0.526	0.209	*	1.116	0.236	***	-0.714	0.291	*			
No HS Diploma/Equivalency	-0.954	0.215	***	-0.014	0.245		3.464	0.401	***	2.831	0.377	***
Parenting												
Male	-0.068	0.202		-0.249	0.220		-0.057	0.288		-1.571	0.269	***
Race												
Caucasian (ref)												
African American	-0.448	0.225	*	0.171	0.251		-0.111	0.344		0.191	0.287	
Other	0.563	0.306	+	0.153	0.328		-0.299	0.452		0.011	0.351	
WRAT Score				0.034	0.014	*	-0.022	0.019				

Depression/PTSD Symptoms				-0.069	0.377		-0.542	0.277 +
Drug/Alcohol Symptoms				0.721	0.376	+	0.466	0.337
Caregiver DV Issues							0.367	0.271
Child Maltreatment								
Neglect				0.302	0.373			
Physical Abuse				-0.587	0.320	+		
Sexual Abuse				-0.774	0.444	+		
Number of Placements	-0.013	0.017		0.006	0.021			
Placement at Baseline								
Foster Home (ref)								
Group Home	-0.570	0.258	*				-0.067	0.338
Independent Living	-0.380	0.342					0.112	0.418
Other Placement	-0.283	0.397					0.530	0.430

+ *p*<.10; * *p*<.05; ** *p*<.01; *** *p*<.001

Table 3.8. Summary of Indirect, Direct, and Total Effects of Legal System Involvement as a Juvenile on Adult Criminal Activities

	Age 21			Age 23 or 24		
	B	SE		B	SE	
Direct Effects	-0.009	0.219		0.334	0.253	
Indirect Effects						
via employment	-0.035	0.084		-0.023	0.065	
via enrollment	0.049	0.063		0.037	0.122	
via educational attainment	0.339	0.168	*	0.010	0.064	
via parenthood	0.004	0.051		0.015	0.054	
via enrollment-employment				0.040	0.047	
via educational attainment-employment				0.227	0.169	
Total Effects	0.339	0.274		0.610	0.321	+
Total Effects (without parenthood)	0.344	0.266		0.625	0.317	*

+ $p<.10$; * $p<.05$; ** $p<.01$; *** $p<.001$

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CHAPTER 4: EXTENDED CARE AS INFORMAL SOCIAL CONTROL
DURING THE TRANSITION TO ADULTHOOD

Introduction

Each year, around 28,000 youth emancipate from the foster care system (Children's

Bureau, 2011), and many of these former foster youth are vulnerable during the transition to

adulthood. Studies have documented a range of negative outcomes for these youth during the

transition to adulthood period, including limited educational attainment, limited employment

experiences, homelessness, economic instability and high rates of arrests and other legal system

involvement (Barth, 1990; Berzin, 2008; Blome, 1997; Collins, 2001; Courtney et al., 2011;

Courtney, Dworsky, Cusick, et al., 2007; Courtney, Dworsky, Lee, & Raap, 2010; Courtney &

Heuring, 2005; Foster & Gifford, 2005; Reilly, 2003). In part, these former foster youth may be

at high risk during the transition period since many lack the material and other support typically

provided by families during the transition to adulthood (Schoeni & Ross, 2005). Extending foster

care support beyond age 18 can help reduce the risk during this transition period. Several states

have begun to provide extended support to address this need, which often consists of some

combination of room and board subsidies, health insurance, educational scholarships, and/or

employment preparation and retention services beyond age 18 up to age 21.

This study focuses on the possible benefits of extended care in reducing arrests among

foster youth aging out of care. Reducing arrests may make a significant difference in the lives of

these former foster youth, since an arrest in early adulthood may have long-term consequences

on the ability of these individuals to function fully as citizens. For example, having a prior arrest

record has been found to negatively impact employer hiring decisions (Pager, 2003). In addition,

public policies disqualify individuals with a record from federal housing subsidies (Raphael,

2007) and most states disenfranchise felons for a period of time, if not permanently (Crutchfield, 2007). The recent passage of the Fostering Connections to Success and Increasing Adoptions Act of 2008 (Fostering Connections Act) provides additional funding to states to support foster youth aging out of care beyond age 18 (Courtney, 2009), increasing the incentive for more states to change their policies. Research in states that provided extended support prior to the Fostering Connections Act indicate that foster youth who receive extended care through age 21 experience benefits in postsecondary educational attainment, earnings, and delayed pregnancy (Courtney, Dworsky, & Pollack, 2007; Hook & Courtney, 2011). There is also limited evidence that extended care reduces arrests among female foster youth (Lee, Courtney, & Hook, 2012). This study uses data from a prospective study following youth aging out of the foster care system in three Midwestern states linked with official arrest data to examine the protective effects of providing extended foster care support and to identify other factors that may be related to the risk of arrest for these former foster youth during the early transition period.

Institutions during the Transition to Adulthood

Providing extended support to former foster youth during the transition to adulthood may help reduce the risk of arrest by maintaining the individual's tie to a social institution in the form of continued involvement in programs and/or relationships with agents of the child welfare system. The transition to adulthood has been characterized as a period when institutional attachments and social norms are loosened in comparison to other developmental periods, allowing individuals to explore multiple possibilities before establishing long-term commitments to institutions of adulthood (Arnett, 2006; Côté, 2000). While this period of loosened institutional attachments may afford some the necessary latitude to prepare for adulthood, this may also increase the risk of criminal behaviors and/or arrests. Social control theorists argue that

an individual engages in delinquent acts when their bond to society, expressed through an individual's relationship to social institutions, is weakened (Hirschi, 1969). Sampson and Laub's (1990) age-graded theory of informal control, which integrates a life course perspective into social control theory, argues that the key social institutions operating as institutions of informal social control vary depending on an individual's developmental stage (Sampson & Laub, 1990). Thus, assisting an individual to transition their bond from institutions of childhood, such as family, school and peers, to institutions of adulthood, such as employment, marriage, and parenthood, may reduce their likelihood of committing a crime during the transition period (Sampson & Laub, 1990).

Attachments to institutions during this transition period may be easily overlooked, since this period is often characterized as a time of instability, when attachments are temporary and changeable (Arnett, 2000, 2006). There are two institutions that provide important support for some individuals during the transition period: the family (Côté, 2000; Furstenberg, Rumbaut, & Settersten, 2005; Schoeni & Ross, 2005; Stein, 2006) and postsecondary educational institutions, particularly 4-year programs (Brock, 2010; The William T. Grant Foundation Commission on Work, 1988). However, many former foster youth do not receive support from these two institutions during the transition period. Foster youth who age out of care have been removed from their homes, indicating that their families of origin failed, in some way, to care for these foster youths. Many of these families lack the social or cultural capital to provide guidance about education or employment decisions, and many lack the financial resources to support the transition process. Moreover, former foster youth report limited experience with postsecondary educational institutions: 40% of former foster youth report even some college experience by ages

25 or 26 (Courtney et al., 2011) compared to 64% of 25- and 26-year-olds in the general population (Ruggles et al., 2010).

Maintaining ties to the programs or services provided through the foster care system during the transition, especially in the absence of normative institutional bonds, may facilitate continued social ties that act as an informal mechanism of social control and thus reduce the likelihood of an adult arrest. In addition, extended care services often seek to develop independence by providing transitional housing and requiring engagement in educational programs and/or employment. In addition to increased independence, the foster youth's engagement in these conventional activities may reduce their opportunities for participation in unstructured activities with their peers and engagement in deviant behaviors, thus reducing their likelihood of being arrested.

The First Adult Arrest

This study seeks to explore and better understand the risk of first adult arrest for former foster youth transitioning out of care. The stakes for arrest become much higher after youth come of age at 18, when arrests fall under the jurisdiction of the adult criminal justice system rather than the juvenile justice system, and when "delinquent" acts become "criminal" acts. A juvenile record may be sealed or "expunged" while adult records are permanent. At the same time, the first adult arrest can be considered "a punctuating event in the life course that confers a new and fateful identity" (Sutton, 2010, p. 2): the youth may begin to be labeled a criminal. Unfortunately, this event is fairly common among former foster youth. In comparison to a nationally representative sample, a sample of mostly 25- and 26-year-old former foster youth who have aged out of care reported higher rates of arrest (42% vs. 5% for women and 68% vs. 22% for men) after turning 18 (Courtney et al., 2011).

There are two possible time-related factors that may have an influence on when former foster youth aging out of care experience their first arrest. First, the longer an individual is at risk for an adult arrest, also referred to as time at risk, the more likely that individual is to have experienced an arrest. In other words, time at risk is related to the risk of arrest. For example, if a 20-year-old and a 19-year-old have the same array of risk and protective factors, the 20-year-old would be more likely to have experienced an adult arrest, since the 20-year-old has been at risk for an adult arrest for two rather than one year. Most studies estimating duration models focus on recidivism, which may have some relevance since many former foster youth have histories of prior legal involvement (Courtney, Terao, & Bost, 2004). The first adult arrest may be their first encounter with the adult criminal system, but it may not be their first encounter with members of law enforcement. Extant literature on recidivism among adult offenders describes the risk of arrest as rising in the first year after release from prison and subsequently declining (Gainey, Payne, & O'Toole, 2000; Uggen, 2000; Uggen & Kruttschnitt, 1998).

The hazard of first arrest (i.e., conditional probability of being arrested given that the individual has not yet been arrested) may also be influenced by the youth's aging during the transition to adulthood. The risk for delinquent or criminal behaviors in the general population peaks during late adolescence (Agnew, 2003; Cusick & Courtney, 2007; Piquero, Brame, Mazerolle, & Haapanen, 2002; Vaughn, Shook, & McMillen, 2008), but the risk for arrest appears to peak slightly later. In 2010, the arrest rate peaked among 19- and 20-year -olds at 11%[1]. Raphael's (2007) examination of the patterns of incarceration for the general population

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[1] The Federal Bureau of Investigation Uniform Crime Reports, which provides national statistics on arrests, indicates that 19- and 20-year-olds comprise the largest share of those who were arrested in 2010, at 4.9 and 4.7%, respectively, although these numbers may include multiple arrests of the same person (http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2010/crime-in-the-u.s.-2010/tables/10tbl38.xls#overview). This figure provided by the FBI was divided by reported U.S. Census population counts for 2010 to calculate the 11% arrest rate for 19- and 20-

over the last three decades documents the trend of earlier first incarceration spells, particularly in the early 20s, and the increasing proportion of young adults serving time. Several studies on subpopulations also suggest that peak legal involvement occurs in the early 20s. In a study of serious offenders in California, Piquero et al. (2002) found that arrests peak in the early 20s before declining. Their sample, which considered arrests from ages 16-28, only included males who had already been arrested as juveniles. In a study of male adolescents leaving foster care from three Midwestern states, official arrest data consisting of youth ages 16-22 indicated that the highest proportion of youth was arrested at age 18 (Ryan, Hernandez, & Herz, 2007). In a study including both males and females aging out of the foster care system, self-reported arrests appear to peak at age 19 for female and age 21 for males, although the differences in arrest rates between interviews may not be statistically significant (Courtney et al., 2011). Thus, legal involvement appears to peak during the early transition period, when many of these former foster youth are transitioning out of care.

In a prior related study, Cusick, Courtney, Havlicek and Hess (2011) reported that the hazard of first arrest for the overall sample of former foster youth aging out of care, beginning when youth were preparing to exit care at age 17 or 18 through the time when youth were 22 or 23, declines steadily though somewhat unevenly. These studies suggest that the hazard of arrest may increase slightly as many youth age out of care at age 18 and subsequently decline.

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year-olds (http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_SF1_QTP2&prodType=table).

Factors Influencing the Risk of Arrest

Early child maltreatment experiences. In addition to the influence of time at risk and aging on the hazard rate of arrest, several other factors may influence the hazard rate for former foster youth. Several studies have found a direct, positive relationship between a history of abuse and adult criminal behaviors: child maltreatment is related to future violent and other criminal behaviors (Smith & Thornberry, 1995), as well as a higher likelihood of arrest (Maxfield & Widom, 1996; Widom, 1996). In order to better understand the pathway from child maltreatment and later delinquency, Bender (2010) proposes further exploration of several potential pathways including: mental health problems, substance abuse, and low academic achievement or academic problems, which may also be related to academic aptitude.

Experiences in the child welfare system may influence the relationship between maltreatment and future criminal activity. For example, Widom (1991) found that placement stability and being first placed at a young age reduced the likelihood of criminal outcomes for individuals who had prior maltreatment experiences. In another study, while an out-of-home placement had a neutral or slightly positive effect on criminal behaviors overall, placement instability was a key risk factor of future criminal behaviors (DeGue & Widom, 2009). Attachment to other social institutions, such as family, school, peers, and religious communities, can influence the relationship between child maltreatment and youth violence (Herrenkohl, Huang, Tajima, & Whitney, 2003; Herrenkohl, Tajima, Whitney, & Huang, 2005). In addition to these social institutions, attachment to the child welfare system may also play a role in reducing later criminal activity, and thus the risk for arrest.

The effectiveness of an individual's attachment to an institution of informal control, specifically the family, may also depend on characteristics of the institution. This attachment to

family likely precedes maltreatment or child welfare system experiences. For former foster youth who are aging out of care, there is a possibility that their families of origin had experiences that would not reinforce social control. For example, parental drug and alcohol use are risk factors for child maltreatment (Marcenko, Newby, Lee, Courtney, & Brennan, 2009). An individual's attachment to their parents with substance use issues could increase their likelihood of later arrest. Paternal incarceration has also been found to be related to increased likelihood of abuse and neglect by increasing the presence of nonbiological caregivers (Foster & Hagan, 2007). Foster and Hagan (2007) describe the influence of parental incarceration on the later social exclusion of their children, and while they measure social exclusion through political disengagement, homelessness, and a lack of health insurance, the risk of arrest can also be considered a form of social exclusion, and is worth exploring.

Risk factors for juvenile justice involvement. In a related area of study, two studies examine the link between child welfare and juvenile justice system involvement in California and Florida. Jonson-Reid and Barth (2000) reported that 2.6% of their statewide sample of children with a first spell in the child welfare system from 1990-1995 later entered the California Youth Authority (CYA), the state juvenile authority for serious youthful offenders. Both studies report that early maltreatment experiences are significantly associated with future juvenile justice involvement for children in the child welfare system, although the relationship depends on the type of maltreatment, whether neglect, physical abuse, or sexual abuse (Jonson-Reid & Barth, 2000; Yampolskaya, Armstrong, & McNeish, 2011). Jonson-Reid & Barth (2000) report that children removed from the home due to sexual abuse were less likely to later enter CYA than their peers who were removed due to physical abuse or neglect while Yampolskaya, Armstrong, and McNeish (2011) reported that only sexual abuse was significantly associated with the risk of

faster placement in a detention center. However, this was in comparison to the threat of harm, and thus differences may be related to the differences in measurement and the reference group used. Differences may also be related to the type of offense considered; while Yampolskaya and colleagues did not consider the type of offense, the youth in the Jonson-Reid and Barth study were those who had committed more serious offenses.

Risk factors during the transition to adulthood. Two previous studies also considered arrests during the transition to adulthood for a sample of youth aging out of care. One study focused on the role of social bonds, as measured by closeness to mother, father, and caregiver, in reducing the risk for arrest during the transition (Cusick et al., 2011; Cusick, Havlicek, & Courtney, 2012). Although this study included a measure of closeness to foster or substitute caregivers, it did not include a measure of whether the youth was still in care or how extended care may influence the hazard of arrest. They used survey data linked to administrative arrest data and reported that gender, race, substance abuse, mental health, placement instability, and being employed were related to the hazard of arrest, but not closeness to parents or substitute caregiver (Cusick et al., 2011; Cusick et al., 2012).

In a second related study using survey data collected when youth were preparing to exit care at ages 17 or 18, and three subsequent biannual interviews, Lee, Courtney and Hook (2012) examined the relationship between care status and self-reported criminal behaviors and legal system involvement. This study found gender differences: extended care was associated with reduced likelihood of arrest for women, but not men. In addition, placement instability was a risk factor for women but not men. On the other hand, school enrollment was associated with decreased likelihood and alcohol or drug abuse symptoms were associated with increased likelihood of arrest for men. For men and women, prior arrests and time at risk (i.e., time since

the last interview) were also associated with increased likelihood of arrest, while parenting their child(ren) was associated with decreased likelihood of arrest.

This current study seeks to build on these two previous related studies (Cusick et al., 2012; Lee et al., 2012) using the same dataset of official arrest data linked with survey data to explore both the risk of first adult arrest and the risk of first adult arrest for a violent offense for former foster youth aging out of care. Both general arrests and violent arrests are considered, since violent arrests reflect a more serious offense. Particular attention is paid to the role that extended support from the foster care system beyond age 18 may play in reducing the risk of arrest. Extended support from the foster care system is hypothesized to operate as a social bond that may inhibit delinquent behavior. Thus, the potential impact of bonds to other social institutions, such as education, labor market, and parenthood, are also considered in this study. This study also contributes to the growing body of work that spans developmental stages, considering the influence of childhood and adolescent experiences such as maltreatment and child welfare experiences on adult arrests during the transition to adulthood period. Finally, this study asks a timely and policy-related question by examining the impact that extended foster care may have on arrests during the transition to adulthood. This study uses event history analyses and official arrest data to build upon the prior study by Lee and colleagues (2012) that also explored the impact of extended foster care on later criminal behaviors and legal system involvement.

This study also builds upon existing literature by considering gender differences with a sample consisting of comparable numbers of men and women. Gender is often identified as a factor in criminal outcomes, but since many prior studies often use datasets consisting of men exclusively, our understanding of gender differences is limited (Bartusch & Matsueda, 1996; Hagan, Gillis, & Simpson, 1985; Simpson, 1989; Uggen & Kruttschnitt, 1998). In this high risk

sample, a majority of both men and women have experienced legal system involvement: by age 26, 59% of females and 82% of males in the study report that they have been arrested (Courtney et al., 2011).

This present study seeks to answer the following four questions: 1) What is the hazard rate for arrests during the transition to adulthood for former foster youth aging out of the system? 2) Are there gender differences in the hazard rate for arrests during the transition to adulthood for former foster youth aging out of the system? 3) Does extended foster care during the transition to adulthood reduce the risk of arrest? 4) Controlling for extended foster care, what other factors, including bonds to the social institutions of education, labor market, and parenthood, are associated with increased or decreased risk of arrest during the transition to adulthood period?

Method

Sample

This study uses survey data from the Midwest Evaluation of the Adult Functioning of Former Foster Youth (Midwest Study) linked with official arrest data. The Midwest Study is a prospective study that sampled 732 youth from Illinois, Iowa, and Wisconsin as they were preparing to leave the foster care system. The Midwest Study drew a random sample of two-thirds of youth from Illinois and all eligible youth from Wisconsin and Iowa who had been in the foster care system for at least a year, and were age 17 and thus preparing to transition to independence. The first interviews occurred between May 2002 and March 2003. These youth were interviewed every two years up through age 25 (5 waves), with the most recent wave of data collection occurring between October 2010 and May 2011. There has been an over 80% retention rate at each wave, and demographic comparisons between the baseline and each subsequent wave did not reveal any significant differences between those who had and had not

been interviewed except at Wave 2, where those who were not interviewed were more likely to be men (Courtney et al., 2011; Courtney, Dworsky, Cusick, et al., 2007; Courtney et al., 2010; Courtney et al., 2005). The official arrest data was obtained from the three states, Illinois, Iowa, and Wisconsin, including all arrests up to March 14, 2008, around the time when participants were 22 or 23 years of age. These official arrest data include the period when the risk of first arrest peaks in the early 20s (Raphael, 2007) and provide more specificity than the survey data. Although the survey data include self-reported arrests, official arrest data provide specific dates and reason for arrest whereas the survey data only captures whether an individual was arrested since the last interview. In some instances, if an individual was only interviewed at the first and fourth waves but not the two intervening waves, six years could be covered within a single interval, further limiting the level of specificity when using the survey data.

Measures

Dependent variable. The *first adult arrest*, or the first arrest that occurred following the individual's 18th birthday, is the observed event of interest. See Table 4.1 for a summary of arrest history. Following Cusick and colleagues' (2012) study, procedural arrests, such as speeding, operating an uninsured vehicle, littering, public intoxication, and issuance of warrant, were dropped from the dataset since inconsistencies in reporting across the three states was likely. A total of 67 participants had only procedural arrests, and thus had no reported arrests after the procedural arrests were dropped. The official arrests data include all arrests through March 14, 2008, and thus the study period occurs from the individual's 18th birthday and ends on March 14, 2008. Individuals who were not arrested during the study period are treated as censored observations (i.e., they continue to be at risk for arrest). Forty-six percent (n=338) of the sample experienced non-procedural arrests during this period, and the remainder were censored.

A second set of analyses was also conducted using the *first adult arrest for a violent offense*. Violent arrests were identified based on offense category; offenses classified as against persons were included while offenses classified as contempt, drug, miscellaneous, traffic, and property were dropped. Examples of offenses against persons included assault and battery, aggravated assault, armed robbery, and sexual assault of a child. This resulted in 23% (n = 171) of the sample experiencing an arrest for a violent offense during this period. However, due to the small incidence of arrests for violent offenses in Iowa (n = 2) and women in Wisconsin (n = 2), the analyses were only conducted with participants from Illinois and men from Wisconsin resulting in 29% (n = 167) of the sample experiencing an arrest for a violent crime during the study period. The remaining cases were considered censored observations.

Independent variables. The key independent variable for these analyses is *extended care status*. An individual's care status was based on whether they had an open case with the local child welfare office on a given day. As long as the youth's case was open, the individual could be receiving a range of extended care services including: financial and other support for educational and vocational programs, financial literacy training and employment services, housing assistance programs, employment support, life skills classes, medical insurance, support for teen parenting, and legal advice. The benefits of extended care are conceptualized as only existing as long as an individual continues to receive support services from the foster care system, and ending once the individual is discharged from care. Although an individual with a strong bond to their foster family may continue to receive support from their family, that support provided informally through the foster family would not be captured in this measure. In other words, this measure only refers to the support services provided by the state. This care status variable is an exogenous, time varying dummy variable (1=out of care; 0 = in care), and is based

on the date the youth's case was closed, according to the administrative database. While some youth had exited care by the start of the study, any change in care status is unidirectional: moving from being in care to having exited care.

Demographic variables. See Table 4.2 for a summary of covariates included in the models. *Race/ethnicity* was coded based on self-reported race at the baseline interview. The categories included white (29%), black (55%), and other (16%). The other category consisted of those who reported that they were Asian or Pacific Islander, American Indian or Alaskan Native, mixed race, or of Hispanic ethnicity.

Individual risk factors. Several individual risk factors were included in the analyses. Participants were asked if they had *ever been arrested* at baseline, and this was coded as a dichotomous variable. A composite measure of the number of types and frequency of *delinquency* was based on their response to questions as to how many times (none, 1 day, 2 or 3 days, 4 or 5 days, 6 or more days) they participated in 15 delinquent activities in the 12 months before the baseline interview ($\alpha=.802$). This measure had a distribution that most closely resembled a count distribution. These included behaviors such as, paint graffiti, deliberately damage property that didn't belong to you, take something from a store without paying for it, drive a car without its owner's permission, steal something worth more than $50, go into a house or building to steal, sell marijuana or other drugs, steal something worth less than $50, loud, rowdy, or unruly in public, get into a serious fight, hurt someone badly enough to need bandages or medical care, use or threaten to use a weapon, in a gang fight, pulled a knife or gun on someone, shot or stabbed someone. Scores on the Wide Range Achievement Test (WRAT) were also included as a measure of the individual's *academic ability*, but ultimately dropped from the analyses due to its lack of significance and impact on model fit statistics (discussed below).

An indicator of alcohol or substance abuse and mental health was also included. The Composite International Diagnostic Interview (CIDI) was administered during the interview and questions from the diagnostic tool were used to construct two dichotomous variables indicating whether the participant reported symptoms of alcohol or other substance issues, and whether the participant experienced symptoms of depression or posttraumatic stress syndrome, the most common mental health diagnoses in this sample. These two variables do not indicate that the individual met criteria for a diagnosis, but rather, indicate the presence of symptoms. Two dichotomous variables were constructed based on whether the individual reported an episode at age 16 or older and whether they reported 1 or more drug or alcohol dependency symptom for the *alcohol or other substance abuse* variable and whether they experienced five or more depressive symptoms or one or more posttraumatic stress symptoms for the *mental health* variable.

Participants were also asked questions about whether they experienced specific types of neglect or physical abuse from their caretakers prior to entry into the child welfare system. Two variables were created that were counts of the number of types of *neglect history* from a list of 9 types such as whether their caregiver ignored or failed to obtain necessary medical treatment, failed to provide regular meals, or go without things they needed, and the number of 7 possible types of *physical abuse history* including whether their caretaker ever threw or pushed them, locked them in a room or closest, hit you hard with a fist or kick you or slap you. Participants were not directly asked about sexual abuse, but during the CIDI interview at baseline, the diagnostic questions for posttraumatic stress syndrome included two pertaining to sexual assault: were you ever raped and were you ever sexually molested. Although these two questions did not specify the perpetrator, they were summed and included as a measure of *sexual abuse history*.

Caregiver characteristics. Three measures were also included that included information about any of their caregivers prior to entering the child welfare system. Participants were asked if any of their caregivers living in the household exhibited *alcohol abuse*, *drug abuse,* or had a *criminal record*. These were coded as three separate dichotomous variables, 1 for yes and 0 for no.

Child welfare system experiences. Two variables were included as a measure of the individual's experience in the child welfare system. The individual's *total number of placements* was included as a measure of placement instability, as well as the *age of first placement*. The age of first placement was coded as a categorical variable based on developmental stage and subsequently collapsed due to similar coefficients and for the sake of parsimony in the final models. This resulted in two categories: whether the individual was placed in their infancy or childhood (ages 0-11) or whether they were placed as an adolescent (12-18). *Placement type* at baseline and *satisfaction with the foster care system* was also considered but dropped from the analyses due to the lack of significance and impact on model fit statistics.

Measures of bonds to social institutions. Four measures of commitment and involvement in the social institutions of school, labor market, and parenthood were included. The first three were dichotomous variables measured at baseline: whether the individual had a *high school diploma or equivalency*, whether they reported being *employed*, and whether *they had a child*. A fourth variable, whether they had *a resident child*, was included as a time-varying covariate. Not all of the participants who reported that they had children reported that they were living with their child: 92% of women who reported that they had any living children and 41% of men reported that they were living with at least one child at ages 23 or 24. Since a parent with a resident child is assumed to be more involved, and thus bonded, than a parent with only non-

resident children, this measure captures whether there was a resident child in the household at a given point in time. Information from subsequent interviews was used to piece together whether the participant had a resident child at any point during the study. Using questions from the study based on whether a child was a current resident and the age of the child, as well as whether the child had ever been a resident and the date of last residence were used to approximate the dates when a participant may have first had a resident child, and the date the child was no longer a resident, if that transition was also made. Thus, up to two transitions could have been made during the study period: not having a resident child to having a resident child, and having a resident child to not having a resident child.

Analyses

Event history modeling was used to estimate the effect of involvement in the foster care system on the duration to first adult arrest and first adult arrest for a violent offense. Event history analyses take into account duration to an event, rather than just whether or not an event occurs, and thus incorporates the concept of risk within the model (Box-Steffensmeier & Jones, 2004). In contrast to standard regression models, event history models take into account whether or not data are censored, which are cases that do not experience an event before the end of the study period (Box-Steffensmeier & Jones, 2004). For example, individuals who were not arrested by March 14, 2008, still face the potential of arrest, but I do not have any further information on whether these individuals are arrested. Event history models distinguish between these censored individuals, and those who may have been arrested on the last day of observation. Censored individuals contribute to the estimate of the overall likelihood of surviving until the end of the study period, but do not contribute to the estimated probability that the event occurred (Box-Steffensmeier & Jones, 2004).

There are two key mathematical concepts from event history analysis models that will help interpret the results presented below: survivor functions and hazard rates. First, the survivor function can be understood as the probability of surviving until a given time, or in other words, the proportion of the group that survives beyond the given time (Box-Steffensmeier & Jones, 2004). In this case, the survivor function (or curve) depicts the percentage of individuals who have avoided arrest by a certain day. The survivor function, when graphed with the density (or percentage of the group surviving) on the y-axis and time on the x-axis, is a monotonically declining curve, i.e., it does not switch from decreasing to increasing or vice versa. The survival curve always begins at one (or 100% of the group have not yet experienced the event) at time 0. The hazard rate can be derived from the survivor function, and is the conditional probability of the event occurring. Thus, the hazard rate indicates the probability an individual will be arrested on a certain day, given that the individual has not yet been arrested (Box-Steffensmeier & Jones, 2004).

All analyses were conducted in Stata version 11.2 (StataCorp, 2009). First, nonparametric (empirical) models were examined to describe the hazard of arrest during the transition to adulthood for foster youth who had aged out of care. The Kaplan-Meier method, which is derived from the data based on arrests and arrest time, was used to estimate the survivor function. Table 4.2 shows descriptive statistics that indicated potential gender differences in whether a youth was arrested before or after leaving care, suggesting that models should be estimated separately for men and women. These potential gender differences were further examined in the survivor function graphically, and the Wilcoxon and log-rank test were both used to assess significance, since the Wilcoxon stresses early differences and the log-rank test stresses later differences (Blossfeld, Golsch, & Rohwer, 2007). The estimated survival curves

suggested a significant difference between men and women, so multivariate models were estimated separately to take into account gender differences, similar to an earlier study (Lee et al., 2012). In addition, all models were stratified by state using the strata option in Stata, since this allows for different baseline hazard rates for each state, but the same coefficients across individuals (StataCorp, 2009). It was hypothesized that differences in state policy may result in differential baseline arrest rates. Furthermore, differences in state policy pose a challenge to interpreting the results for the coefficient for care status, since only Illinois provides extended support whereas Iowa and Wisconsin do not. Thus, all the youth in Iowa and Wisconsin exit care around their 18th birthday, while there is variation among youth from Illinois. The log-likelihood ratio test indicated that the change in model fit associated with including state as a stratification variable was significant, $\chi^2(4) = 16.463$, $p=.0024$ for women; $\chi^2(4) = 10.279$, $p=.0359$ for men.

In order to take into account covariates, both parametric and semi-parametric models were also estimated. Parametric models assume that the underlying survival function follows a specific distribution, and several distributions were considered for these models. Model fit was inspected based on the log-likelihood ratio test, which compares nested models, and the Akaike information criterion (AIC) and Bayesian information criterion (BIC) across all models, which compares estimated model values to actual values (Agresti, 2002). Ultimately, both theoretical and empirical considerations suggest that the hazard rate may increase slightly then decrease, indicating that a lognormal or log logistic distribution would be most appropriate. Other common distributions, such as the exponential and Weibull, are monotonic, and thus would not allow for an increasing then decreasing or decreasing then increasing curve (Box-Steffensmeier & Jones, 2004). The lognormal distribution was selected as demonstrating the best fit based on the observed fit statistics. In Stata, the lognormal model is estimated as an accelerated failure-time

model (StataCorp, 2009). Thus, covariates can be interpreted as either accelerating or decelerating time to arrest. Accelerating time to arrest can be thought of as increasing the risk of arrest, and decelerating time to arrest can be thought of as decreasing the risk of arrest.

Semi-parametric models were also estimated since they provide increased flexibility, but less efficiency, than parametric models. The Cox proportional hazards model makes no assumptions about the form of the underlying hazard function (i.e., the data are not assumed to follow a distribution functions) (Box-Steffensmeier & Jones, 2004). However, the Cox model does assume that the hazard rate is proportional, or in other words, parallel. Inspection of diagnostic graphs suggested that the hazard rate crosses at around 365 days, so an interaction term was included for the first year (Blossfeld et al., 2007). The phtest command in Stata also provides a quantitative test of this assumption. After including the interaction term for the first year, the model for women did not appear to violate the proportionality assumption, $\chi^2(20) = 22.09$, $p=.3355$. Although the global test for the model for men did not appear to violate the assumption, $\chi^2(22) = 28.08$, $p=.1730$, three variables appeared to violate the assumption: out of care, $\chi^2(1) = 5.08$, $p=.0243$, sexual abuse history, $\chi^2(1) = 6.16$, $p=.0131$, and diploma at baseline, $\chi^2(1) = 6.03$, $p=.0140$. Thus, three interaction terms with the log of time were included in the models for men. For the violent arrest models, the global test for the proportionality assumption was not significant for both women, $\chi^2(17) = 16.95$, $p=.4575$, and men, $\chi^2(18) = 21.01$, $p=.2791$. The Cox models the effect of the covariate on the hazard rate, and thus can be interpreted as the effect on the risk for arrest.

Although most of the variables included in the analyses had very few missing values, several variables were missing about 10% of their values (caregiver has a criminal record, alcohol or other substance abuse symptoms, and any mental health symptoms) or about 5% of

their values (caregiver had drug abuse problems, physical abuse, and neglect). However, only

72% (n = 530) of the cases had complete values for all variables, which resulted in a loss of 28%

of the overall sample. Multiple imputation was used to address missing data. An iterative

Markov Chain Monte Carlo procedure was used to impute missing values (StataCorp, 2009), and

50 datasets were created. Analyses were conducted on all 50 datasets and averaged estimates are

presented.

Full results are presented below, including the lognormal and Cox models for both men

and women. Although the proportional hazards assumption for men was violated for three

covariates in the general arrests model, two versions of the Cox model are included. The original

model that violates the proportional hazards assumption is included for the sake of comparisons

to the lognormal model, as well as the model that includes the interaction term with the log of

time for the three covariates that violate the proportionality assumption. The lognormal models

are discussed in detail, since the AIC and BIC were lowest for these models, indicating better fit

and efficiency than the estimated Cox models. Overall results were mostly comparable although

key differences are noted.

Results

Figure 4.1 depicts the nonparametric hazard function derived using the Kaplan-Meier

method of estimation. The first plot shows the overall smoothed hazard function, and the second

plot shows the hazard function for males and females separately. These plots indicate that,

similar to estimated hazard functions for recidivism (Gainey et al., 2000; Uggen & Kruttschnitt,

1998), starting at age 18, the risk of arrest initially increases then decreases for foster youth aging

out of care during their transition to adulthood. Moreover, there is a significant difference in the

risk of arrest for males and females, although this difference appears to decline over time. The Wilcoxon, $\chi^2(1) = 53.87$, $p<0.001$, and log-rank test, $\chi^2(1) = 52.38$, $p<.001$, are both significant.

Bivariate lognormal and Cox models were estimated to take into account the effect of care status as a time-varying covariate on arrests. See Table 4.3 for a summary of these results. For general non-procedural arrests, being out of care in the first year ($p<.001$) was consistently associated with decreased time to arrest (i.e., increased risk of arrest) for both men and women. However, the results for care status beyond the first year are in the opposite direction and less robust. The coefficient indicates that being out of care was associated with increased time to arrest (i.e., decreased risk of arrest) after the first year, and was significant in the lognormal models for both men and women ($p<.01$). However, the coefficient was not significant in the Cox model for women. In the models for violent arrests, a similar pattern emerged where the coefficient for out of care status in the first year was consistently significant ($p<.001$) and associated with decreased time to arrest, but the coefficient for care status after the first year was not consistently significant.

Table 4.4 presents the multivariate models estimated for women. In these models, care status continued to be significant while controlling for other factors. Being out of care in the first year was associated with decreased time to arrest in the first year ($p<.001$), but increased the time to arrest in the second year and beyond ($p<.01$). Being arrested prior to baseline was also associated with reduced time to arrest ($p<.001$) and having a resident child was associated with increased time to arrest ($p<.05$). Although bonds to school in the form of a high school diploma or equivalency is marginally significant in the lognormal model ($p<.10$), it is not significant in the Cox model. Bonds to the labor market in the form of employment at baseline was not significant. Notably, similar to the bivariate models, although the coefficients were in the same

direction, the coefficient for being out of care after the first year was not significant in the Cox model (p=.155).

Table 4.5 shows the multivariate models estimated for men. The findings for care status were similar for men. Being out of care in the first year was associated with reduced time to arrest (p<.001), but increased time to arrest after the first year (p<.05). Other factors that had a significant relationship with decreased time to arrest for young men were being arrested prior to baseline (p<.01), self-reported number of types of delinquent behaviors (p<.05), and being black as compared with white (p<.001). Reported mental health symptoms was associated with increased time to arrest (p<.05). Neither bonds to school in the form of a high school diploma or equivalency nor bonds to employment at baseline were significant. A notable difference between the lognormal and Cox models is that in the Cox model, total number of placements was associated with an increased hazard rate and thus decreased time to arrest (p<.05). In the second Cox model, which includes an interaction between out of care status and time, the interaction term is also significant (p<.001). The positive interaction term with time indicates that as time passes, the risk of arrest associated with being out of care increases.

Table 4.6 presents the multivariate models estimated with violent arrests only among women. In these models, the coefficient for being out of care in the first year was significantly associated with decreased time to arrest (p<.001), but care status beyond the first year was not significant. In contrast to the general, non-procedural arrest models, the number of types of physical abuse (p<.05) was associated with decreased time to arrest for a violent crime, but the number of types of neglect (p<.05) was associated with increased time to arrest. Unlike the general arrests model, the coefficient for residential child was not significant, but like the general

arrests model, the other bonds to social institutions, education and employment, were not significant.

Table 4.7 shows the multivariate models estimated with violent arrests only among men. In these models, the coefficient for being out of care in the first year was also significantly associated with decreased time to arrest ($p<.001$), but being out of care beyond the first year was less robust. While the coefficient was marginally significant ($p<.10$) in the lognormal model, it was significant ($p<.05$) in the Cox model, increasing the time to arrest or reducing the risk of arrest. Race was also significant, similar to the general arrest models, but in addition to being black ($p<.001$), being in the other race category ($p<.01$) was associated with decreased time to arrest ($p<.01$). The coefficient for any mental health symptom ($p<.10$) was only marginally significant for the violent arrests model, but bond to employment at baseline ($p<.01$) was associated with increased time to arrest for a violent crime. Bonds to other institutions, education and parenthood, were not significant.

Discussion

This study finds that being out of care in the first year was a consistent predictor for decreased time to arrest for both men and women. For women, the findings for the out of care variable after the first year are not robust, and when they are significant, suggest that being out of care increases time to arrest, which is in the opposite direction of what would be expected. For men, the protective effect of extended care appears to have a declining effect over time and in fact, reverses after the first year so that being out of care is associated with *decreased* risk of arrest. This pattern of the declining effect of extended care over time should not be mistaken as simply reflecting the natural age curve where the risk of arrests naturally declines after ages 19 or 20, since these event history models take into account the baseline risk for arrest over time.

This suggests that there may be an initial "adjustment" period during which former foster youth are at high risk for arrest as they adjust to the independence and absence of supervision that comes with coming of age. Or perhaps, it takes about a year for many to begin to establish the bonds to institutions of adulthood such as the labor market, or to establish a conventional routine that will help deter delinquent behavior. Whatever the reason, it appears that following the first year adjustment period, the risk for arrest declines.

However, it is important to note that this apparent declining risk may be a result of the use of administrative data for the study. If a youth moved out of one of the three states included in the study during their transition period, they would no longer be receiving extended care services in the administrative dataset and thus no longer remain in care. At the same time, the administrative data used for this study does not include arrests from other states. Thus, a youth who may have left the state would have left care from one of our three states, and if they were subsequently arrested in a different state, their arrest would not have been captured by the data used in this study, resulting in a downward bias in arrests over time for those who leave care as opposed to those who remain in care. In other words, the declining risk of arrest for being out of care over time may be biased by those who leave the state, thus inflating the estimates of those who are out of care who have not been arrested.

For women, in addition to being out of care in the first year, having a prior arrest record was also a strong predictor for decreased time to arrest while having a child residing in the home was the strongest predictor for increasing time to arrest. The finding that having a child residing in the home is associated with increased time to arrest supports past studies that also found a protective effect for parenthood among disadvantaged women (Kreager, Matsueda, & Erosheva, 2010; Lee et al., 2012).

For men, there was not a similar protective effect for having a resident child, perhaps because the small number of men with a resident child (ranging from 0-18% over the course of the study) may limit the power to detect this effect. However, having a prior arrest record, being black in comparison to Caucasian men, and having alcohol or substance use symptoms were three factors strongly associated with decreased time to arrest, while having mental health symptoms were most strongly associated with increased time to arrest for males. Although the relationship may seem surprising at first, the measure of having mental health symptoms captures internalizing symptoms associated with depression and posttraumatic stress while delinquent behaviors can be considered externalizing symptoms. Thus, one possible explanation is that if young men are exhibiting internalizing symptoms, they may be less likely to exhibit externalizing symptoms. Or, depression and posttraumatic stress symptoms may have helped the young men garner important mental health services that they needed. Connection to these services may help address underlying issues that may have otherwise surfaced as an externalizing symptom that would have led to an arrest, or alternatively, mental health services may have helped the individual establish the bonds, whether to mental health services, or other necessary services, that would help reduce their likelihood of committing an offense. However, this does not appear to be the case: the second and third interviews indicate that only about one-fourth of the men with depression or mental-health symptoms reported receiving psychological or emotional counseling in the 12 months before the interview.

Several factors that were previously found to have a significant relationship with the risk of arrest, such as age of first placement and placement instability, were not significant in these models. However, differences may be the result of estimating separate models for men and women in this study rather than a single overall model, thus reflecting gendered processes that

would not be evident in a combined model. These models appear to provide more explanatory power for men than for women, as demonstrated by the larger reduction in both the BIC and AIC from the empty to full models. This may reflect that the focus on males within the field of deviance and delinquency has resulted in a better understanding of the processes operating for males, which may drive model development for this study, as well as other studies (Bartusch & Matsueda, 1996; Simpson, 1989). This suggests that more work needs to be done focused on understanding deviance and delinquency among women. Additionally, differences may also be related to differences in the measurement of included covariates. The reduction in both the BIC and AIC indicated that the addition of several variables that were not statistically significant did result in improved model fit. It is possible that a larger dataset, or a dataset with less censoring, would be able to detect smaller effects.

The models for violent arrests support the findings for out of care status in the first year and prior arrest for the general arrest models, but also result in some important differences from the general arrests models. For women, the findings do not suggest a significant relationship between having a resident child and increased time to arrest, but there is a relationship between having a childhood history of physical abuse and neglect and time to arrest, albeit in opposite directions. While physical abuse is associated with decreased time to arrest, neglect is associated with increased time to arrest. In contrast to prior studies that have found evidence for a relationship between sexual abuse and later placement in a juvenile detention center (Jonson-Reid & Barth, 2000; Yampolskaya et al., 2011), history of sexual abuse does not have a clear relationship with adult arrest in this study. The relationship between history of physical abuse and violent arrest may suggest that young people who have experienced violence perpetrated against them as children may have been socialized so that violence is more acceptable than for

those who have not experienced physical abuse. Further study is warranted to better understand the impact of specific types of child maltreatment and specific types of later criminal activities and arrests.

In the models for violent arrests among men, employment status at baseline is significant, while not significant in the general arrests model. In addition, having mental health symptoms are not significant although they were significant in the general arrests models. These differences from the general arrests model suggest that the processes operating for violent offenses may differ from the processes operating for general offenses. For example, employment appears to operate as an institution of informal social control for men in terms of reducing the likelihood of arrests for a violent offense, but may not deter individuals from less serious criminal activities. It is possible that these men are not willing to take the risk of engaging in a high-consequence criminal activity if they are employed, but remain willing to engage in some of the lower-consequence criminal activities. The differing processes operating in general versus violent offenses warrants further study.

Although the results of this study indicate that the protective effect of remaining in care for the first year appears to be robust, this relationship warrants further study. For example, it is not clear how the effect of extended care declines, and what ages might be optimal for providing extended care. Using data collected with a life history calendar method may increase precision, providing the additional specificity that can help answer these questions. In addition, measures that include the number and types of services provided and the dates they were provided can provide additional detail in how extended services can reduce the likelihood of adult arrests, and provide more specific implications for policy, such as whether housing services would be a

critical component of extended care in reducing the risk of arrest, or the relative importance of educational versus employment services.

Additionally, the apparent protective effect of early parenting on reducing arrests also warrants further study. Other studies have found similar evidence that early parenting has benefits for reducing criminal outcomes among young mothers, but there are also significant risks to early parenting such as limits to the acquisition of human capital (Berzin & De Marco, 2010; Guldi, Page, & Stevens, 2007). While marriage has been found to serve as an institution of informal social control for some young men, altering their trajectories away from crime (Sampson & Laub, 1990), it has been suggested that the transition to motherhood may have a similar effect as an institution of informal social control among poor women (Kreager et al., 2010). More work needs to be done to specifically understand the competing forces that may be operating through the transition into parenthood and how they might change as individuals age, such as the forces contributing to deterrence from crime, and the forces that increases other risks such as limited educational attainment for young mothers and possible economic hardship for their children (Berzin & De Marco, 2010).

This study demonstrates the usefulness of modeling time directly into analyses and in conducting separate analyses by gender. Processes are often difficult be capture at a single point in time, as was reflected by the lack of significance in the tabulation of care status and arrests, i.e., a comparable fraction of participants were arrested while they were in care as those who had exited care (see Table 4.1). However, differences in care status emerged after taking into account duration to arrest. Most notably, the protective effect of remaining in care in the first year would have been obscured since after the first year, the effect is in the opposite direction; taking into account time in the analyses helps to reveals these time-dependent processes.

Similarly, estimating models separately for men and women allowed factors that were gender-specific to emerge. For example, among women, having a child residing with them was significant, but not among men. In a combined model, having a resident child may not have been significant. Similarly, among men, having mental health symptoms was significant, but not among women. Although this gender difference warrants further study, this may reflect gender differences that are captured in mental health disorders.

Limitations

A limitation to this study is the use of administrative data, and thus the lack of information on arrests that occurred in other states, as was discussed earlier. In addition, another limitation is the availability of arrest data through age 22 or 23, and thus the window for adult arrests is only 4-5 years. However, this study focused on a specific period, the transition to adulthood period and the transition out of care for former foster youth, and does not attempt to estimate the risk of arrests throughout adulthood. Future studies may be able to utilize a longer follow-up period, but this period immediately following exit from the foster care system is a period of high risk for arrest, and thus the most important period to take into consideration when designing policy and programming for youth who are preparing to age out of the foster care system.

Another limitation was the lack of precise dates for some variables, including educational attainment and enrollment, employment status, and residential child. Although history of having a residential child was pieced together from three interviews subsequent to the baseline interview, they were often asked as point-in-time questions and provided only approximate dates in most cases. Inclusion of exact dates for employment status and educational attainment may have resulted in significant coefficients for those variables, as has been the case in other studies, especially since greater variation in educational attainment emerges after the youth leave care.

Unfortunately, since study participants were not asked about specific dates of employment, educational enrollment, and attainment of postsecondary degrees, time-varying variables for employment and education could not be constructed with the same precision and certainty as resident child and the other variables included in the study.

Conclusion

To answer the four research questions, this study finds that for former foster youth who are aging out of care, the hazard of arrest increases slightly after they turn 18 before steadily declining, reflecting the natural age curve found in other studies and other populations. Second, there are gender differences in the hazard of arrest, and in the factors that are associated with increased or decreased risk of arrest during the transition to adulthood period. This study suggests that extended care during the transition to adulthood for foster youth has a strong effect in the first year after turning 18, but the effect on arrests declines thereafter. Finally, prior arrests are strongly associated with increased risk of arrest after turning 18 for both men and women, and for men, being black (compared to being Caucasian) is also strongly associated with increased risk of arrest. For women, having a resident child is associated with decreased risk of arrest, while for men, mental health symptoms were associated with decreased risk of arrest.

The findings from this study have important policy implications. The finding that extended care during the transition to adulthood for foster youth has a strong effect in the first year after turning 18 but the effect on arrests declines thereafter suggests that providing one year of extended care services may have a significant impact on reducing arrests. These findings suggest that the child welfare system may serve as an institution of social control during the transition to adulthood, and as such, can play an important role in facilitating the youths' transition to adulthood.
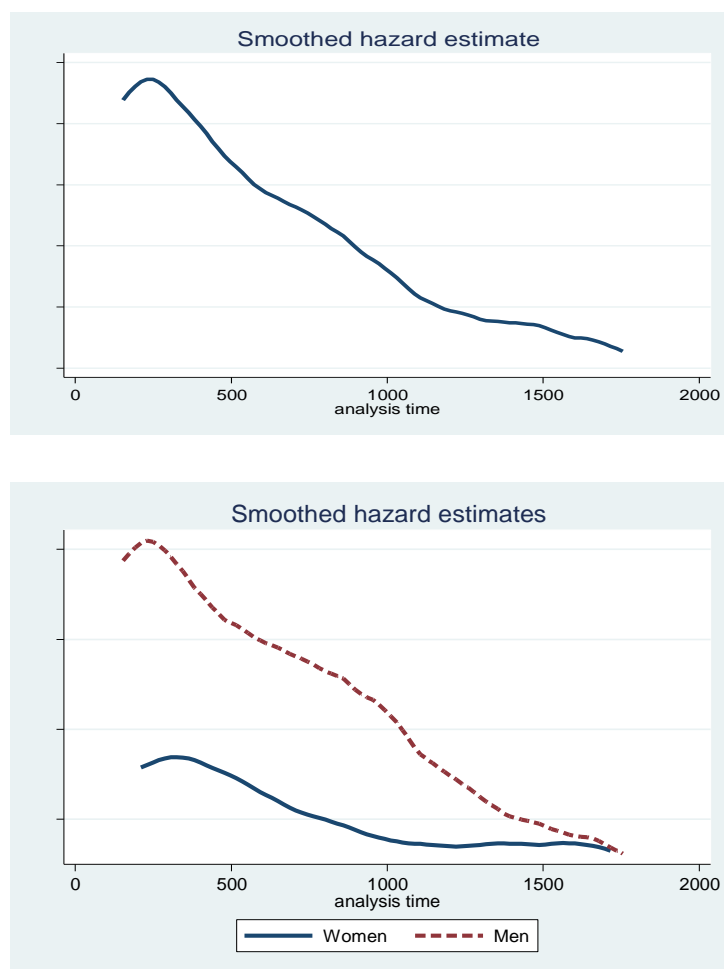
Figure 4.1 Kaplan Meier Hazard Functions

Table 4.1. Arrest History after Age 18

	Total Sample		Women		Men	
	#	%	#	%	#	%
N = 732						
Arrested after age 18	338	46.2	128	34.00	210	59.2
Before Exiting Care	167	49.4	66	51.60	101	48.1
After Exiting Care	171	50.6	62	48.40	109	51.9
N = 583						
Arrested for Violent Offense	167	28.6	52	20.30	115	35.2
Before Exiting Care	78	46.7	29	55.80	49	42.6
After Exit Care	89	53.3	23	44.20	66	57.4

Table 4.2. Descriptive Statistics

	Total Sample (N = 732)		Women (n = 377)		Men (n = 355)	
	% or Mean	(SD)	% or Mean	(SD)	% or Mean	(SD)
Demographic Variables						
Sex						
Male	48.5					
Female	51.5					
Race						
White	28.8		28.4		29.3	
African American	55.3		57.0		53.5	
Other	15.9		14.6		17.2	
State						
Iowa	8.6		9.3		7.9	
Illinois	64.8		67.9		61.4	
Wisconsin	26.6		22.8		30.7	
Individual Risk Factors						
Arrested prior to baseline	51.1		41.1		61.7	
Sum of Types of Delinquency	3.9	(3.08)	3.2	(2.57)	4.6	(3.41)
Alcohol/Drug Use Symptoms	19.7		16.5		23.1	
Mental Health Symptoms	23.0		32.1		13.2	
Count of Types of Neglect	1.8	(2.11)	1.8	(2.14)	1.7	(2.08)
Count of Types of Physical Abuse	1.1	(1.76)	1.1	(1.78)	1.0	(1.75)
Sexually Molested or Raped	29.9		44.8		14.1	
Caregiver Characteristics						
Drug Abuse	42.9		46.7		38.9	
Alcohol Abuse	35.0		34.8		35.2	
Criminal Record	24.0		22.8		25.4	
Child Welfare System Experiences						
Average age at exit from care	19.5	(1.39)	19.8	(1.41)	19.4	(1.36)
Age at first Placement	10.7	(4.04)	10.9	(4.07)	10.5	(4.02)
Between ages 0-5	13.1		13.8		12.4	
Between ages 6-11	35.5		31.0		40.3	
Between ages 12-15	48.8		53.1		44.2	
Between ages 16-18	2.6		2.1		3.1	
# of Placements	6.3	(8.08)	5.7	(7.74)	6.8	(8.39)
Measures of Commitment/Attachment						
HS diploma or equivalency	14.6		15.1		14.1	
Employment Status	35.0		37.7		32.1	
Child(ren)	13.9		20.4		7.0	

Table 4.3. Out of Care Status and Time to Arrest Models

	Lognormal			Cox			Cox (TVC)		
	B	SE		B	SE		B	SE	
WOMEN									
All Non-Procedural Arrests (N = 377)									
Out of Care Status	0.78	0.29	**	-0.46	0.32				
Out of Care in First Year	-3.94	0.41	***	3.48	0.42	***			
All Violent Arrests (N = 256)									
Out of Care Status	0.13	0.45		0.30	0.37				
Out of Care in First Year	-3.97	0.38	***	3.06	1.10	**			
MEN									
All Non-Procedural Arrests (N = 355)									
Out of Care Status	0.75	0.24	**	-0.63	0.26	*	-7.89	1.71	***
Out of Care in First Year	-3.20	0.24	***	3.03	0.31	***	4.34	0.48	***
Out of Care * Time							1.20	0.27	***
All Violent Arrests (N = 327)									
Out of Care Status	0.44	0.32		-0.81	0.37	*			
Out of Care in First Year	-4.21	0.48	***	4.28	0.49	***			

* $p<.05$; ** $p<.01$; *** $p<.001$

Table 4.4. General Arrests Multivariate Models for Women (N = 377)

	Lognormal			Cox		
	B	SE		B	SE	
Out of Care (time-varying)	0.64	0.23	**	-0.48	0.34	
Out of Care in Year 1	-3.05	0.42	***	3.01	0.45	***
Arrested before baseline	-1.26	0.22	***	1.18	0.21	***
# Types of Delinquency	-0.07	0.04	+	0.05	0.04	
Caucasian (ref)						
Black	-0.09	0.28		-0.02	0.29	
Other	0.02	0.32		-0.14	0.33	
Alcohol or Substance Use	-0.47	0.30		0.36	0.28	
Mental Health Symptoms	0.03	0.23		-0.08	0.23	
Types of Physical Abuse	-0.03	0.07		0.09	0.07	
Types of Neglect	0.11	0.06	+	-0.11	0.06	
History of Sexual Abuse	-0.16	0.22		-0.02	0.22	
Caregiver Drug Abuse	-0.27	0.21		0.22	0.22	
Caregiver Criminal Record	0.00	0.25		0.02	0.24	
# of Placements	0.00	0.01		0.00	0.01	
First placement before age 12 (ref)						
First placement after age 12	-0.01	0.20		-0.02	0.20	
Diploma or Equivalency at baseline	0.45	0.25	+	-0.34	0.26	
Employed at baseline	0.07	0.21		-0.21	0.21	
Has a child a baseline	-0.53	0.32	+	0.46	0.31	
Resident Child (time-varying)	0.76	0.29	*	-0.71	0.30	*
Iowa	1.14	0.88				
Wisconsin	0.54	0.39				
_cons	8.48	0.39	***			
ln_sig						
Iowa	0.68	0.26				
Wisconsin	-0.02	0.19				
_cons	0.33	0.08	***			

	Full	Empty		Full	Empty
AIC	574	833		880	1284
BIC	683	861		963	1284

+ *p*<.10; * *p*<.05; ** *p*<.01; *** *p*<.001

Table 4.5. General Arrests Multivariate Models for Men (N = 355)

	Lognormal			Cox			Cox (TVC)		
	B	SE		B	SE		B	SE	
Out of Care (time-varying)	0.59	0.23	*	-0.71	0.26	**	-8.77	1.88	***
Out of Care in Year 1	-2.59	0.33	***	2.91	0.34	***	4.43	0.55	***
Arrested before baseline	-0.73	0.22	**	0.65	0.18	***	0.67	0.18	***
# Types of Delinquency	-0.06	0.03	*	0.05	0.03	+	0.04	0.03	+
Caucasian (ref)									
Black	-1.10	0.26	***	0.87	0.21	***	0.92	0.21	***
Other	-0.30	0.28		0.18	0.25		0.21	0.25	
Alcohol or Substance Use	-0.44	0.27	+	0.36	0.20	+	0.37	0.20	+
Mental Health Symptoms	0.64	0.31	*	-0.47	0.25	+	-0.43	0.25	+
Types of Physical Abuse	-0.06	0.06		0.06	0.05		0.04	0.05	
Types of Neglect	-0.02	0.06		0.02	0.05		0.03	0.05	
History of Sexual Abuse	0.15	0.30		-0.17	0.25		-1.12	1.13	
Caregiver Drug Abuse	0.12	0.23		0.03	0.19		0.02	0.19	
Caregiver Criminal Record	-0.04	0.27		-0.03	0.20		-0.04	0.20	
# of Placements	-0.01	0.01		0.02	0.01	*	0.01	0.01	
Age of First placement									
Between ages 0-5 (ref)									
Between ages 6-11	0.04	0.35		0.10	0.24		0.02	0.24	
Between ages 12-15	-0.08	0.34		0.21	0.26		0.12	0.26	
Between ages 16-18	0.39	0.58		0.05	0.52		-0.02	0.52	
Diploma or Equivalency at baseline	0.15	0.32		-0.26	0.22		-1.79	1.13	
Employed at baseline	0.14	0.21		-0.17	0.17		-0.19	0.17	
Has a child a baseline	-0.13	0.38		0.22	0.27		0.25	0.27	
Resident Child (time-varying)	0.84	0.43	+	-0.28	0.34		-0.23	0.34	
Out of Care x Time							1.33	0.30	***
Sexual Abuse x Time							0.17	0.19	
Diploma x Time							0.27	0.19	
Iowa	0.20	0.43							
Wisconsin	0.12	0.26							
_cons	8.27	0.45	***						
ln_sig									
Iowa	-0.25	0.25							
Wisconsin	-0.29	0.16	+						
_cons	0.52	0.09	***						
	Full	Empty		Full	Empty		Full	Empty	
AIC	690	1139		1120	1972		1104	1972	
BIC	798	1166		1204	1972		1200	1972	

+ $p<.10$; * $p<.05$; ** $p<.01$; *** $p<.001$

Table 4.6. Violent Arrests Multivariate Models for Women (N = 245)

	Lognormal			Cox		
	B	SE		B	SE	
Out of Care (time-varying)	0.35	0.37		0.06	0.43	
Out of Care in Year 1	-2.97	0.52	***	2.69	1.18	*
Arrested before baseline	-1.69	0.41	***	1.43	0.35	***
# Types of Delinquency	-0.11	0.07		0.10	0.06	+
Caucasian (ref)						
Black	-0.25	0.51		0.25	0.43	
Other	0.28	0.60		-0.19	0.55	
Alcohol or Substance Use	0.16	0.57		-0.38	0.44	
Types of Physical Abuse	-0.22	0.10	*	0.23	0.10	*
Types of Neglect	0.26	0.11	*	-0.25	0.11	*
History of Sexual Abuse	-0.62	0.37	+	0.48	0.33	
Caregiver Alcohol Abuse	-0.11	0.40		0.26	0.35	
Caregiver Criminal Record	-0.23	0.46		0.18	0.39	
# of Placements	-0.22	0.36		0.23	0.31	
Age of First Placement						
Before age 12 (ref)						
After age 12	0.01	0.02		-0.01	0.02	
Diploma or Equivalency at baseline	0.75	0.47		-0.63	0.42	
Employed at baseline	-0.22	0.37		0.14	0.33	
Resident Child (time-varying)	0.15	0.40		-0.24	0.33	
_cons	10.46	0.73				
/ln_sig	0.61	0.12				
sigma	1.84	0.22				
	Full	Empty		Full	Empty	
AIC	302	393		418	565	
BIC	376	401		488	565	

+ p<.10; * p<.05; ** p<.01; *** p<.001

Table 4.7. Violent Arrests Multivariate Models for Men (N = 327)

	Lognormal			Cox		
	B	SE		B	SE	
Out of Care (time-varying)	0.48	0.29	+	-0.89	0.37	*
Out of Care in Year 1	-3.95	0.52	***	4.65	0.60	***
Arrested before baseline	-1.17	0.30	***	1.38	0.29	***
# Types of Delinquency	-0.04	0.04		0.04	0.03	
Caucasian (ref)						
Black	-1.31	0.31	***	1.03	0.31	**
Other	-0.96	0.37	**	0.79	0.37	*
Alcohol or Substance Use	-0.10	0.36		-0.07	0.27	
Mental Health Symptoms	0.74	0.44	+	-0.58	0.37	
Types of Physical Abuse	0.06	0.10		-0.03	0.08	
Types of Neglect	-0.06	0.09		0.04	0.06	
History of Sexual Abuse	-0.37	0.41		0.15	0.34	
Caregiver Drug Abuse	0.25	0.29		-0.17	0.25	
Caregiver Criminal Record	-0.25	0.32		0.23	0.28	
# of Placements	-0.02	0.02		0.02	0.01	+
Age of First Placement						
Before age 12 (ref)						
After age 12	-0.14	0.24		0.10	0.23	
Diploma or Equivalency at baseline	-0.46	0.41		0.22	0.28	
Employed at baseline	0.79	0.27	**	-0.66	0.26	*
Resident Child (time-varying)	0.89	0.61		-0.64	0.53	
IL	0.15	0.36				
_cons	9.82	0.59				
ln_sig						
IL	0.30	0.19				
_cons	0.29	0.15				
	Full	Empty		Full	Empty	
AIC	428	751		653	1144	
BIC	516	768		725	1144	

+ $p<.10$; * $p<.05$; ** $p<.01$; *** $p<.001$

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CHAPTER 5: CONCLUSION

In this dissertation, I have explored the ways that institutions may shape and influence the transition to adulthood, and the findings demonstrate the importance of considering how institutional structures influence our lives. Institutions create the structures within which we live our lives, and it is important to understand how those structures may advantage some and disadvantage others. Chapter 2 shows that, although the prosocial socialization process operating through families and schools may not play a role in shaping the transition to adulthood, other characteristics of the family can help explain observed racial differences, and to a limited degree, socioeconomic differences in the pathway to adulthood. Chapter 3 shows that, for foster youth who are preparing to transition out of care, legal system involvement negatively impacts their educational and employment experiences, making it more difficult for them to successfully transition to the institutions of adulthood when they age out of care. Chapter 4 shows that providing extended foster care support during the transition to adulthood reduces the likelihood of legal system involvement in the first year, supporting the hypothesis that the foster care system can play an important role as an institution of social control for former foster youth during the transition to adulthood

Taken as a whole, the intervention of public institutions, depending on the context and manner of intervention, has the potential to increase the likelihood of social exclusion (Chapter 3) or decrease the likelihood of social exclusion (Chapter 4), and certain family characteristics, although not necessarily the socialization process itself, play an important role in shaping the transition to adulthood (Chapter 2).

However, the relationships are complicated, and more attention is warranted to fully unpack the relationships that are operating. For example, Chapter 2 reports that the bivariate relationships indicated that higher scores on family prosocial socialization are associated with an increased likelihood of experiencing an extended transition to adulthood. However, Asian American youth experience the highest rates of an extended transition, but report the lowest scores on family socialization. This apparent contradiction warrants further exploration with a larger sample of Asian American youth in order to disaggregate ethnic groups and unpack the relationships between family socialization and the transition to adulthood, and how parental school expectations, family disruptions, and socioeconomic status influence that relationship. A larger sample would also allow for the examination of the influence of the intersection of race and socioeconomic status, as well as immigrant status.

Further attention should also be paid to how processes may differ across groups. The previous example of the apparent contradiction among Asian American youth from Chapter 2 also raises the question as to whether the processes operating among these Asian American youth may differ from that of their Caucasian and African American peers. In addition, Chapter 3 suggests that while there may be a labeling effect of legal system involvement as a juvenile operating to increase adverse outcomes among women, there may be an opposite, deterrence effect operating among men. Further research is needed in other samples to specifically test whether opposing processes may actually be at work in men and women.

In addition to needing more attention to how processes may differ by race and gender, attention is also needed to observe these processes as they operate over time. Failing to attend to duration of time may result in a lack of significance. Chapter 4 demonstrates that while point-in-time comparisons of adult arrest rates for those who remain in care or have left care are not

significant, differences appear when I take into account duration of being out of care. This occurs since the effect of extended support appears to "wear off" over time.

Together, these chapters have begun to explore how an abstract concept, institutions, concretely influences lives. In Chapters 2 and 3, the influence of multiple institutions in the lives of an individual has been considered. Future work will include a more comprehensive measure of institutions, which may extend beyond the socialization process to take into account other dimensions that may influence the likelihood of an extended or accelerated transition to adulthood, such as family resources and family structure. In addition, future work will include modeling not only the multiple socializing institutions at play in an individual's life, but how each are related to the other (i.e., institutional constellation) in order to more fully consider how institutions actively shape the overall pathway to adulthood.

Institutions play an important but often overlooked role in shaping individual lives. This dissertation demonstrates that institutions can play a role in shaping life trajectories, whether the outcome is intentional or unintentional. For example, while extended institutional support to former foster youth during the transition period can help reduce legal system involvement, the higher likelihood of placement in a detention center as a juvenile for foster youth in comparison to non-foster youth creates additional unintentional disadvantages through education and employment outcomes. Continued attention and energy to understanding how institutions shape lives, particularly how institutions may disadvantage marginalized populations, is critical to helping to identify opportunities for creating more socially just institutions.

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Widom, C. S. (1996). Childhood sexual abuse and its criminal consequences. *Society, 33*(4), 47-53. doi: 10.1007/bf02700307

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Yampolskaya, S., Armstrong, M. I., & McNeish, R. (2011). Children placed in out-of-home care: Risk factors for involvement with the juvenile justice system. *Violence and Victims, 26*(2), 231-245. doi: 10.1891/0886-6708.26.2.231

Curriculum Vitae
JoAnn S. Lee, MSW/MPA
University of Washington School of Social Work
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EDUCATION

2012	**University of Washington School of Social Work,** Seattle, WA
	PhD, Social Welfare
	Dissertation Committee: Emiko Tajima (Chair), Mark Courtney (The School of Social Service Administration, University of Chicago), Tracy Harachi, Sabrina Oesterle
	GSR: Robert Crutchfield
	Dissertation Title: The role of institutions in the transition to adulthood and their impact on pathways to adulthood and adult criminal outcomes
2011	Candidacy Achieved (June 10, 2011)
2011	Certificate: Center for Statistics in the Social Sciences—Statistics Concentration in Social Work
2005	**Columbia University School of International and Public Affairs,** New York, NY
	MPA, Advanced Policy Analysis
2005	**Columbia University School of Social Work,** New York, NY
	MS, Social Work, Advanced Clinical Practice
1999	**Stanford University,** Stanford, CA
	BA, Psychology with Honors, Minor in Public Policy

AREAS OF INTEREST

RESEARCH INTERESTS

- Transition to adulthood for marginalized youth, particularly those involved in government systems (e.g., foster care, juvenile justice); structural/institutional influences; criminal and legal involvement
- Economically disconnected families involved with the child welfare system
- Mental health and substance abuse among Asian American and other ethnic minority youth

TEACHING INTERESTS

- Statistics, research methods, poverty & inequality, social welfare policy, macro practice

PUBLICATIONS

PEER-REVIEWED ARTICLES

Marcenko, M., Hook, J., Romich, J. & **Lee, J. S.** (In Press). Multiple jeopardy: Poor, economically disconnected, and child welfare involved. *Child Maltreatment.*

Lee, J. S. (In Press). An institutional framework for the study of the transition to adulthood. *Youth & Society*.

Lee, J. S., Courtney, M. E., & Hook, J. L. (2012). Formal bonds during the transition to adulthood: Extended foster care support and criminal/legal involvement. *Journal of Public Child Welfare, 6*(3), 255-279.

Courtney, M. E., **Lee, J.**, & Perez, A. (2011).Receipt of help acquiring life skills and predictors of help receipt among current and former foster youth. *Children and Youth Services Review, 33*(12), 2442-2451.

Wilderson, D., **Lee, J.**, & Gibson, E. (2007).A comprehensive housing model for homeless transitional age youth. *IMPACT: A Multidisciplinary Journal Addressing the Issues of Urban Youth, 1*(1), 11-18.

MANUSCRIPTS IN PREPARATION

Lee, J. S., Tajima, E., Herrenkohl, T., & Hong, S. Juvenile justice system penetration and labeling: Evidence from the Lehigh Longitudinal Study. Target journal: *Journal of Research in Crime and Delinquency*

BOOK CHAPTERS

Courtney, M. E., Dworsky, A., **Lee, J. S.**, & Raap, M. (2011).Outcomes during the transition to adulthood for former foster youth. In E. A. Rosman, C. E. Jonson, & N. M. Callahan (Eds), *Adoption factbook V*, pp. 235-42. Washington, DC: National Council for Adoption.

Lee, J. & Ursua, R. (2008).Restorative justice principles in an Asian American community. In K. Van Wormer (Ed.), *Restorative Justice Across the East and the West*. Casa Verde Publishing.

REPORTS

Hook, J. L., **Lee, J. S.**, Marcenko, M. O., & Romich, J. L. (2011). Economically Disconnected Families Involved with Child Welfare Services in Washington State. Seattle, WA: Partners for Our Children.

Courtney, M. E., Dworsky, A., **Lee, J. S.,** & Raap, M. (2010). Midwest Evaluation of the Adult Functioning of Former Foster Youth: Outcomes at Age 23 and 24. Chicago, IL: Chapin Hall.

Courtney, M. E., Hook, J., & **Lee, J. S.** (2010). Distinct Subgroups of Former Foster Youth during Young Adulthood: Implications for Policy and Practice. Chicago, IL: Chapin Hall.

Lyons, S., Courtney, M., Newby, M., & **Lee, J.** (2009). Evaluation of Washington State Department of Social and Health Services Children Administration's Solution Based Casework Practice Model Interim Report: Part II Supervisors' Baseline Survey Results. Seattle, WA: Partners for Our Children.

Lyons, S., Courtney, M., Newby, M., & **Lee, J.** (2009). Evaluation of Washington State Department of Social and Health Services Children Administration's Solution Based Casework Practice Model Interim Report: Part III Social Workers' Baseline Survey Results. Seattle, WA: Partners for Our Children.

Marcenko, M., Newby, M., **Lee, J.,** Courtney, M., & Brennan, K. (2009). Evaluation of Washington's Solution Based Casework Model Interim Report: Part IV Baseline Parent Survey Analysis by State, Region, and Service Context. Seattle, WA: Partners for Our Children.

Lee, J. S. & Wilderson, D. (2009). HIV Prevention Special Evaluation Project: Housing and HIV Prevention Services. San Francisco, CA: Larkin Street Youth Services.

Sim, S. C., Peng, C. J., Lee, A., Chung, E., **Lee, J.** (2004). Lessons learned from an initiative to sustain health insurance in Chinatown after September 11th. New York, NY: The Commonwealth Fund.

PEER-REVIEWED PRESENTATIONS

Waithaka, E.N. & **Lee, J. S.** (2012). Race, gender, and class in transitions to adulthood: A demographic profile. Poster presentation, Society for Research in Child Development: Transitions from Adolescence to Adulthood Themed Meeting, Tampa, FL

Hook, J., **Lee, J. S.**, Marcenko, M., & Romich, J. (2011). Double-jeopardy: Economically disconnected families in the Washington State child welfare system. Symposium presentation, Association for Public Policy Analysis and Management Fall Research Conference, Washington, DC

Lee, J. S. (2011). An institutional framework for the study of the transition to adulthood. Symposium presentation, Conference on Emerging Adulthood, Providence, RI

Lee, J. S., Courtney, M. E., & Hook, J. L. (2011). Formal bonds during the transition to adulthood: Extended foster care support and criminal/legal involvement. Symposium presentation, Society for Social Work and Research, Tampa, FL

Courtney, M. E., Hook, J. L. & **Lee, J. S.** (2011). Distinct subgroups of former foster youth during young adulthood: Implications for policy and practice. Symposium presentation, Society for Social Work and Research, Tampa, FL

Hook, J. & **Lee, J.** (2010). Transition to Adulthood for Foster Youth: Recent Findings on

Employment and Crime. Brown bag discussion, Chapin Hall, Chicago, IL

Courtney, M., Hook, J., & **Lee, J.** (2010). Full speed or treading water? Distinct needs of subgroups of foster youth in transition. Workshop presentation, Pathways to Adulthood National Independent Living/Transitional Living Conference, Chicago, IL

Courtney, M., **Lee, J.**, & Eyal, Y. (2010). Parents' report of engagement: Parent and organizational factors. Symposium presentation, Society for Social Work and Research, San Francisco, CA

Lyons, S., Newby, M., **Lee, J.**& Courtney, M. (2010). Caseworkers' perception of parents' engagement. Symposium presentation, Society for Social Work and Research, San Francisco, CA

Lee, J., & Courtney, M. (2009). Mental health and crime outcomes for youth transitioning out of the foster care system. Roundtable presentation, American Public Health Association Annual Meeting & Exposition, Philadelphia, PA

Lee, J., Wilderson, D., & Rodriguez, B. (2008). Housing status and HIV risk behaviors: Implications for prevention services for homeless youth. Oral presentation, Housing and HIV/AIDS Research Summit III, Baltimore, MD

Lee, J., Wilderson, D., & Rodriguez, B. (2007). Housing status and HIV risk behavior: A prevention service model for homeless youth. Poster presentation, American Public Health Association Annual Meeting & Exposition, Washington, DC

RESEARCH EXPERIENCE

RESEARCH PROJECTS

2011 – present **Economically Disconnected Families in the Washington State Child Welfare System**
West Coast Poverty Center & Partners for Our Children, *University of Washington*
Conduct analyses on survey data to describe the prevalence of economic disconnection among child-welfare involved families; identify correlates of economic disconnection; and explore the relationship between economic disconnection and parental engagement. *Research Assistant to Drs. Jennifer Hook, Maureen Marcenko, and Jennifer Romich.*

2008 – 2010 **Midwest Evaluation of the Adult Functioning of Former Foster Youth**
Partners for Our Children, *University of Washington* & Chapin Hall, *University of Chicago*
Analyze survey data from the Midwest Study to evaluate mental health, juvenile justice outcomes and other foster care experiences among a sample of youth aging out of care. Examined utilization of Independent Living Services among former foster youth during the transition to adulthood. Estimate multilevel and proportional hazards models of the relationship between extended care and

criminal and legal outcomes. *Research Assistant to Dr. Mark Courtney.*

2008 – 2010 **Evaluation of Washington's Solution Based Casework Practice Model**
Partners for Our Children, *University of Washington*
Prepared data and provided quality assurance for survey data to evaluate the implementation of a practice model. Analyzed baseline data collected from supervisors, social workers, and parents. Wrote and revised reports, briefs and manuscripts for publication. *Research Assistant to Dr. Mark Courtney.*

2006 – 2008 **HIV Prevention Special Evaluation Project: Housing and HIV Prevention Services**
Larkin Street Youth Services, *San Francisco, CA*
Conducted analyses on intake and administrative data to explore the relationship between housing status and risk behaviors among youth, and the relationship between baseline risk behaviors and HIV prevention service provision. Estimated logistic and multinomial logistic regression models. *Manager of Research and Evaluation to Dr. Dina Wilderson.*

2004 – 2005 **Health Insurance Choices of Dislocated Chinatown Workers after September 11th**
Asian American Federation of New York, *New York, NY*
Compiled results into a written summary of qualitative study about 9/11 health insurance initiative for the New York Chinatown community. Analyzed transcripts from 6 focus groups with a team of 2 others. Developed policy framework for immigrants and health insurance based on findings from study. *Research Intern to Dr. Shao-CheeSim.*

TEACHING EXPERIENCE

School of Social Work, University of Washington

2012, Fall   Sole Instructor, MSW Program, *Statistics in Social Work*
2011, Fall   Sole Instructor, MSW Program, *Statistics in Social Work*
2009, Fall   Teaching Practicum, MSW Program, *Poverty and Inequality*

Guest Lectures:
Feb 3, 2012   "Using Statistics as a Social Worker," MSW Program, *Advanced Social Welfare Research & Evaluation*
Sept 30, 2011 "Conducting Literature Reviews," BASW Program, *Introduction to Social Welfare Research*
May 4, 2011   "Statistics and the Social Worker," MSW Program, *Advanced Social Welfare Research & Evaluation*
April 20, 2011 "Using Excel for Data Analysis," MSW Program, *Advanced Social Welfare Research & Evaluation*

School of International and Public Affairs, Columbia University

2004, Fall   Teaching Assistant, SW PhD/MPA Program, *Quantitative Techniques I*

2005, Spring   Teaching Assistant, SW PhD/MPA Program, *Quantitative Techniques II*

OTHER PROFESSIONAL EXPERIENCE

MACRO PRACTICE EXPERIENCE

2006 – 2008   **Manager of Research and Evaluation,** *Larkin Street Youth Services,* San Francisco, CA
2005 – 2006   **Senior Policy Analyst,** *Department of Homeless Services,* New York, NY
2004   **Graduate Intern,** *Department of Small Business Services,* New York, NY

MICRO PRACTICE EXPERIENCE

2004 – 2005   **Family Therapist Intern,** *Adolescent Portable Therapy****, Vera Institute of Justice,*** New York, NY
2002 – 2003   **MSW Student Intern,** ***Charles B. Wang Community Health Center***, New York, NY
1999 – 2000   **Youth Intervention Worker,** *Restorative Justice Program,***Case Manager,** *Project Reconnect,* ***Asian American Recovery Services, Inc.,*** San Jose, CA
1998   **Direct Care Staff,** ***Wediko Children's Services Summer Program,*** Boston, MA

GRANT REVIEW EXPERIENCE

June 2012   Children's Bureau, Administration for Children and Family, Department of Health and Human Services, Washington, DC
August 2011   Children's Bureau, Administration for Children and Family, Department of Health and Human Services, Washington, DC

FELLOWSHIPS and OTHER HONORS

2010 – 2012   Minority Doctoral Fellow, Minority Fellowship Program,
              Council on Social Work Education
2010 – 2011   Member, Student Advisory Council, University of Washington
              School of Social Work
2008 – 2009   Blalock Fellow, Center for Statistics and the Social Sciences,
              University of Washington
2008 – 2009   Diversity Fellow, Graduate Opportunities and Minority Achievement Program,
              Graduate School, University of Washington
1999   Psi Chi International Honor Society in Psychology

PROFESSIONAL AFFILIATIONS

2010 – 2012   Member, Council on Social Work Education (CSWE)
2007 – 2012   Member, Society for Social Work and Research (SSWR)
2005 – 2012   Member, National Association of Social Workers (NASW)
2007, 2009   Member, American Public Health Association (APHA)