

ABSTRACT

HENDRIX, JOSHUA ADRIAN. Angels and Loners: An Examination of Abstinence Processes and Abstainer Heterogeneity. (Under the direction of Toby L. Parcel and Charles R. Tittle).

Although most adolescents do not frequently engage in delinquency, the majority do participate in criminal behavior at some point during their formative years. What accounts for the small minority who abstain entirely? Moffitt's (1993) life-course persistent and adolescent-limited model of offending suggests that abstinence can be a function of a smaller-than-normal maturity gap, structural barriers to delinquency learning opportunities, atypical personal characteristics, or some combination of these. Although some empirical attention has been given to the atypical personal traits proposition, no research to date has examined Moffitt's abstinence thesis in its entirety. A complete test requires an examination of the ways in which abstainers differ from non-abstainers, as well as from one another. Using data from the National Longitudinal Survey of Youth 1979: Children and Young Adults (n=5,003), latent trajectory analysis is presented to produce delinquency taxonomies, to evaluate key theoretical predictors of abstinence, and to elaborate on the distinguishing characteristics between abstaining and non-abstaining adolescents. Following this, latent class analysis is used to examine within-group heterogeneity, highlighting unique variation in developmental traits among abstaining youths. Models predicting the odds of taxonomy membership indicate some support for each of Moffitt's abstinence propositions. Additionally, results from latent class analysis confirm that not all abstainers are alike and support the notion that there are both prosocial and antisocial modes of abstinence. These findings may help to clarify inconsistent findings from past studies and they are potentially informative for understanding the early precursors to delayed criminal careers.

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Angels and Loners: An Examination of Abstention Processes and Abstainer Heterogeneity

by
Joshua Adrian Hendrix

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APPROVED BY:

Toby L. Parcel
Committee Co-Chair

Charles R. Tittle
Committee Co-Chair

Patricia L. McCall

Anna Manzoni

DEDICATION

To Miranda and Xyler...

“Once upon a time in Spain there was a little bull and his name was Ferdinand. All the other little bulls he lived with would run and jump and butt their heads together, but not Ferdinand. He liked to sit just quietly and smell the flowers. He had a favorite spot out in the pasture under a cork tree. It was his favorite tree and he would sit in its shade all day and smell the flowers. Sometimes his mother, who was a cow, would worry about him. She was afraid he would be lonesome all by himself. ‘Why don’t you run and play with the other little bulls and skip and butt your head?’ she would say. But Ferdinand would shake his head. ‘I like it better here where I can sit just quietly and smell the flowers.’”

— *The Story of Ferdinand*

“I don’t want you sitting around in here all summer fiddling with this stuff like you did last summer and the one before. I know you’re smart, and I’m proud of you. I want you to get out into the fresh air and make some friends. Run around, scrape your knees, get dirty. Climb trees, hop fences. Get into trouble for crying out loud. Not too much, but some.”

— *The Sandlot*

BIOGRAPHY

Joshua Adrian Hendrix was born in Atlanta, Georgia, but grew up primarily in North Carolina. In 2005, he earned his degree in Criminology from North Carolina State University. Joshua returned to the department of Sociology and Anthropology at NCSU in the fall of 2009 to pursue his graduate-level education in family sociology and criminology. He completed a Master of Arts degree in December of 2011; his thesis focused on the effects of parental work schedules on parent-child bonds, parental supervision, and adolescent delinquency. During his tenure at NCSU, Joshua has been an instructor of criminology and social deviance and has assisted with a number of other online and face-to-face undergraduate courses. He has been fortunate to work with a number of outstanding scholars from the department, all of whom have helped to shape his intellectual and personal identity.

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CHAPTER 1

INTRODUCTION

1.1 Is it 'Good to Be Bad'?

Most adolescents engage in delinquent behavior at some point during their teenage years (Elliott, Huizinga, and Menard 1989; Moffitt and Silva 1988; Piquero, Brezina, and Turner 2005). For example, Farrington, Ohlin, and Wilson (1986) estimate that up to four-fifths of males have contact with the police for minor forms of criminal behavior during their lifetimes, and the bulk of these transgressions occur during adolescence. Such misconduct can be concerning, given that it can brand teenagers with a criminal record, impede their chances of graduating from high school, disrupt positive family relationships, or complicate successful transitions into conventional adult roles (DeWit et al. 2000; Hawkins et al. 1997). However, moderate delinquency may not be invariably negative. Considering that most adolescent delinquency is social in nature (i.e., committed with friends or in peer groups) (Tolone and Tieman 1990; Warr 1996), it may signal that teenagers possess socially valued characteristics and that they have found acceptance among their peers. Likewise, it might indicate that teenagers are open to new experiences, that they are willing to take risks, and that they are in other ways progressing through normative stages of adolescent development. As such, a handful of scholars in recent decades have suggested that temperate levels of delinquent behavior in adolescence is in fact quite normal (Emler and Reicher 1995; Pedersen and Wichstrom 1995), and that total abstention may be counter-normative,

antisocial, and even reflective of something concerning or atypical about those who abstain (Shedler and Block 1990; Tolone and Tieman 1990).

Terrie Moffitt's life-course persistent and adolescent-limited model of offending (1993; with Walsh 2012) is one prominent theoretical effort that explicitly challenges the notion that non-offending is unvaryingly positive and reflective of healthy adjustment among teenagers. Specifically, she suggests that some teenagers possess atypical personal characteristics that repel other adolescents, isolating them from peer activities in which delinquency occurs and ultimately "forcing" them into abstention. At first glance, this argument seems counterintuitive, as it contradicts conventional criminological wisdom that equates non-offending with conformity and delinquency with psychological or social maladjustment. However, Moffitt's claim is not totally unfounded, as it was derived from a number of earlier empirical studies suggesting that individuals who abstain entirely from alcohol, illicit drugs, or criminal behavior tend to be more timid, sullen and unfriendly, closed-off from new experiences, and socially withdrawn than those who experiment with misbehavior (Bentler 1987; Farrington and West 1990; Hogan et al. 1970; Jones 1968, 1971; Shedler and Block 1990; West 1982).

The years following the debut of Moffitt's atypical personal traits supposition saw a number of empirical studies seeking answers for whether or not abstainers truly are troubled social isolates deserving of public concern. Her argument may have struck a chord with sociology and psychology scholars because it emerged in a historical context increasingly preoccupied with understanding the social precipitants of school rampage shootings. Since

the late 1990s, acts of mass violence in Littleton, Colorado (i.e., Columbine), Jonesboro, Arkansas, and later at Virginia Tech University and Sandy Hook Elementary School have attracted prodigious levels of media attention, initiating widespread debates about mental health resources in the U.S., gun control, and best practices for detecting unstable youths before tragic events unfold. These discourses have been permeated with descriptions of rampage shooters as “loners,” “outcasts,” and extraordinarily fragile youth who fly under the radar of schools officials, eventually inflicting mass violence in order to exact revenge for years of endured torment and rejection brought on by their peers. Thus, Moffitt’s description of abstaining youths as reclusive outsiders resonates with a collective American concern for school safety and seemingly offers guidance in an overwhelmingly uncertain social milieu. Unsurprisingly, a pressing issue for a number of scholars has been to address whether abstention is indeed a red flag for deeper emotional and psychological problems.

Generally speaking, the strategy among research efforts that address Moffitt’s atypical personal traits proposition has been to compare abstainers to non-abstainers on a range of social, developmental, and psychological adjustment measures and then to draw conclusions regarding which group of adolescents warrants more concern. These studies have not generated a significant amount of support for the notion that abstainers are maladjusted or antisocial; rather, they tend to portray non-offending youths as relatively well-adjusted and more strongly attached to prosocial individuals and institutions than their offending counterparts (Brezina and Piquero 2007; Epler, Sher, and Piasecki 2009; Milich et al. 2000; Piquero, Brezina, and Turner 2005; Tucker et al. 2006; Vaughn et al. 2011; Walton

and Roberts 2004; White, Bates, and Buyske 2001; Wolff and Wolff 2002). Consequently, interest in abstainers has waned, with some leading scholars concluding that abstainers are not abnormal, and they are not forced into non-offending (Cernkovich, Kaukinen, and Giordano N.d.).

However, efforts to lower the curtain on Moffitt's abstention thesis may be premature. A close comparison of Moffitt's seminal publication on offending taxonomies with recent empirical research indicates that researchers have taken a limited and overly-simplistic approach to testing her ideas regarding how and why some adolescents abstain. Specifically, the notion that abstainers possess atypical personal traits and that they are rejected from their peers is only one of three possible pathways into abstention as outlined in the manuscript. Moffitt does not argue that *all* abstainers are abnormal and socially withdrawn, only that this is one process by which *some* adolescents might abstain. Abstention may also occur when adolescents perceive a smaller-than-normal maturity gap or when they are exposed to structural barriers that block them from delinquency learning opportunities (Moffitt 1993; Moffitt and Walsh 2012). Only one known study explicitly tests each of these propositions (see Owens and Slocum 2012), leaving us with little understanding about the validity of Moffitt's claims. Accordingly, the first overarching goal of the present study is to better understand the extent to which Moffitt's abstention processes are empirically supported and to garner information about the ways in which abstaining youths differ from non-abstaining adolescents. Part of this effort will be devoted to enhancing the knowledge base regarding maturity gap perceptions and structural barriers; however, it will

also broaden our understanding of atypical personal traits and their effects on delinquent and non-delinquent behavior.

The second goal is to evaluate how abstaining adolescents differ from one another. Examining within-group heterogeneity may help to explain why some studies portray abstainers as “loners,” whereas others describe them as extraordinarily prosocial. The fact that most recent efforts reject the notion that abstainers are socially introverted does not definitively indicate that these types of adolescents do not exist; they may simply be present in smaller numbers and thus more likely to go unnoticed. Analytical methods appropriate for identifying subgroups have not been invoked in studies of abstainers. Rather, offending youths are typically compared to abstaining youths, and conclusions are drawn from diagnostic methods based on group-averages (e.g. logistic regression). These methods might suggest that abstainers *on average* are better adjusted in various ways than non-abstainers, but they do not highlight potentially important variation on developmental, social, or psycho-emotional characteristics among abstaining youths. Although some scholars have recently voiced the possibility of multiple (i.e., prosocial and antisocial) pathways into abstention (Ollendick, Seligman, and Butcher 1999; Owens and Slocum 2012), few explicit attempts have been made to uncover and explain this possibility. Examining key points of variation among abstaining youths will also help to elaborate on the compatibility between the abstention processes. While Moffitt argues that two or more of the processes may sometimes overlap, research has done little to explain the circumstances under which process permutations are most common.

The next sections begin by outlining Moffitt's (1993) life-course persistent (LCP) and adolescent-limited (AL) model of offending, which sets forth the logic of the abstention processes. Following this, I explicate Moffitt's three abstention processes.

1.2 The Life-Course Persistent and Adolescent-Limited Model of Offending

1.2.1 Adolescent-Limited Offending

Moffitt's (1993) life-course persistent and adolescent-limited model of offending classifies all individuals into one of three groups based on their offending trajectories. The first, and by far the most numerous group, "adolescent-limited offenders" are law-abiding throughout the life-course except during adolescence, a time period during which they offend to alleviate a mismatch between their biological and social capabilities. Although pubertal changes communicate to adolescents that they are ready for adult experiences, westernized society forbids them from these privileges and harvests a unique type of adolescent strain throughout the time period Moffitt refers to as the "maturity gap" (1993:16). Pubescent adolescents in the United States may feel strained by their inability to work, to receive a driver's license before the age of sixteen, or to buy alcohol before age twenty-one. They may also feel repressed by their incapacity to marry and have children, to set up their own households, to become financially independent from their parents, and to make other important decisions about their lives. Hence, similar to other theoretical perspectives, lacking volition and control over one's life (i.e., perceiving autonomy deficits) is the key explanatory variable for *most* adolescents' delinquency (see Deci and Ryan 2000; Tittle 1995).

Adolescents who perceive autonomy-deficits during the maturity gap seek out ways to enhance their sense of adulthood, which often means rebelling against parents and other adults who deny them of grownup privileges. To achieve this, they mimic the behaviors of their peers who do not appear to suffer from the maturity gap— adolescents who drink alcohol, smoke cigarettes, have sex, and enjoy other freedoms that most youths are denied. Imitating delinquent behaviors assuages adolescents' feelings of frustration and psychological strain that develop during the maturity gap and affords youths with access to adult resources and an enriched stock of autonomy. Importantly, the theory later implies that youths' acceptance into peer groups is a critical component of adolescents' delinquent behaviors (see Moffitt and Walsh 2012). Specifically, it is within peer groups that criminogenic ideas, skills, and values are transmitted, where delinquent opportunities most often arise, and where criminal behaviors can be modeled and learned (Burgess and Akers 1966). Taken together, the model of adolescent-limited offending is compatible both with strain (Agnew 1992) and social learning theories in criminology (Akers 1998; Sutherland 1947), which respectively posit psychological tension (i.e., perceiving a lack of adulthood / autonomy) and the transmission of criminal ideas as key mechanisms for explaining criminal behavior.

1.2.2 Life-Course Persistent Offending

The peer groups in which teenagers are accepted and that provide opportunities for learning delinquent behaviors are typically led by “life-course persistent offenders,” or those

individuals who engage heavily in a wide variety of antisocial behaviors beginning in early childhood and extending into adulthood (Moffitt 1993). Through direct interaction, temporarily non-offending youths (i.e., adolescent-limited offenders) mimic the rebellious behaviors of persistent offenders, making the latter group an important link in the diffusion of criminogenic ideas and behaviors. Although life-course persistent offenders participate in rebellious behaviors pervasively, the particular types of behaviors they engage in may vary with age as criminal opportunities change. For example, they are more likely than other children to bite and hit during their preschool years and to engage in theft and truancy by age ten. They are also more likely to sell drugs and steal cars by age sixteen, to commit robbery and rape by age twenty-two, and to perpetrate fraud and domestic violence by age thirty (Moffitt 1993:6). Hence, although the content of their antisocial behavior changes throughout the life-course, persistent offenders exhibit some type of conduct problem at virtually every life-stage. Moffitt refers to persistent engagement in a diverse array of criminal or antisocial behaviors as "heterotypic continuity" (1993:6). Her description of life-course persistent offenders sounds qualitatively similar to the chronic offenders that other studies identify as the small segment of the population that accounts for a substantial amount of all officially recorded criminal offenses (Tracy, Wolfgang, and Figlio 1990).

Life-course persistent offenders display heterotypic continuity as a function of pre- or post-natally induced neuropsychological deficits (Moffitt 1993). Neuropsychological deficits, also known as cognitive impairments, refer to biological characteristics that block important mental processes or that disrupt intellectual performance (Coren, Ward, and Enns

2003). Deficits may include (but are not limited to) mental retardation, learning disorders, dyslexia, or other types of cognitive or memory impairment (Belanoff et al. 2001). These deficits may arise from mothers' use of drugs, cigarettes, and alcohol during pregnancy, poor prenatal nutrition, brain injuries, or birth complications, although they are often genetically transmitted (Lahey et al., 1990; Plomin and Bergeman 1990). Impairments may also cause or co-occur with other criminogenic traits such as low impulse control and low levels of emotional intelligence (Hertzog 1983; Rothbart and Derryberry 1981; Rutter 1983). And although positive and stable home environments can redirect individuals' criminal susceptibilities, children born with neuropsychological impairments are especially likely to live in adverse home environments, which enhance the harmful effects of these deficits (Lahey et al, 1990; Plomin and Bergeman 1990).

Furthermore, deficits have both direct and indirect effects on criminal behavior. Low levels of cognitive ability or executive functioning may directly attenuate individuals' abilities to calculate the costs and benefits associated with criminal opportunities in conventional ways (McGloin and Pratt 2003), or they may set into motion a "downhill snowball" of cumulative disadvantages (i.e., "cumulative continuity") (Moffitt 1993:11). For example, individuals with impairments may face difficulty in educational environments, which may lead to challenges in securing and maintaining employment, interpersonal problems, and issues related to their perceived marriageability among potential romantic partners. In turn, life-course persistent offenders may have less access to marital and occupational bonds that shield adults from criminal lifestyles (Sampson and Laub 2005).

Whereas most teenagers desist from crime as they gain access to conventional sources of adult capital, life-course persistent offenders do not transition out of their criminal tendencies in part because their antisocial histories have prevented a stable foundation upon which a conventional future could be built (Moffitt 1993).

It is important to acknowledge that although Moffitt emphasizes youths' access to persistent offenders for the successful imitation of delinquent behaviors, it is logical to expect that strained adolescents may also learn rebellious behaviors from other adolescent-limited offending youths. Specifically, youths who offend moderately and non-persistently may temporarily appear to possess adult-like resources and to experience freedom from the maturity gap in ways similar to persistent offenders. In fact, because most teenagers do participate in delinquency during adolescence, it may be difficult for non-offending youths to distinguish between the two offending types in everyday settings. Therefore, while Moffitt's theory underscores access to persistent offenders as the critical link between psychological strain that derives from the maturity gap and delinquent behavior, it is imperative to also understand youths' integration with non-persistent offenders to fully address their access to delinquency learning opportunities.

1.2.3 Abstention

A minority of individuals do not offend at all, a group that Moffitt calls "abstainers." Unique to most criminological theories, Moffitt incorporates abstainers explicitly into her theoretical structure and recognizes that stable non-offending, just like moderate and serious

offending, deserves theoretical explanation. After all, “rate-busting” (i.e., extreme conformity) violates the middle-class value of moderation; that is, it may be appropriate to engage in some activities (even risky activities) moderately but deviant to participate in such activities excessively or never at all (see Tittle and Paternoster 2000). Certainly, if the vast majority of individuals do offend during adolescence, it is necessary that scholars begin to understand the differences among those who do not, as abstainers may represent the counterfactual to offenders and thus reveal much regarding characteristics that offending adolescents lack (or vice-versa). Beyond this, clarifying the mechanisms that promote abstention may be informative for our understanding of late-onset offenders, individuals who abstain or engage in very little criminal behavior throughout adolescence but begin offending in adulthood (Farrington, Ttofi, and Coid 2009). Moffitt’s discussion suggests that abstention is not only statistically rare; it also is a complex and differentiated process.

The following chapter describes the abstention thesis in detail. I begin by describing each abstention process. Because Moffitt’s discussion of each process is relatively brief, I make efforts to expand her ideas. Following these discussions, I review recent empirical literature that has explicitly or implicitly tested one or more of the abstention propositions.

CHAPTER 2

ABSTENTION PROCESSES

2.1 Why Do They Abstain?

Moffitt (see Moffitt 1993 and Moffitt and Walsh 2012) suggests that abstention is a function of one of three conditions: a smaller-than-normal maturity gap, structural barriers that block delinquency learning opportunities, or atypical personal characteristics that alienate some adolescents from their peers. According to the theory, experiencing one or more of these conditions motivates developmental processes from which abstention is an outcome. The first condition, a smaller-than-normal maturity gap, promotes abstention because the key causal mechanism for non-persistent offending (i.e. a lack of autonomy) is absent. The latter two conditions foster non-offending because the transmission of criminal ideas between adolescents is interrupted.

2.1.1 A Smaller-Than-Normal Maturity Gap

Whereas most teenagers offend because of the discrepancy between their social and biological abilities, some youths experience a smaller-than-normal maturity gap and thus are not motivated to learn and mimic delinquent behaviors from their peers. There are two general conditions under which adolescents may experience a smaller-than-normal maturity gap: when biological capabilities are low enough to be more on par with social capabilities, and when social capabilities are high enough to be more in line with biological capabilities. Figure 1 displays maturity balance perceptions graphically.

2.1.1a Low Biological Capabilities

Adolescents experience low biological capabilities when they undergo late pubertal development. North American adolescent girls typically experience key pubertal changes (i.e., breast development and menarche) around age twelve, whereas most boys exhibit signs (i.e., testicular enlargement) between ages twelve and fourteen (Anderson, Dallal, and Must 2003; Marcell 2007).¹ A small group of children surpass the typical ages of pubertal onset (“late bloomers”) as a function of malnutrition, systemic disease, defects of the reproductive system, or “constitutional delay,” in which puberty is delayed for several years but occurs normally once it begins (Traggiai 2003; Zadik, Sinai, and Zung 2004). Because biological changes have not signaled to them that they are ready for adult privileges, late bloomers do not perceive any need to enhance their sense of adulthood, and as a result they do not imitate the rebellious behaviors of their peers (Moffitt 1993). The logic of Moffitt’s argument is compatible with the “developmental stage termination hypothesis” (Petersen and Taylor 1980), which contends that early rather than late pubertal maturation exacerbates the risk for behavioral difficulties because adolescents are propelled into biological adulthood faster than their social and psychological skills can adapt. Indeed, a number of empirical studies have shown that early pubertal onset corresponds with higher levels of interpersonal conflict, negative emotions, exposure to criminal opportunity, and delinquency during adolescence

¹ Whereas Moffitt’s life-course persistent and adolescent-limited model of offending is based on a study of offending in New Zealand, my discussion of abstention is positioned within the context of the United States. Accordingly, I present pubertal timing estimates for North American adolescents.

than does late or on-time development (Barnes, Beaver, and Piquero 2011; Crockett and Petersen 1987; Hill et al. 1985a, 1985b; Petersen 1985; Steinberg 1988).

2.1.1b High Social Capabilities

Alternatively, some youths may undergo early or on-time pubertal development but perceive a smaller-than-normal maturity gap because they have adult-like responsibilities or are permitted to enact adult-like roles in specific contexts, thus enhancing their social capabilities (Moffitt 1993). Here, adolescents may perceive themselves to be more accountable, autonomous, and mature than their peers, which in turn reduces the maturity gap and diminishes their motivation to mimic delinquent behaviors. Moffitt offers little guidance in terms of how precisely adolescents may obtain a sense of adulthood that allows them to bypass the maturity gap, speculating that some youths might belong to religious subcultures in which there are opportunities for children to take on adult-like roles. Existing on the fringes of mainstream society, these groups may have unique norms regarding the roles and responsibilities that are appropriate for children. While her discussion lacks explicit examples, we might illustrate this process by considering children raised in Amish communities who are expected to work alongside adults (e.g., in farming or construction), which could conceivably provide such children with a certain sense of adulthood (Hostetler 1993; Hubler and Hupcey 2002).² Despite this, subcultures such as these are relatively

² Although Amish children may derive a sense of adulthood through their experiences with adult-like work, some misbehavior is tolerated, and even expected of them during their teenage years by elders in the

scarce and youths who reside in such contexts are not often accessible or available for study alongside children from the general population.

Fortunately, there are several outlets through which adolescents could conceivably garner a sense of adulthood and thereby experience a smaller-than-normal maturity gap other than belonging to a religious subculture. One such outlet is through paid work (for a similar argument see Owens and Slocum 2012). Working for pay during adolescence can reduce adolescents' financial dependence on parents and allow teens to make decisions about how to spend their own money (Mortimer 2010; Shanahan et al. 1996). Employment can also encourage self-reliance and autonomous decision-making, especially when it offers apprenticeship experiences relevant to future employment or when it emphasizes independent thinking, leadership skills, and complex work tasks (Anderson 1999; Finch et al. 1991; Greenberger and Steinberg 1986; Hamilton 1990; Mortimer 2010). Some research suggests that teenagers who work for pay report that their employment experiences have helped them to develop a sense of responsibility, to manage their time and schedules, to cultivate their

community. During adolescence (sometimes referred to as “rumspringa”), Amish children may experiment with the outside world until they are read to find a spouse, undergo baptism, and fully devote themselves to the Amish way. For many Amish youths, this time period is characterized by relatively innocuous expressions of freedom in which they take driving lessons or go on dates with non-Amish adolescents. However, some Amish youths use this time to engage in delinquency or in other risky behaviors (Hostetler 1993; Shactman 2006).

interpersonal skills, and to better handle money (Staff et al. 2009).³ Similarly, youths who volunteer for community organizations may learn skills and gain resources that are traditionally reserved for the adult workforce, and likewise internalize responsibility, self-control, and a sense of maturity through their interactions and relationships with conventional adults (Wilson 2000).

Adolescents' sense of autonomy and adulthood can also be enhanced through particular types of relationships with family members. Brauer (2011) underscores the compatibility between research on autonomy-enhancing parenting strategies and theoretical explanations that emphasize autonomy (im)balances as important mechanisms for explaining criminal behavior (e.g., self-determination theory, Deci and Ryan 1985; control-balance theory, Tittle 1995). Autonomy-supportive parents establish and apply clear standards and boundaries with their children, but allow space for personal expression. This approach provides children with opportunities to make their own decisions and honors those decisions by letting children experience the consequences of their choices once they are made, which may enable them to feel in control and eventually to accept these boundaries as self-imposed (Grolnick and Ryan 1989; Joussemet, Landry, and Koestner 2008).

Autonomy-supportive parenting may often be paired with “concerted cultivation” strategies, which emphasize the transmission of exceptional verbal skills through the use of

³ Some research suggests that intensive or excessive employment during adolescence is counterproductive for youths' development, as it is associated with school drop-out, weakened family bonds, and increased exposure to criminal individuals and opportunities (see Paternoster et al. 2003 for a review).

instrumental language, and in doing so encourage children to form and develop their own opinions and knowledge, to articulate their own views, and to negotiate their needs and desires with adults (Lareau 2011). Cultivation strategies often include explaining important decisions and listening to children's point of views when disagreements arise so that they can develop reasoning skills and so that they feel important and entitled to adult information. Drawing from these resources, children learn to effectively navigate adult settings (Lareau 2011) and may perceive a narrower difference between their own social status and that of adults than do other children, as they are consistently encouraged to exchange with adult figures in order to maximize their own opportunities. Autonomy-supportive parenting models are in direct contrast to authoritarian parenting styles that implement rigid hierarchical power arrangements between parents and children. In these latter contexts, children are provided with few opportunities to express their independence, and their obedience to parents is not to be challenged (Baumrind and Black 1967).

Beyond paid employment, community service involvement, and exposure to autonomy-supportive parenting, adolescents may also perceive a smaller-than-normal maturity gap by excelling in academics. Leadership roles in the school such as student council in which students are able to exercise some degree of power over their peers are most commonly available to those who consistently earn good grades (Eccles and Barber 1999). Additionally, teachers may provide high-performing students with more opportunities to work independently, to develop their communication skills, and to exercise choice in the classroom than lower-performing students (Good 1987; Weinstein et al. 1982; Weinstein and

Middlestadt 1979). High-performing students may also have more access to autonomy-supportive teaching strategies when they are elected into “gifted and talented” school programs that recognize the potential benefits of autonomous learning for educational, social, and occupational outcomes presently and later in life (Betts 1985; Ferrell, Kress, and Croft 1988; Wendel and Heiser 1989). Thus, adolescents who perform well in school may feel more adult-like specifically because teachers, parents, and other adults have adult-like expectations of them and because adults engage with high-performing children on a more sophisticated intellectual level (Roedell 1984).

2.1.2 Structural Barriers and Delinquent Peer Non-Exposure

Not all children who abstain do so because they experience a smaller-than-normal maturity gap. Some adolescents may perceive autonomy-deficits and thus are motivated to mimic delinquent behaviors from their peers, but they lack access to delinquent role models that would facilitate translation of those motivations into actual misconduct. Moffitt offers two illustrative examples of “structural barriers” that can block adolescents’ entree to delinquency learning opportunities; one is in reference to adolescents’ localized residential contexts, and the other relates to their school environments.

2.1.2a Localized Residential Contexts

The population density of adolescents’ residential locations can restrict or encourage access to delinquency role models. Moffitt suggests that adolescents who live in highly rural

areas might engage in fewer and less diverse interpersonal interactions than youths from urban areas and accordingly may have fewer chances to model criminal behavior. This argument is compatible with criminological literature that has long emphasized that the layout of the physical environment is highly influential on routine activities, and in turn can help to generate or eliminate offending opportunities (Braga, Papachristos, and Hureau 2010; Cloward and Ohlin 1960; Felson 2006; Sherman, Gartin, and Buerger 1989). Additionally, the notion that criminal opportunities are less plentiful in rural areas aligns with a rich history of criminological theorizing that underscores the criminogenic nature of urban areas (Shaw and McKay 1942; Wirth 1938).⁴

While Moffitt's discussion highlights the importance of rural environments for promoting abstention, it is clear that the underlying logic of this argument relates to the availability of criminal opportunities in larger ecological contexts. In criminology, individuals' criminal opportunity structures are often understood as being nested within neighborhoods (Sampson 2012). Individuals who reside in highly disorganized neighborhood environments characterized by weakened informal and formal social controls are assumed to have greater access to criminal values and offending opportunities (Morenoff, Sampson, and Raudenbush 2001; Sampson 2012). For example, Sampson, Raudenbush, and Earls (1997: 919) argue that violent offending opportunities are more abundant in neighborhoods that lack social cohesion and in which there is a general unwillingness of

⁴ Several studies that investigate crime in rural areas contradict the notion that rural areas are less criminogenic than urban areas, especially when it comes to illegal drug use (Cronk and Sarvela 1997; Pruitt et al. 1991).

neighbors to intervene on behalf of the “common good.” Alternatively, Elijah Anderson’s (1999) ethnographic work in inner-city Philadelphia underscores a set of informal rules that shapes interpersonal public behavior and that contributes to disorder in poor urban neighborhoods. Lacking access to conventional sources of self-respect, individuals immersed in street culture turn to violence or illicit drug markets to attain a sense of social status. Consequently, residing in neighborhood contexts in which criminal prospects are profuse can enhance the risk of individual-level offending, whereas organized and stable neighborhood conditions can insulate individuals from illicit behavior (Kling, Ludwig, and Katz 2005; Simcha-Fagan and Schwartz 1986).

2.1.2b School Contexts

Moffitt also considers the school as a potential structural barrier to adolescents’ opportunities to learn delinquent behavior. She speculates that female adolescents who attend single-sex schools may be more likely to abstain because they have less exposure to male adolescents, and thus experience significantly less contact with criminogenic individuals and ideas than those who attend coed-schools. Indeed, males’ greater propensity for misconduct compared to females is among the most agreed upon patterns in criminological research (see Antonaccio et al. 2010),⁵ and delinquent peer groups are usually

⁵ Although scholars have gone so far as to suggest that males “always and everywhere” offend more frequently than females (Gottfredson and Hirschi 1990:145), some research suggests that the gender gap in crime is not universal. For example, Junger-Tas and colleagues (with Marshall and Ribeaud 2003; with Terlouw and Klein

disproportionately made up of male rather than female adolescents (Esbensen and Huizinga 1993; Warr 1996). However, the majority of school-aged children attend coed-schools (National Association for Single Sex Public Education 2014) and the notion that all-girls' schools can promote abstinence in female adolescence does little to explain abstinence among males. Additionally, it is well known that schools can bolster or promote children's delinquency in a number of ways that transcend the sex-composition of the student body (Garbarino 1999).

Researchers who specialize in school climate and its effect on children's developmental outcomes suggest that the "personality" of the school, or its communication patterns, norms about appropriate behaviors, and rewards and punishments can all work to inhibit or contribute to the delinquency of the student body (McEvoy and Welker 2000; Tobin and Sprague 2000; Welsh, Stokes, and Greene 2000). Schools with "effective personalities" tend to have systematic school discipline procedures, clearly defined reward systems for obedient behavior, and structured systems for the supervision of the students during school hours (Rutter and Maughan 2002). Such schools can also have positive effects for students' academic engagement independent of their individual situations, which means

1994) identifies cross-national variations in the sizes of gender gaps, and several studies demonstrate that the gender gap varies by the seriousness of the offense (see Antonaccio et al. 2010; Heimer 2000; Smith and Visher 1980; Steffensmeier and Allan 1996; Steffensmeier and Streifel 1991).

adolescents typically spend more time completing homework assignments or in school-sponsored activities rather than in “unstructured time” with their peers (McEvoy and Welker 2000; Osgood and Anderson 2004).

Alternatively, schools with widespread disobedience problems characteristically have systems of rules and sanctions that are unclear or randomly enforced (Welsh et al. 2000). “Ineffective schools” also tend to have inadequate systems for supervision and monitoring of students, which not only allow disobedience and the transmission of delinquency to occur, but also may create an environment in which students perceive little confidence in administrators and turn to informal mechanisms of conflict resolution to address problems with other students (Lockwood 1997; Welsh et al. 2000). Such schools do not typically hold high expectations for student achievement or show commitment to enhancing student engagement (McEvoy and Welker 2000). Accordingly, disengaged students who attend poorly controlled or inadequately disciplined schools often have more opportunities to form relationships with other alienated youth, enhancing their risk for delinquent behavior (Dishion et al. 1991, 1997; Walker and Sylwester 1991).

2.1.2c Prosocial Barriers

Moffitt does not discuss the possibility that conventional activities such as attending church, doing homework, volunteering in the community, or simply having non-delinquent, prosocial friends can embody structural barriers to criminal learning opportunities. Yet, adolescents who are highly involved in prosocial activities may experience very little

unstructured time to socialize unsupervised with those adolescents who engage in delinquent behaviors and who tend to be disengaged from conventional pursuits (Elliott, Huizinga, and Menard 1989; Mears, Ploeger, and Warr 1998; Osgood and Anderson 2004). The idea that prosocial time-use can block youths from criminal contact resembles the “involvement” component of Hirschi’s (1969) four social bonds. Building from the old adage “idle hands are the devil’s workshop,” Hirschi argues that individuals who are highly involved in productive activities will have little time to interact with non-conventional peers or to participate in criminal behavior. Indeed, children who participate in extracurricular activities in which interactions with conventional adults and peers are common are generally less likely to engage in delinquency than children who are not (Demuth and Brown 2004; Mahoney 2000; Mahoney and Cairns 1997).⁶

2.1.2d Familial Barriers

Structural barriers may also be located within the family. Parents who are directly involved in their children’s lives and who place strict limitations on their children’s freedoms may significantly reduce their children’s time or opportunities to interact with criminal peers (Loeber and Stouthamer-Loeber 1986; Wright and Fitzpatrick 2006). Strong parental monitoring has been shown to be an effective protector against children’s delinquency and

⁶ Some research suggests that non-athletic forms of extracurricular activities are more effective for controlling adolescents’ involvement in delinquency than sports (Hoffmann 2006), as participation in athletics is linked to aggressive behaviors and greater use of alcohol (Burton and Marshall 2005; Eccles et al. 2003).

deviant peer involvement (Dishion et al. 1991). Likewise, close parent-child relationships can be considered a structural barrier on their own, given that they reflect the time and energy that parents have invested to create affective bonds with children (Coleman 1988; 1990). Specifically, close relationships often signify that parents spend substantial amounts of quality time with their children, that they listen, respond, and make themselves available, and in other ways position their children as a top priority in their lives on an ongoing basis (Lezin 2004).

Importantly, parent-child bonds, parental rule-setting and supervision, communication patterns, and other components of parent-child relationships are infrequently discussed as elements of structure in the family sociology literature. Rather, family structure is more typically characterized by family size, marital status of parents, and earning arrangements (i.e., single-earner, dual-earner), whereas characteristics of parent-child interactions are more indicative of *process*. However, Moffitt's emphasis in this portion of the theory is on attributes of the environment that limit youths' access to delinquent peers. Thus, similar to the argument that features of the adolescents' residential context or school can be arranged in such a way that offending opportunities are reduced, so can the family.

It is also important to point out that Moffitt's discussion of structural barriers implies that youths exposed to structural barriers avoid delinquent behavior not necessarily because these contexts produce stronger perceptions of adulthood among adolescents, but rather because these environments actually disallow adolescents' interactions with criminal peers. Hence, some adolescents may experience the maturity gap and may be motivated to offend,

yet are blocked from opportunities to learn and engage in delinquency. Some studies find that adolescents who engage in little to no delinquent behavior are often highly involved in prosocial institutions (Arnett 2001; Cairns and Cairns 1994; Chen and Adams 2020; Dunford and Elliott 1984); however, scholars have typically argued that these findings refute the notion that abstainers possess abnormal personal characteristics rather than viewing prosocial time-use as a type of structural barrier and thus supportive of one of Moffitt's propositions. Next, I describe Moffitt's final abstention process—abstention through atypical personal traits and peer rejection.

2.1.3 Atypical Personal Characteristics and Peer Rejection

Moffitt's third abstention process suggests that some youths possess atypical personal attributes and consequently are rejected by their peers, especially by those adolescents who engage in criminal and risky behaviors and who are capable of transmitting criminogenic values. Lacking access to peer groups in which delinquency takes place means that these adolescents spend much of their time isolated from others their own age, missing out on the bulk of everyday delinquency that transpires around them. For example, teenagers who are habitually excluded from after-school or weekend get-togethers may encounter few situations in which marijuana or other drugs are accessible; without opportunities to watch and model other teenagers using drugs, they may be ignorant of how to use such substances even when they are available (e.g., see Becker 1953; Tolone and Tieman 1990).

A number of studies published prior to Moffitt's theoretical piece helped to inform this proposition. Hogan et al. (1970) find that marijuana abstainers report lower levels of

social skills, are less adventuresome, and are less empathetic to others' feelings than marijuana users. Jones (1971) reports similar findings regarding individuals who abstain from alcohol use, describing them as atypically introverted, pessimistic, and more prone to possess guilt, self-defeating attitudes, anxiety, and other indicators of emotional or psychological instability. Farrington and West (1990) describe exclusion from social groups as a key distinguishing factor between abstaining and non-abstaining adults. Undoubtedly, a classic study by Shedler and Block (1990) played an especially influential role. Following 101 children from ages three to eighteen, the authors find that individuals who experiment with drugs during adolescence are in various ways better adjusted than both frequent-users and those who abstain altogether. Experimenters are less likely to be exposed to demanding, domineering, and emotionally unresponsive home environments during childhood, and they exhibit lower symptoms of interpersonal and emotional difficulties, have greater emotional intelligence, and are more popular and integrated among their peers. Recognizing the importance of peer relationships for the transmission of delinquent behavior in her own theory, Moffitt builds from these findings to suggest that adverse personal traits can be the impetus for peer rejection and thereby can initiate a central process by which the transmission of delinquency is interrupted.

Moffitt's ideas regarding atypical personal traits, peer rejection, and abstention are in many ways compatible with learning theories in criminology, which underscore the importance of peers for teaching criminal values and techniques, for supplying delinquent opportunities, and in other ways for facilitating adolescents' delinquent behavior (Burgess

and Akers 1966; Sutherland 1947). Additionally, her argument resonates with Goffman's (1963) classic discussion of stigma. Goffman suggests that "normal" and "stigmatized" individuals each feel uncomfortable, embarrassed, and uneasy when they must interact with one another; consequently, "the very anticipation of such contacts can lead normal and the stigmatized to arrange life so as to avoid them" (1963: 13). However, in some ways, her ideas clash with other criminological theories, such as those falling under the labeling perspective (Lemert 1967; Tannenbaum 1938). Tannenbaum (1938) argues that targets of negative labeling often become isolated from conventional groups and are subsequently forced into peer groups in which members also have had deviant labels applied to them, enhancing their likelihood of future deviance. Similarly, Howard Becker (1963) argues that deviant peer groups are an important component for linking negative labels to delinquent behavior, as such groups can provide a source of social support, a sense of shelter, and can present group members with rationalizations of crime, criminal values and definitions, and opportunities to engage in deviant behavior.

Additionally, labeling theorists have also emphasized the importance of self-concepts for the development of delinquent behavior. Specifically, individuals form self-appraisals by comparing themselves with others and by evaluating themselves based on their perceptions of others' attitudes toward them (Festinger 1954; Wells and Rankin 1983). Becker (1963) argues that deviant labels and negative treatment by others can set into motion a self-fulfilling prophecy, by which individuals are shaped into the person others believe him or her to be. If abstaining adolescents are treated unfavorably and labeled as "strange" or

“different” by their peers on account of atypical personal traits, labeling theory would predict these adolescents to internalize a negative concept of self and begin misbehaving in order to gain a sense of self-worth or because it confirms an image that is consistent with how others view him / her (Kaplan 1975; 1980; Matsueda 1992; Tannenbaum 1938). However, it may be the case that while peers evaluate abstaining youths negatively, teachers and parents may appraise them positively, which could provide them with positive self-esteem, reinforce their investments in a conventional future, and thereby insulate them from future misbehavior (Reckless, Dinitz, and Murray 1956). As Matsueda (1992) notes, individuals may form self-concepts based on multiple reference groups (i.e., peers, parents, teachers, etc.), and persons who are the most influential on the individual’s self-concept are likely to be those they care the most about, those who have helped their self-image in the past, and those from whom a sense of status can be gained.

2.1.3a What are ‘Atypical’ Personal Traits?

Moffitt does not discuss the range of characteristics that might be considered “atypical” and capable of repelling other adolescents, but her examples target non-physical, psycho-emotional and personality characteristics. The present study seeks to expand our understanding of particular personal traits and their effects on offending or non-offending behaviors. To avoid biases that may inevitably arise in such discourse, I rely on literature that examines peer relationships, popularity, and bullying / victimization during adolescence to guide my discussion. A review of this literature indicates that “marks of differentness”

can be temperamental, psycho-emotional, cognitive, or physical in nature. Below, research that details the relationships between these various traits and peer (dis)integration is described.

2.1.3b Adverse Personality or Psycho-Emotional Traits

Moffitt's focus on non-physical personality and psycho-emotional traits in her discussion of atypical characteristics is understandable considering a plethora of empirical research that indicates these attributes to have a lasting effect on children's abilities to form meaningful relationships with others. Children who exhibit signs of psycho-emotional maladjustment (i.e., depression, fearfulness, powerlessness, anxiousness, etc.) may behave awkwardly in social settings, require special attention from teachers and other adults, and consequently become excluded from playgroups or other group activities in school or in the neighborhood (Coplan, Closson, and Arbeau 2007; McCroskey and Daly 1976; Richmond, Beatty, and Dyba 1985). Likewise, children who are exceptionally shy or who exhibit unusually high levels of risk-avoidance may appear "different" and less likable to other children of the same age and as a result feel left out of normative peer networks (Boivin, Hymel, and Bukowski 1995; Coplan et al. 2004; Fordham and Stevenson-Hinde 1999; Rubin et al. 1995). The effects of adverse psycho-emotional or personality traits on peer integration often become more deleterious as children transition into middle and late adolescence (Boivin, Hymel, and Bukowski 1995; Hanish and Guerra 2004).

2.1.3c Intellectual / Cognitive Characteristics

Children with extraordinarily advanced intellectual skills may also be at risk for peer rejection or victimization. Early studies examining “gifted” children suggest that children with particularly high levels of intellectual ability can be among the most unpopular children in school (Gallagher 1958; Hollingworth 1942; O’Shea 1960). Gifted children may be teased by their peers for being “too smart,” for being unusually close with teachers and other adults, or because they adopt an adult-like mentality that is construed as “strange” or “bossy” by other children (Roedell 1984). Likewise, they may lack self-confidence or self-esteem because parents and teachers underestimate their abilities or because they interpret gifted children’s boredom with school curriculums as behavioral problems (Pringle 1970; Whitmore 1980). Gifted children may also appear different than their peers because they are relatively sensitive and perceive ordinary problems of childhood more intensely than other children, because they recognize greater pressures to conform to adult expectations, or because they think or speak in ways that transcend the intellectual capabilities of their peers (Roedell 1984; Roedell, Jackson, and Robinson 1980).

Contrarily, learning disabilities can also complicate children’s integration into peer networks. Learning disabilities can interfere with children’s abilities to perform well in social situations, as they can make it more difficult to interpret facial expressions, voice tones, body language, or to make judgments about the feelings of others (Bachara 1976; Bryan 1977; Denckla 1978). Children with learning disabilities may also internalize a great sense of frustration and failure and as a consequence they may behave in ways that others

perceive as abrasive or antagonizing (Bruininks 1978; Gresham, Evans, and Elliott 1988; Serafica and Harway 1979; Winne et al. 1982). In elementary school, children with learning disabilities often play alone (Gottlieb et al. 1986), and they are disproportionately ranked as having a lower social standing by their classmates (Estell et al. 2008). Kavale and Forness (1996) find that 75% of students with a learning disability have social skill deficits, and several studies suggest they are more likely to be isolated from their classmates and to be targets for bullying (Al-Yagon and Mikulincer 2004; Carlson 1987; Pearl et al. 1998).

Despite the extensive number of studies indicating that children with a learning disability are at risk for social maladjustment, predicting their membership in one of Moffitt's three offending taxonomies is challenging. Learning disabilities can be considered one form of a neuropsychological deficit, which should place them at risk for life-course persistent offending. Indeed, some scholars find that children with disabilities have a disproportionate number of negative educational and social experiences and may engage in delinquent activities as a surrogate source for resolving their frustrations or for other reasons suggest that learning disabilities promote more, not less, delinquency (Bachara and Zaba 1978; Holzman 1979; Wilgosh and Paitch 1982). However, if they are cutoff from peer relationships, how are they to model and learn delinquent behaviors?

On one hand, it is possible that there are multiple pathways when it comes to learning disabilities and antisocial behaviors, and that only a subgroup of LD (i.e., learning-disabled) children are at risk for serious misbehavior (Nabuzoka and Smith 1993). Some research supports the notion that learning disabilities are most predictive of conduct problems when

marginalized LD children seek out friendships with those similar to themselves (e.g., other alienated children with learning disabilities) and group members' perpetuate each other's frustrations or encourage one another to misbehave (Farmer and Farmer 1996; Pearl et al. 1998). On the other hand, it is also possible that peer acceptance is not a necessary condition for adolescent delinquency, and that peer rejection can promote psychological strain that pressures youths into individualistic forms of delinquency behavior. From a criminological standpoint, this idea is compatible with Agnew's (1992) general strain theory, which would view processes of peer rejection as unfavorable life circumstances (i.e., "noxious stimuli") that encourage negative emotions (i.e., anger, depression) and ultimately increase the likelihood of behavioral problems with or without the help of friends. Indeed, some studies demonstrate that early peer problems predict various forms of externalizing behaviors later in childhood (i.e., aggression, hostility, or other forms of acting out) (see Parker and Asher 1987). At the same time, criminological research has long shown the importance of peer relationships for supplying delinquent opportunities and for teaching successful strategies for engaging in such behaviors (Haynie and Osgood 2005; Warr 1993, 1996). Only additional empirical research can help to distinguish between these inconsistent ideas.

2.1.3d Physical Characteristics

Notwithstanding Moffitt's emphasis on non-physical qualities that can isolate adolescents from their peers, the literature also suggests that various types of physical characteristics can set youths apart from other adolescents. Physical qualities can have a profound effect on the way that individuals are perceived by others; likewise, individuals

who are considered to be physically attractive by cultural standards are generally treated more favorably and are more well-liked by others (Berscheid and Walster 1972; Hendry and Gillies 1978; Miller 1970). For example, westernized society holds particular attitudes regarding 'normal' statures of males and females sometimes referred to as "heightism" (Gillis 1982). In general, heightism favors reasonably tall statures and holds less favorable attitudes towards short statures; although preferences are often gender and age-specific (Cawley, Joyner, and Sobal 2006; Grogan 1999; Pope, Phillips, and Olivardia 2000). Likewise, research also suggests that children who possess a physical disability or who in other ways look physically different have a greater chance of being bullied and ostracized at school (Anderson and Klarke 1982; Blum et al. 1991; Franklin et al. 2006; Perlman and Peplau 1981; Stevens et al. 1996).

Body weight composition in particular can have severe implications for teenagers' abilities to fit in with others, as it can put adolescents at odds with traditionally accepted standards for ideal masculine or feminine body types (Hendry and Gillies 1978). Drawing from adolescent network data, Strauss and Pollack (2003) find that overweight adolescents receive considerably fewer friendship reports from their peers and are more likely to be described with negative language by their classmates and to be ranked as the least-desirable friends. They also experience relatively higher levels of depression, body dissatisfaction, and low self-esteem compared to their peers, which may exacerbate their marginalization (Barker and Galambos 2003; Rosenblum and Lewis 1999). Some overweight adolescents cope with alienation by increasing the amount of time they spend watching television or playing video

games, thus attenuating their ability to practice social skills and further distancing them from other teens (Vandewater, Shim, and Caplovitz 2004). However, as is the case with learning disabilities, being overweight, short, or possessing other physical marks of differentness in adolescence can be problematic for adolescents' sense of belongingness and in turn can promote predatory offending behaviors (Messerschmidt 2000).

I now turn to a discussion of the empirical research that has examined one or more of Moffitt's abstention processes. Following this, I provide an overview of research limitations and discuss the ways in which the present study will help to enhance the knowledge base regarding how and why some adolescents abstain.

CHAPTER 3

A REVIEW AND CRITIQUE OF THE EMPIRICAL RESEARCH

3.1 Review

A handful of empirical studies in recent years address research questions that are informative for understanding the extent to which Moffitt's abstention processes are supported. Extending Moffitt's conceptualization of delinquency taxonomies into adulthood, White, Bates, and Buyske (2001) apply growth mixture modeling to four waves of data for 698 males from the Rutgers Health and Human Development Project. Interestingly, their analysis identifies four offending trajectories rather than three: non-offending, adolescent-limited, persistent, and escalating patterns. When compared to all offending individuals, abstainers are found to be lower in impulsivity, higher in harm-avoidance, less likely to be exposed to parental hostility, and more likely to come from intact family structures. Hence, although they appear to be relatively cautious and more reserved than individuals who offend, they do not come across as exceptionally atypical. The fact that they are raised in intact and positive home environments directly contradicts Shedler and Block's (1990) finding regarding abstainers' tendencies to come from cold and unsupportive family types. However, White and colleagues do not assess respondents' friendship networks or experiences with peer rejection, so their study cannot adequately address whether or not abstainers experience difficulty integrating among their peers. Likewise, the focus of the study is more concerned with offending youths rather than non-offending youths, so there is

no attention given to abstainers' relative perceptions of the maturity gap or experiences with structural barriers.

Tucker et al. (2006) examine marijuana abstention using data from the RAND adolescent panel study, paying special attention to respondents' social functioning (e.g., dating, going to parties, participating in extracurricular activities, peer support, etc.) and psychological health (loneliness, mood, general mental health). Results indicate that although abstainers are less socially involved with their peers in adolescence, they do not perceive themselves as being lonely, having unsupportive relationships, or having poor mental health. Likewise, they are more committed to school, earn better grades, spend more time on homework, participate more in extracurricular activities, and are more likely to attend college in young adulthood than their offending counterparts. Walton and Roberts (2004) come to similar conclusions based on findings from a sample of 172 undergraduate students. Although drug and alcohol abstainers are less extraverted and more conscientious than both moderate and heavy users, there is no evidence to suggest that they are emotionally or psychologically unstable (also see Vaughn et al. 2011).

Piquero, Brezina, and Turner (2005) explicitly test Moffitt's contention that abstainers are shut out from deviant peer networks. Studying a sample of adolescents from the National Longitudinal Survey of Youth 1997 (NLSY97), their findings challenge the image of abstainers as social introverts. Although abstainers have few delinquent friends, they tend to be more involved with prosocial friends, and they do not differ from non-abstainers on self-reports of unhappiness or depression. The only characteristic the authors

identify as potentially abnormal is abstainers' tendencies to have unusually strong relationships with their teachers, which may appear "uncool" to other adolescents and reflect a lack of independence from adult authority figures. Using data from the Youth and Deterrence Survey, Brezina and Piquero (2007) also do not find evidence that abstainers are isolated, psychologically maladjusted, or in other ways atypical; rather, abstainers simply have stronger moral beliefs compared to non-abstaining youths. Again, the focus of these studies is on atypical personal traits rather than on Moffitt's other abstention processes; they say little about the extent to which abstaining youths perceive a smaller-than-normal maturity gap or experience structural barriers to delinquency learning opportunities.

Using friendship network data from the National Longitudinal Study of Adolescent Health (Add Health), Chen and Adams (2010) find that non-offending youths are just as popular as other adolescents, they report *higher* levels of self-esteem, and they are more strongly attached to their parents and schools. However, the authors also find that abstaining youths are more likely to experience delayed pubertal development, and their friendship networks tend to be smaller than non-abstainers. Because their study is most interested in understanding abstainers' social adjustment, the authors do not provide an explicit discussion of structural barriers. Despite this, strong attachments to parents and schools could be interpreted as characteristics of the environment that block adolescents' access to delinquency learning opportunities and therefore supportive of Moffitt's structural barriers proposition.

Only one known study explicitly investigates each of Moffitt's proposed pathways into abstention. Owens and Slocum (2012) draw on longitudinal data for mothers and their children from the Collaborative Perinatal Project (CPP) and the Pathways to Adulthood (PTA) studies, finding support for the proposition that describes late pubertal development as a predictor of abstention. Also consistent with the theory, they find that abstainers are more likely than non-abstainers to be fearful, shy, unemotional, passive, and verbally uncommunicative in childhood, and these traits contribute to their exclusion from peer networks. This study is helpful; however, it contains a number of limitations. The sample is not representative of the general population, as respondents from the CPP and PTA studies are disproportionately African-American, from low-income households, and from urban neighborhoods. Due to data restrictions, the authors rely on adolescents' virginity status at age eighteen as a proxy measure for late pubertal development, which is an uncertain substitute given that many adolescents who undergo normative pubertal timing do not have sexual intercourse by age eighteen (see Crockett et al. 1996; Mott et al. 1996). More problematically, their measures of structural barriers include items tapping exposure to delinquent and prosocial peers. This methodological strategy is cumbersome, given that Moffitt describes low exposure to delinquent peers as an outcome of structural barriers rather than a structural barrier in and of itself. The authors also do not control for perceptions of the maturity gap and thus do not test the extent to which the relationships between late puberty or adult-role enactment and abstention are mediated by such sensitivities, nor do they fully assess whether structural barriers and abnormal personal characteristics lead to abstention

indirectly through delinquent peer non-exposure and peer rejection. Thus, additional research is warranted.

3.2 Critique

Taken together, scholars have had a particularly narrow focus when it comes to studying abstention, focusing on ideas related to social introversion and atypical personal traits while downplaying other important components of Moffitt's theory. These examinations have concentrated mostly on a small range of adverse psychological attributes, ignoring a number of other characteristics that research suggests may lead to peer exclusion. For instance, children who possess a non-physical or physical disability (i.e. a speech impediment, autism, physical handicap) may have difficulty making friends and become isolated from local peer networks and activities (Freeman and Kasari 1998; Leffert and Siperstein 1996). Likewise, children who are overweight or underweight or who look in other ways different from their peers may have difficulty assimilating among their peers (Franklin et al. 2006). Explicit analyses of these processes will provide important insights for Moffitt's proposition that identifies peer rejection as a key component of stable non-offending, as we know little now regarding the range of personal characteristics that may be perceived as atypical and that promote peer rejection.

The disproportionate amount of attention given to the atypical personal traits proposition is understandable, as it is contrary to the way that criminologists have traditionally thought about what constitutes deviant and conforming behavior during

adolescence. The notion that abstainers are maladjusted is consistent with what Hagan (1973) calls the “sociology of the interesting,” or intellectual efforts that value and emphasize imaginative theory building and that often attract scholarly attention because of their potential to offer new, non-obvious, exciting, and creative theoretical ideas and solutions. But problematically, the “interestingness” of this idea has led to an over-simplified concentration on whether abstainers are prosocial or antisocial, and similarly, whether or not it should be construed as deviant to abstain from criminal behavior. Although informative, these efforts ignore several important mechanisms specified in the abstention thesis, and often they do not fully conceptualize how various processes or characteristics fit within Moffitt’s theoretical framework. For instance, some researchers find that abstainers are more involved in academics and other prosocial institutions than non-abstainers and have interpreted these findings as contradictory to Moffitt’s theory (Chen and Adams 2010). However, conceptualizing prosocial involvement as a type of structural barrier might provide support for the proposition that some youths are blocked from delinquency learning opportunities, though it does not necessarily reinforce the notion that abstainers are abnormal, unstable, or rejected from their peers. Future studies that explicitly test each of the abstention processes may come to show that the abstention thesis should be credited with greater empirical support than is often recognized.

Indeed, it is important to note that most of the recent research that explicitly investigates the atypical personal traits proposition does not indicate that abstainers are abnormal; and if they are, it is in a positive, socially desirable, and relatively innocuous way

(i.e., having close relationships with teachers, having high moral beliefs, being good students, etc.). However, if we accept that abstainers are generally socially and psychologically well-adjusted as recent studies have suggested, what can be said about the body of empirical literature that informed Moffitt's atypical personal traits proposition? Several studies published between the 1960s and late 1990s report findings that are more consistent with the notion that total abstinence is an antisocial adaptation, and one that often pairs with various dimensions of psycho-emotional instability (Bentler 1987; Cook et al. 1998; Farrington and West 1990; Jones 1968, 1971; Vaillant 1993; West 1982). And what about Shedler and Block's (1990) classic study that suggested that abstainers are relatively maladjusted and disproportionately exposed to unfavorable home environments, a scholarly work cited more than 1,300 times since 1990? Should it be disregarded? It is true that Shedler and Block drew their provocative findings from a small and select cohort of children who grew up in a highly liberal environment, a time and place that was especially tolerant of drug use (i.e., Berkeley, CA in the 1970s) (Milich et al. 2000). Hence, it may be the case that abstaining is an especially abnormal adaptation in particular historical contexts. However, cohort effects cannot account for all studies that recognize symptoms of abstainer instability.

There are several possible explanations that might help to account for discrepant findings across studies. For one, disparate findings may simply reflect different scholarly interpretations of similar processes and the ambiguity revolving around the types of traits that should be considered atypical. Do risk-avoidance, shyness, and high morality qualify as atypical traits? Should especially strong bonds with teachers and parents be regarded as

abnormal? Whereas Piquero, Brezina, and Turner (2005) conceptualize strong teacher-student bonds as an atypical trait that reduces access to delinquent peers, other researchers interpret similar characteristics as profoundly normative and evidence that abstainers abstain by choice (Chen and Adams 2010; Tucker et al. 2006). Exacerbating this issue, data limitations have made it very difficult for scholars to disentangle whether abstainers are truly rejected by delinquent peers, or rather if they purposefully distance themselves from those with criminal values (see Piquero, Brezina, and Turner 2005). Thus, some of the debate regarding whether or not abstainers are abnormal may stem from a miscommunication among scholars denoting precisely what constitutes “abnormality” and also from the difficulty of understanding whether weak ties to delinquent peers are forcefully imposed or are a natural consequence of conventional bonds.

Some of the empirical inconsistency regarding abstainers is also likely due to the dissimilar ways in which comparison groups are constructed across studies. Clearly, the conclusions that are drawn regarding abstainers’ psychological and social adjustment levels depend on with whom they are compared. Some studies operationalize delinquency as a variable with multiple levels, in which case abstainers are compared to moderate and high level offenders or alternatively to persistent and non-persistent offenders (e.g. Shedler and Block 1990; Tucker et al. 2006; Walton and Roberts 2004; White, Bates, and Buyske 2001). In other studies, all non-abstainers are merged into a single category, allowing for only a crude comparison strategy and one that is contradictory to Moffitt’s conception of dual offending taxonomies (see Boutwell and Beaver 2008; Brezina and Piquero 2007; Chen and

Adams 2010; Piquero, Brezina, and Turner 2005; Vaughn et al. 2011). A problem with the latter and more frequently used approach is that unique variation on key psychological, developmental, and social measures among high volume or persistent offenders can be offset by more conservative values among moderate or non-persistent offenders. Accordingly, findings may be considerably different when moderate and serious offenders are kept separate as Moffitt envisioned. Moving forward, an accurate test of the abstention thesis requires comparison groups to be constructed in a way that is consistent with the theory.

Finally, while it is noteworthy that most recent abstention studies do not indicate that abstainers are socially or psychologically unstable, this does not necessarily mean that all abstainers are relatively well-adjusted. Moffitt does not contend that *all* abstainers or even that most abstainers possess atypical characteristics; rather, she claims that abstention is complex and can occur through several processes. “Loners” could be a smaller subset of all abstainers who do not consistently surface in empirical analysis. Traditional methods for studying abstention have not allowed for an adequate assessment of abstainer subtypes, as these methods (i.e., regression) are typically based on mean estimates (Greenstein 2006). Comparing abstainers to non-abstainers indicates whether abstainers *on average* are more, less, or equally likely to possess certain characteristics than non-abstainers; yet, this approach does not allow for the detection of abstainer subgroups who may differ significantly from one another or from offenders on key characteristics. If abstainers are highly differentiated, then discrepant findings across studies may be an artifact of sample differences; that is, different studies might examine samples with dissimilarly sized subtypes and thus produce

explanations for abstention that are incompatible with one another. The idea that inconsistent findings across studies are due to sample selection bias is plausible given that a number of abstention studies feature a small number of cases or a sample that is unrepresentative of the U.S. population (e.g., Owens and Slocum 2012; Shedler and Block 1990; Walton and Roberts 2004).

Research that investigates “late-onset offending” supports the notion that there may be qualitatively different types of adolescent abstainers. Relying on official reports of criminal behavior, Farrington, Ttofi, and Coid’s (2009) study of 411 males from ages 8 to 48 identifies one group of individuals who abstain throughout adolescence and adulthood, and another group who abstains in adolescence but begins offending after age 21. Compared to non-offenders, late-onset offenders are more likely to be raised in negative home environments (i.e. dilapidated premises, disrupted family structures), to have low nonverbal and verbal IQ, to perform poorly in school, and to be highly neurotic. During early childhood, 39% of late-onset offenders were characterized as nervous-withdrawn, compared to only 26% of non-offenders. At age eighteen, individuals with delayed criminal careers are less likely to live away from their parents and more likely to have anti-establishment attitudes.

Late-onset offenders may be shielded from criminal behavior during their teenage years, given that adverse personality traits might make them less attractive candidates for local peer groups and because they reside with their parents for longer durations. However, these insulating effects may eventually wear off as they establish households outside of their

parents' protective thumbs and struggle to adapt to adult roles and expectations. Thornberry and Krohn (2005) suggest that late-onset offenders are "cocooned" from antisocial behavior by protective family and school environments, but early risk factors (i.e., cognitive deficits) complicate their successful transition into employment, marriage, and other adult roles. In turn, the absence of key adult informal social bonds "frees" some abstaining youths to engage in adult offending. These findings indeed suggest that there may be different modes of abstention with differential consequences later in life. Curiously, despite the intuitive compatibility between topics of abstention and delayed criminal careers, these areas of interest are often discussed in isolation of one another. Efforts to bridge these areas of research are promising for better understanding criminal behavior throughout the life course.

Theoretical efforts introduced subsequently to Moffitt's life-course persistent and adolescent-limited model of offending have also speculated about prosocial and antisocial types of non-offending. Although referring to low levels of criminal behavior rather than abstention altogether, differential social supports and coercion theory (Colvin, Cullen, and Vander Ven 2002) suggests that individuals who experience consistent levels of coercion (i.e., any "force that compels or intimidates an individual to act because of the fear or anxiety it creates") (2002: 19) will engage in low levels of criminal behavior, yet will also possess weak social bonds, high levels of self-directed anger, and mental health problems. Alternatively, Colvin and colleagues also describe a pathway into non-offending that is an outcome of consistent exposure to social supports (i.e., "the delivery or perceived delivery of assistance from communities, social networks, and confiding partners in meeting the

instrumental and expressive needs of individuals") (2002: 20), which helps to produce high moral standards, mental health stability, and conventional behavior. Despite their theorizing, little is known regarding prosocial and antisocial modes of abstention (Farrington 2013).

To address the prospect of abstainer heterogeneity, scholars must invoke analytical techniques that are capable of exploring within-group variability among large and representative samples. Importantly, an investigation of abstainer subtypes must be guided by theory. The following section explores theoretical abstainer subtypes.

3.3 Exploring Abstainer Heterogeneity

Assuming that there are subtypes of abstainers, how many subtypes are there? Moffitt (1993) outlines three abstention processes; hence, we could conceptualize youths who abstain via a smaller-than-normal maturity gap, structural barriers to delinquency learning opportunities, and peer rejection as three discrete subgroups. While it is logical to assume that adolescents who abstain because of atypical personal traits and peer rejection represent the antisocial mode of abstention that has been entertained in the literature (Colvin, Cullen, and Vander Ven 2002; Ollendick, Seligman, and Butcher 1999), it is not clear whether abstention through structural barriers and narrow maturity gaps represent more prosocial modes of non-offending. Explicit examinations of abstainer variability will help to address this issue. Additionally, a within-group evaluation of abstainers will elaborate on the extent to which two or more abstention processes tend to coincide. Indeed, Moffitt (1993) suggests that abstention processes may sometimes overlap. Despite this, no research efforts

have attempted to understand the degree of compatibility among the three courses of abstaining behavior.

At least two permutations of Moffitt's abstention processes are theoretically intuitive. First, youths who abstain because of atypical personal traits and peer rejection may also be exposed to a significant number of structural barriers that block delinquency learning opportunities. Although Moffitt discusses these processes separately from one another, they have common ground because in both cases adolescents are presumably motivated to offend (because they are discussed disjointedly from adolescents who experience a smaller-than-normal maturity gap) but are blocked from peer groups that occupy delinquent role models (albeit in different ways). Additionally, some research suggests that certain types of adverse psycho-emotional or temperamental traits that lead to peer rejection are a consequence of children's overexposure to restrictive or overprotective parenting styles, which may be conceptualized as familial-based structural barriers (see Burgess et al. 2005; Rubin, Burgess, and Hastings 2002). For example, overinvolved parents may discourage their children from experiencing new situations and demote their self-confidence and sense of efficacy when it comes to performing well in unanticipated contexts (Rubin, Burgess, and Hastings 2002). Exposure to controlling parenting styles may also cause children to feel isolated, misunderstood, and to lead to problems recognizing and regulating emotions, whereas indulgent parenting has been linked to child selfishness, self-centeredness, and low self-control (Gurian 1999). In turn, these traits may make it difficult for children to fit in with

others of their same age, thereby decreasing the supply of opportunities for modeling delinquent behavior.

At the same time, it is also plausible that some youths who experience a smaller-than-normal maturity gap are also exposed to a significant number of structural barriers. After all, many types of structural barriers can also act as outlets through which adolescents can enhance their sense of adulthood and thus narrow their perception of the maturity gap. Performing well in school signifies that adolescents spend a considerable amount of time doing homework or completing school projects; thus in addition to feeling more autonomous than their peers, high performing students are likely to possess less time for engaging in delinquency. Likewise, teenagers who spend most of their free-time working for pay may not only be occupied during times in which their peers are offending, they may feel more mature than their peers because they work alongside adults, have adult-like responsibilities, and have access to adult resources (i.e., money). If the same processes that enhance youths' sense of adulthood also represent structural barriers to delinquency, then abstainers may best be conceptualized with a two-dimensional classification system that considers youths who abstain via high social capabilities and through structural barriers to belong to one category and youths who abstain through atypical personal traits, peer rejection, and familial-based structural barriers to belong to the other.

Which category should late-developing youths be placed in? Because they are presumed to bypass the maturity gap, it is logical to position them alongside adolescents who possess high social capabilities and who experience structural barriers to delinquency rather

than with youths who abstain via peer rejection. Indeed, some research suggests that because late developing youths are less motivated to establish their independence from their parents, they typically spend more time with their parents and often report closer parental relationships than children who undergo early or on-time development (Steinberg 1981, 1987; Steinberg and Hill 1978). Thus, late-bloomers may be in their parents' orbit more so than other teenagers and thereby experience more familial-based structural barriers to delinquency. However, it is also possible that late pubertal development should be considered among the list of atypical personal traits that can promote peer rejection. Some research suggests that children who experience abnormal development feel embarrassed or ashamed, perceive themselves to be different from other children, and are teased by their peers for having precocious or underdeveloped body types (Graber, Brooks-Gunn, and Warren 2006). If this is true, within-group analysis might reveal two subtypes of abstainers—those who abstain via high social capabilities and structural barriers, and those who abstain via low biological capabilities or other atypical personal characteristics, peer rejection, and familial-based structural barriers. Figures 2, 3, and 4 display alternate abstention classification systems.

The present study has two analytical objectives. First, I test each of Moffitt's abstention propositions to elaborate on differences between abstaining and non-abstaining youths and to assess the empirical validity of the abstention processes. Figure 5 displays graphical models for each proposition. The second objective is to identify and differentiate abstainer subtypes.

CHAPTER 4

DATA AND METHODS

4.1 Data and Sample

My data come from the NLSY79: Children and Young Adults. The original National Longitudinal Survey of Youth 1979 is a panel study conducted by the U.S. Department of Labor's Bureau of Labor Statistics (BLS), which began collecting information from 12,686 individuals who were between the ages of 14 and 21 in 1979. The study is designed to gather information on key life events and labor market activities at multiple time points from a nationally representative sample of U.S. citizens and an oversample of African American and Hispanic respondents. Beginning in 1986, the Center for Human Resource Research (CHRR) introduced the NLSY79 Child survey, in which the children born to 6,283 mothers from the NLSY79 were interviewed and assessed for the first time. The child survey gathers demographic and developmental information about each child, collected from either the mother or the child, and has continued biennially since 1986. For children ages 10 and older, information on children's interactions with parents, attitudes towards schooling, friendship patterns, religiosity, delinquency and substance use, and household responsibilities have been assessed biennially using a self-administered format since 1988 (Center for Human Resource Research 2005).

The NLSY is unique compared to other secondary datasets in that it offers longitudinal information about social characteristics, attitudes, and behaviors of both parents and their children, thus allowing for inter-generational examinations. Other studies that

feature large and nationally representative samples limit offspring data to a single focal child within each family, include data for children for only a few waves, or collect information on children at time-points that are several years distant from one another (e.g., Panel Study of Income Dynamics; the National Survey of Families and Households). Although the National Longitudinal Study of Adolescent Health (Add Health) offers a number of advantages for studying adolescents' participation in delinquent behaviors, wave I interviews were conducted with students in grades seven through twelve (i.e., when children were between the approximate ages of thirteen and eighteen) and therefore do not provide information about delinquent behaviors in early adolescence. In contrast, the NLSY79 Children and Young Adults study provides information for all children within each family based on interviews that were conducted every two years and that cover children's engagement in delinquency through early, middle, and late adolescence. It is also important to note that although prior studies have examined abstention using the Add Health or the NLSY97, they have not investigated abstainers from the NLSY79.

In 2010, the child and young adult portions of the NLSY included 11,504 children born to women of the original cohort. I included only those children born between 1978 and 1992 because respondents born outside of this time frame do not have comprehensive information available for early, middle, and late adolescence. The NLSY has not yet made the 2012 wave publicly available and therefore characteristics and behaviors in late adolescence could not be assessed for children born after 1992. Likewise, children born before 1978 do not have complete information in early adolescence. This selection process

resulted in a sample of 8,745 children. I identified only minor differences between included and excluded children; namely, mothers of children who had information from ages ten to eighteen have a slightly lower level of educational attainment compared to mothers of the older and younger excluded children.

To study abstention conservatively, I excluded 3,742 children from my sample that had missing data on delinquency items for more than two time points. This strategy was necessary to avoid over-capturing abstaining youths. For example, I could not be confident that an adolescent who reported zero incidents of delinquent behavior across two waves, but who was not assessed during the other three waves, is truly an abstainer given that the bulk of their assessments periods are unrepresented. Although eliminating respondents from the study is not ideal, it does not appear to have introduced a significant degree of sample selection bias into the analysis. The remaining 5,003 children differ only slightly from the entire sample of NLSY children; they are slightly more likely to be African American, marginally more likely to be female, and their mothers have slightly lower educational attainment than mothers of children from the entire sample (see table 1).

The NLSY conducts interviews with children biennially in even years (1994, 1996, 1998, etc.). This presents a problem in that children born in odd years are not assessed at exactly the same ages as children born in even years. This discrepancy is important, given that some of the measures in the present study are time-sensitive. For instance, my measure of pubertal development for male respondents uses information about the difference between each adolescent's height at age eighteen and his height at age fourteen relative to other male

respondents. To illustrate this problem, a respondent born in 1979 would turn fourteen in 1993, but the NLSY supplements were not administered in that year; rather, they were administered in 1992 when the respondent was thirteen and in 1994 when the respondent was fifteen. To resolve this, I coded respondents as *born in early months* if they were born between the months of January and June, and *born in late months* if they were born between July and December. If respondents were born in early months during an odd-number year, I assess them at the later time point; if they were born in late months, I assess them at the earlier time point. To demonstrate, if a respondent was born in the early months of 1979, I assess them in 1994 to attain information for when the child was fourteen (when the child has just recently surpassed age fourteen). Alternatively, if the respondent was born in the late months of 1979, I assess them in 1992 (when the child is nearly fourteen). I use this strategy in the construction of all measures.

4.2 Measurement

4.2.1 Dependent Variable

I use latent trajectory analysis to classify respondents into offending taxonomies. This technique measures population differences in developmental courses of behaviors or outcomes using finite (discrete) mixture models (Jones and Nagin 2012). The objective of this technique is to identify clusters (i.e., groups) of individuals that have followed similar progressions of a given behavior (or set of behaviors) over some designated amount of time,

and thus is well-suited for detecting groups of individuals based on their participation in delinquent behaviors throughout adolescence (Nagin and Odgers 2010; Nagin 2005).

The use of latent trajectory analysis for studying abstention has advantages over traditional methods. In past research, scholars have often coded respondents as “abstainers” for having a delinquency score of zero, or as “nonabstainers” for having a score above zero (see Boutwell and Beaver 2008; Chen and Adams 2010; Brezina and Piquero 2007; Piquero, Brezina, and Turner 2005; Vaughn et al. 2011). This approach is limited for a few reasons. First, it is highly restrictive to consider only those adolescents with a delinquency score of zero to be abstainers because many adolescents may have engaged in very few delinquent behaviors throughout adolescence and in other ways may be qualitatively more similar to abstainers than they are to non-abstainers. It does not seem reasonable to classify adolescents who engaged in only one or two delinquent behaviors throughout adolescence as non-abstainers, given that the bulk of their teenage years are characterized by non-offending. Second, this approach does not capture high-level or persistent delinquency, and thus unique variation on key psychological, developmental, and social measures among persistent offenders can be offset by more conservative values among non-persistent offenders (or vice versa). Accordingly, analyses may show few differences among abstainers and non-abstainers, although key differences may exist when offending types are separated as Moffitt anticipated. Additionally, if researchers do wish to capture high-volume delinquents, it is not clear what rules should be followed to do so. Do persistent offenders score above average on delinquency scales at every time point? At most time points? Perhaps they score one

standard deviation above the mean at each time point as Moffitt's (1993) estimates suggest? Making these distinctions is cumbersome, whereas allowing delinquency trajectories to surface using latent trajectory analysis helps to avoid these uncertainties. Thus, rather than imposing constraints on the data in order to force delinquency taxonomies, I use latent trajectory analysis to allow taxonomies to emerge.

For each time point, I created an overall delinquency score based on the sum of four items: the number of times the respondent hurt someone bad enough to require medical attention (*never, once, twice, more than twice*), the number of times the respondent vandalized or destroyed private property (*never, once, twice, more than twice*), the number of times the respondent stole something (*never, once, twice, more than twice*), and whether or not the respondent used marijuana in the past year (*did not use marijuana, used marijuana at least once in the past year*). Missing values were imputed in latent trajectory estimation models using a maximum-likelihood approximation method. Each delinquency index ranges from 0-10. Using these indices, I estimated latent trajectory groups using the zero-inflated poisson distribution, which is designed for analysis of longitudinal data that has a high number of zeros. The zero-inflated poisson distribution is appropriate here because the indices for delinquency at the first two time-points are heavily skewed towards zero; specifically, 76% of adolescents at age ten and 70% at age twelve had a delinquency score of zero (Jones and Nagin 2012).

Using the five available time points, I began by estimating a single quadratic trajectory model (Andruff et al. 2009; Curran and Muthén 1999). The quadratic model is

suitable because it is capable of capturing the incline, and subsequent decline in delinquency that is described by the adolescent-limited model of offending. Results from Table 2 indicate that both linear and quadratic components are statistically significant ($p < .001$) (BIC = -40035.09). The shape of the trajectory can be described as escalating from early adolescence until age sixteen, and then declining thereafter (see figure 6).

Results for the model specifying two trajectories reveal a small group that engages in low levels of delinquency throughout adolescence (25%), and a larger group that escalates in delinquent behavior until age 16 and then declines subsequently (75%) (BIC = -36499.30) (see figure 7). The quadratic term for group two is statistically significant ($p < .001$). However, the quadratic term for group one (low offenders) is not statistically significant, which suggests that the quadratic term should be removed from the equation (Andruff et al. 2009). When the quadratic term for group one is taken away, the linear component becomes statistically significant ($p < .01$) (BIC = -36499.30), indicating that the polynomial type for the low offending group is best described as linear.

Nested models that test a different number of trajectories can be compared using an estimate of the log Bayes Factor (Jones, Nagin, and Roeder 2001):

$$2\log_e(B_{10}) \approx 2(\text{BIC difference})$$

The estimate is approximately equal to two times the difference in Bayesian Criterion Values (BIC) values for compared models. The difference is calculated by subtracting the BIC of the simpler model (i.e., the model with the smaller number of trajectories) from the more complex model (i.e., the model with the larger number of trajectories). The resulting

estimate can be assessed based on a set of guidelines for interpreting log Bayes Factor: values ranging from 0-2 are weak evidence for the more complex model; values from 2-6 are moderate evidence; values from 6-10 are strong evidence; and values above 10 are very strong evidence (Jones, Nagin, and Roeder 2001). Comparing models suggests that a two-group model is better than a single-group model (log Bayes Factor= 7,071.58).

A three-group model shows a low-offending trajectory (24% of respondents, strongly resembling “abstainers”), a trajectory that escalates until age sixteen before declining (64.4% of respondents, resembling “adolescent-limited offenders”), and a chronic high offending trajectory (11.1% of respondents, approximating “life-course persistent offenders”) (figure 8). The linear term for group 1 remains significant, and the quadratic terms for groups 2 and 3 are also statistically significant (BIC=-35397).⁷ Additionally, assessing the log Bayes Factor indicates that a three-class model is superior to a two-class model (log Bayes Factor =2,199.92).

Finally, a four-group model identifies low offenders, one low-escalating group, one high-escalating group, and one offending group that engages in delinquency moderately but persistently (BIC=-35225.30) (figure 9). However, group 3 (persistent, moderate delinquents) has nonsignificant linear and quadratic terms. The model was rerun after

⁷ I also investigated cubic, quartic, and quintic polynomial types for each group. Although these components tended to be statistically significant, they do not add valuable information about trajectories of each group. General shapes of the trajectories were highly similar to the quadratic polynomial types; thus, I focused my analysis on quadratic shapes for offending groups.

removing the quadratic term for group 3, but the linear estimate remains nonsignificant. Additionally, because the two escalating groups are substantively very similar to one another and theoretically inconsistent with the life-course persistent and adolescent-limited model of offending, I chose the three-group model to proceed with analysis. Consistent with past research, the three-trajectory model indeed indicates that the majority of adolescents engage in moderate levels of delinquent behavior during their teenage years (Elliott, Huizinga, and Menard 1989; Farrington, Ohlin, and Wilson 1986; Moffitt 1993; Moffitt and Silva 1988; Piquero, Brezina, and Turner 2005). Importantly, these categories are only meant to simulate Moffitt's taxonomies, as data limitations restrict an analysis of adulthood offending.

Below, I describe measurements for covariates that will be used to predict membership probabilities in offending taxonomies. Table 3 displays descriptive statistics for all variables. Before I discuss these measurements, it is important to point out that there is an inherent methodological problem when it comes to examining the predictors of Moffitt's offending taxonomies. To capture adolescents who abstain, who offend temporarily, and who offend persistently, it is necessary to draw from longitudinal data that provides information on adolescents' misbehavior during early, middle, and late adolescence. However, to satisfy criteria for causality, predictors of the offending taxonomies should be measured prior to delinquent behaviors that are used to classify individuals into offending groups. For instance, one option might be to measure each predictive component of Moffitt's abstention processes when respondents are eight or nine years old; this strategy would establish appropriate causal ordering and bolster arguments suggesting that an individual's

membership in an offending group is a consequence or outcome of characteristics measured before respondents reach adolescence. However, this approach would be incompatible with Moffitt's discussion of the maturity gap. Specifically, most children have not undergone key pubertal changes by ages eight or nine; thus, this approach would not allow for an examination of late pubertal development and its effect on delinquency as is specified in the theory. Likewise, it seems illogical to believe that children's exposure to structural barriers in childhood could predict their participation in delinquency for the next several years, unless such exposure is assumed to be a stable characteristic.

A second option might be to classify adolescents as abstainers, limited-offenders, or persistent-offenders based only on items measured in late adolescence (e.g., at ages sixteen and eighteen), and to predict group membership using items measured at earlier time points. Here, there is a risk of classifying youths who were quite delinquent in early and middle adolescence as abstainers if they desisted by late adolescence. Moreover, an offending trajectory that escalates in early and middle adolescence before dropping off is more consistent with Moffitt's discussion of adolescent-limited offending than it is with abstention. Relying only on measurements of delinquent behavior in late adolescence would also create problems for identifying youths who offend persistently, which requires information gathered from individuals over a more extensive course of time. Measuring independent and mediating variables at only a single point in time early in adolescence may also be problematic and inconsistent with the theory. Moffitt's discussion implies that abstention can be a function of *prolonged* exposure to structural barriers that continuously eliminate

youths' access to delinquent peers. Structural barriers to delinquent peers may weaken or break down as children transition into adolescence; hence, structural barriers promote abstention only when they remain intact and effective throughout an individual's teenage years. It is also difficult to believe that being rejected from one's peers during early adolescence would be enough to foreclose opportunities for delinquency throughout middle and late adolescence, unless of course their isolation from other children continues throughout that entire time period.

Based on the limitations of these approaches, I rely on offending taxonomies produced by latent trajectory analysis, which used information from when respondents were approximately 10, 12, 14, 16, and 18 years of age. To measure independent and mediating variables, I also use information collected during adolescence. Many of these items are “global” measures, in that they take advantage of information garnered from multiple waves of data throughout respondents' teenager years. Because some of these items are measured concurrently with or subsequent to the first time point of assessment for producing offending taxonomies (i.e., at age 10), the analyses presented later in this manuscript are descriptive and correlational—although causation is implied, it is not adequately addressed. While there are clear limits to this approach, relying on measures that gather information during adolescence is more compatible with Moffitt's theory than those that measure independent and mediating variables prior to the time that respondents had reached adolescence or that classify individuals into offending taxonomies based on only one or two waves of data.

4.2.2 Covariates

Moffitt theorizes that late pubertal onset leads to abstention indirectly because late-developing adolescents do not experience the maturity gap (or experience it less intensely) and therefore do not harbor psychological strain that derives from biological and social maturity imbalances. Direct measures of pubertal maturation are not available for the children of the NLSY79. To capture late pubertal onset for male respondents, I use an empirically supported proxy for pubertal maturation: conditional height difference in standard deviation score (conditional HD-SDS) (Ong et al. 2012). Conditional HD-SDS estimates reveal changes in height between two given time points. The majority of male adolescents begin to experience pubertal changes before age fourteen and thus experience the most significant changes in height by age fourteen (Anderson, Dallal, and Must 2003; Marcell 2007). Given this, significant height growth after age fourteen can be a key sign of late pubertal onset among males. I calculated a pubertal maturation score for each male respondent using the following formula:

$$sds_2 - r(sds_1) / \sqrt{(1-r^2)}$$

R= Pearson *r* correlation coefficient between SD scores at ages 14 and 18 for males

sds₁=height SD score (z-score) at age 18 for males

sds₂=height SD score (z-score) at age 14 for males

Following this, I created three pubertal-onset variables for males: *early pubertal onset* (pubertal maturation score is one standard deviation or more below the average, indicating very little growth between the ages of fourteen and eighteen), *late pubertal onset* (pubertal

maturation score one standard deviation or more above the average, indicating significant growth between ages fourteen and eighteen) and *on-time pubertal onset* (pubertal maturation score that falls between one standard deviation below and the above the average).

Standardized height scores are not recommended for use as proxies of pubertal onset among females, as timing of first menstruation is a more precise indicator (Ong et al. 2012). Based on estimates of average menarche among female adolescents, I coded female respondents who reported their first menstruation before the age of twelve as experiencing early pubertal onset, those who experienced their first menstruation after age fourteen as experiencing late pubertal onset, and those who experienced first menstruation between the ages of 12 and 14 as experiencing normative pubertal onset (Anderson, Dallal, and Must 2003; Marcell 2007). Finally, I created three new dummy variables that account for pubertal onset for both males and females: *early pubertal onset* (n=951 or 19%), *late pubertal onset* (n≈500 or 10%), and *normal pubertal onset* (n≈3,552 or 71% of the sample).

Various types of adult-role enactment may also allow youths to avoid a sense of maturity imbalance. To measure paid work, I created an item that represents the average number of waves each respondent worked for pay throughout adolescence. The item ranges from 0 when respondents did not work for pay during adolescence, to 1 when respondents worked at every time point. *Community service involvement* is the average number of waves respondents volunteered in environmental, educational, medical, community, political, or service groups at ages sixteen and eighteen.

I measure adolescents' exposure to autonomy-supportive parenting with three items. *Mother explains decisions* captures how often the child perceived that his or her mother explained important decisions to him or her at ages 10, 12, and 14 (*rarely, sometimes, often*). *Mother listens* measures how often the child perceives that his or her mother listens to his or her side of the argument across all five waves (*rarely, sometimes, often*). *Parents allow autonomy* is the sum score for items that ask whether parents allow children to make their own decisions about money, clothes, friendships, curfews, allowances, television, and religion at age fourteen ($\alpha=.88$).⁸ Finally, *school performance* represents youths average testing percentile scores for reading, comprehension, and math at ages 10, 12, and 14 ($\alpha=.87$).

To assess adolescents' perceptions of the maturity gap, I use an index based on four items administered to respondents at ages 14, 16, and 18: the extent to which the child argues with parents about household rules concerning the child's whereabouts, watching television, doing homework, and dating/going to parties (*hardly ever, sometimes, often*). Responses to these items reflect the extent to which adolescents feel they are governed unfairly by parents.

⁸ I attempted to capture adolescents' exposure to discrete parenting types (autonomy-supportive, authoritarian, indulgent, and neglectful styles) with key indicators of support and demandingness / control using latent class analysis. Resulting classes did not discretely represent parenting styles that have been emphasized in the literature (Baumrind 1971; Maccoby and Martin 1983). Rather, autonomy-supportive parenting strategies are distributed across three parenting types in differing degrees, and no truly authoritarian parenting class could be identified. Accordingly, I rely on three separate measures to capture youths' access to autonomy-supportive parenting strategies rather than to code them according to one specific style of parenting.

Adolescents who perceive greater disjuncture between their biological and social capabilities are likely to argue more with their parents about household rules, given that such adolescents believe themselves capable of autonomous decision-making and deserving of adult privileges (Steinberg 1988). I first averaged scores for each item across each wave; then, I conducted exploratory factor analysis using maximum likelihood factor analysis on all four cumulative items to aid in the construction of a reliable measure of perception of the maturity gap. The items load on one factor (Eigen= 2.00), with individual item loadings ranging from .60 to .62. Item-analysis indicates that the items collectively have adequate reliability ($\alpha=.65$). Scores range from 1—when adolescents perceive the maturity gap with low intensity, to 3—when they perceive it with high intensity.

Process 2 suggests that structural characteristics lead to abstention indirectly by reducing or eliminating access to delinquent peers and criminal learning opportunities. I investigate several types of structural barriers that are based in the neighborhood, the school, the family, or in prosocial time-use. *Neighborhood safety* is an index based on seven items that ask respondents to indicate to what extent their neighborhood is characterized by a lack of jobs, low collective efficacy, lack of supervision over teen groups, crime, people who do not show respect towards one another, abandoned buildings, and lack of police (*big problem, somewhat of a problem, not a problem*). I averaged responses for each individual item for ages 16 and 18. Then, I assessed factor patterns of the averaged items using maximum-likelihood factor analysis; the items load on one factor (Eigen=7.16), with individual factor loadings ranging from .65 to .84 ($\alpha=.88$). A higher score indicates more exposure to

neighborhood-based structural barriers. *School effectiveness* is captured with items that evaluate to what extent it is difficult to get away with disobedient behavior at school at ages ten through eighteen (*not true at all, not too true, somewhat true, very true*).

I assess prosocial institutional time-use barriers with several measures: paid work, community service involvement, church attendance, academic involvement, and prosocial friendships. *Paid work* and *community service involvement* are identical to measures from process 1. *Church attendance* is the average score across all six waves that indicate how often the respondent attends church service (*not at all to several times a year or less, about once a month, two or three times a month or more*). *Academic involvement* is the average score across five waves that ask respondents to report to what extent school requires them to think to the best of their abilities (*not true at all, not too true, somewhat true, very true*). Finally, *prosocial friendships* is the average number of waves respondents report that many of their friends attend religious services (*no, yes*).

I assess family-based structural barriers with five items: *mother-child closeness*, *parental rule-setting*, *parent-child communication*, *quality time with parents*, and *household labor*. *Mother-child closeness* is the average score on items that ask adolescents how close they are with their mothers across ages 10-18 (*not close at all, somewhat close, close, very close*). *Communicative closure* is an index based on two items administered at every wave that assess how often respondents' mothers know where they are when they are not at home, and how often the child tells his or her parents about his/her whereabouts (*nothing at all, very little, some, a lot*) ($\alpha=.70$). *Quality time with parents* is the sum score for seven items issued

at age 12 that ask respondents to report whether they went to the movies, went out to dinner, went shopping, went on an outing, went to church, spent time together doing homework, or played a game with their parents in the past thirty days (*no, yes*). *Parental rule-setting* is the average score on items administered at ages sixteen and eighteen that ask the degree to which their parents place limitations on their whereabouts and time with friends (*never, rarely, sometimes, often*). Finally, *household labor* is the average score for whether the adolescent reports doing household chores regularly at ages 10, 12, and 14 (*no, yes*).

To capture adolescents' access to delinquency learning opportunities, I began with five items that ask respondents to indicate if their friends pressure them to skip school, to use illegal drugs, to use alcohol, to smoke cigarettes, and to commit crime (*no, yes*). I averaged the scores for each item across each wave to capture overall scores for each item (e.g., average score for pressure to skip school across ages 10, 12, 14, 16, and 18). I then explored the factor structure using the five cumulated items. The items load on one factor (Eigen=3.69) and factor loadings range from .58 to .74. I took the average of these items to create an index, and reverse-coded the measure to represent *delinquent peer non-exposure* ($\alpha=.88$).

Process 3 purports that abnormal personal characteristics lead to abstention indirectly through peer rejection. I assess a number of psychological/emotional, temperamental, cognitive, and physical characteristics that may lead to social isolation. *Psycho-emotional instability* is the average score for twelve BPI items (i.e., behavioral problems index) administered to mothers when the child was ages 10, 12, and 14 that assess the extent to

which the child is worrisome, impulsive, sullen, unremorseful, withdrawn, high strung, depressed, moody, antisocial, paranoid, fearful/anxious, or exhibits signs of an inferiority complex (*not true, sometimes true, often true*). The items load on one factor (Eigen 5.33) with individual loadings ranging from .55 to .88 ($\alpha = .88$). To tap *risk-avoidance*, I averaged scores across all five waves of data for three items that ask children to indicate the extent to which they avoid danger, risks, and new experiences (*strongly disagree, disagree, agree, strongly agree*) ($\alpha = .70$). The items load on one factor (Eigen =1.90) and individual loadings range from .75 to .82. To evaluate *intellectual giftedness*, I used an analytical cut function to create five equal groups from respondents' testing percentile scores for reading, comprehension, and math at ages 10, 12, and 14. I coded respondents as intellectually gifted if they were grouped in the highest category, representing the 85th percentile for testing scores.

To assess body weight, I first calculated a body mass index (BMI) estimate at age fourteen by dividing the adolescent's weight (in pounds) by the adolescent's height squared (in inches), and then multiplying this estimate by the appropriate conversional metric (i.e., 703) (National Institute of Health 2013). Following guidelines set forth by the National Institute of Health (2013), I coded respondents as *underweight* (less than 5th percentile), *healthy weight* (5th to 85th percentile), *overweight* (85th to 95th percentile), or *obese* (95th percentile and above). Respondents who were one standard deviation below the average height for their respective gender at age fourteen were coded as having *short stature*, and those who were one standard deviation above the average height at age fourteen were coded

as having *tall stature*. *Disability* is a dummy variable that captures respondents who reported having autism spectrum disorder, severe cognitive difficulties, Down's syndrome, deafness or hearing problems, speech impediments, or any type of physical disability at any wave. Although it would be ideal to separate disabilities into communicative, cognitive, or physical subtypes, only 1.8% of the sample reported some type of physical handicap, and only 1.4% reported deafness, hearing problems, or a serious speech impediment. Similar estimates were found for reports of autism, cognitive impairments, and mental retardation. Thus, small cell sizes made it necessary to combine disability categories. Finally, I investigate pubertal onset as a potential precursor to peer rejection, as some research suggests that youths who experience abnormal pubertal onset may feel frustrated by the fact that they stand out from their peers and wish they could better fit in with children of their same age (Graber, Brooks-Gunn, and Warren, 2006).

I examine processes of peer integration using several measures. *Difficulty making friends* is the average score across all waves for items that ask children to report how difficult it is to make friends at school (*not difficult at all, difficult sometimes, often difficult*). *Desires more friends* is the average across five waves for items that ask children to report how often they feel lonely and wish they had more friends (*hardly ever, sometimes, often*). *Number of friends* is the respondents' average number of male and female friends reported at each wave.⁹ Because capturing youths' experiences with peer rejection is complex, assessing this

⁹ I also examined respondents' numbers of friends of the opposite sex, and respondents' numbers of male friends throughout adolescence. These items operate almost identically to the total number of friends measures

process with multiple measures gives a more complete picture as compared to relying on a single measure. While the total number of friends measure helps to understand the size of adolescents' friendship networks, which is important for understanding youths' access to delinquency learning opportunities, it does not tap into whether or not adolescents actually perceive themselves to have fewer friends or to be more isolated than their peers. Items related to loneliness / desires for more friends and the difficulty of making friends helps to cover these more subjective components of peer integration.

4.2.3 Control Variables

Using as precedent studies from the criminology and family sociology literature that investigate parent-child processes and child behavioral outcomes, I control for race, sex, family structure at age eighteen (*parents are married, parents are divorced / separated / widowed / mother has never married*), and maternal educational attainment at age eighteen (years of education). I rely on maternal educational attainment rather than household income to capture socioeconomic status because education is comparatively easy to measure in self-administered surveys and typically collects higher response rates than income-related measures (Galobardes, Shaw, and Lynch 2006). Measures of educational attainment are also less sensitive to historical context and individual respondent characteristics such as age and work history / conditions (Galobardes, Shaw, and Lynch 2006). Likewise, income measures

for predicting the odds of membership in offending taxonomies. Thus, for brevity, I omitted these items from the final models and do not discuss them explicitly.

reveal how much money is earned, but not how money is spent or the extent of financial need experienced by families. To help capture socioeconomic (dis)advantage, I created an additional control variable that calculates the total amount of welfare support that respondents' mothers received from 1988 to 2010. I then recoded the variable into three categories, representing low, moderate, and high levels of welfare receipt. Table 4 indicates the time-points for measurement of all key independent variables.

4.2.4 Missing Data and Auto-Correlation

Unsurprisingly, some adolescents do not have data on all items across all five waves of assessment. To preserve these cases for analysis, I use a data augmentation approach (Expectation-Maximization) to estimate a multiple imputation procedure, which relies on a sequential chain of data augmentation cycles (i.e., Markov chain Monte Carlo). I use a series of five imputations to predict the missing values of independent variables. The procedure estimates a set of plausible values for missing data and replaces the missing values with these estimates and produces appropriate standard errors. The technique then analyzes the estimates using standard regression procedures, and results from these analyses are combined. The resulting estimates reflect statistically valid inferences that take into account the uncertainty owing to missing values (Allison 2002). The percent of respondents with missing values is generally less than five percent of the overall sample for each item.

In some cases, the sample in the present study includes multiple children born to individual mothers, which violates the OLS regression assumption that the data represent a

random sample of the population. I use a cluster correction procedure for all analyses to correct for this lack of independence. Also, I utilize the NLSY's custom sampling weights, which adjust the unweighted data for sample attrition of mothers and children and for the over-representation of African-American and Hispanic respondents.

4.2.5 Examining Abstainer Heterogeneity

Existing studies of abstainers that are based on average abstainer estimates may allow smaller subtypes of abstainers to go undetected. The idea that abstainers exist in subtypes implies latent variables, or variables that cannot be observed directly and that must be extrapolated from responses or values across multiple observed items (Andrich 1988). To address the possibility of abstainer heterogeneity, I use all independent and mediating variables from each process as indicators in latent class analysis, a statistical method that identifies discrete and mutually exclusive latent classes based on responses to observable variables (i.e., "indicators") (Lanza et al. 2007). The method resembles covariance structure analysis (also known as the factor model); however, latent class analysis identifies categorical latent classes rather than continuous latent variables, and is especially useful for categorizing cases (i.e., people) rather than variables (Lazarsfeld and Henry 1968). Methodologists consider latent class analysis to be an improvement over traditional cluster analysis, as cases are not absolutely assigned to classes, but have a probability of membership for each class. A "class" is characterized by a pattern of conditional probabilities

that indicate the chance that individuals or cases take on certain values on indicators (Lanza et al. 2007).

Items from each abstention process are used as indicators in latent class analyses of abstainers (n=1,221). I used an analytical cut function to create discrete items from continuous variables. The cut function creates a designated number of categories out of continuous items so that each category is relatively equal in size. I recoded these items into indicators with three values representing low, medium, and high attributes. A few items are considerably skewed, in which case three equal groups could not be generated (e.g. parents allow autonomy; delinquent peer non-exposure, desires more friends). These items were cut into two categories (low, high) rather than three. Table 5 displays descriptive characteristics for all latent class indicators. I examine latent classes using three models, each model designating a different number of latent classes (two, three, and four classes). I then identify the best-fit model using model-based measures of fit (log-likelihood and chi-square tests) and model comparison measures (Akaike's Information Criterion, Bayesian Information Criterion) (Lanza et al. 2007). The ultimate latent class model is used to predict the odds of membership in each class using socio-demographic covariates and to further understand the nature of the classes by interpreting item-response probabilities for each subgroup.

CHAPTER 5

RESULTS

5.1 Descriptive Statistics

Referring back to table 3, adolescents' overall levels of delinquency and participation in individual types of delinquency increase at each wave through age sixteen, after which they decline. A growing percentage of respondents report marijuana use at each wave; average scores for aggressive behavior, vandalism, and theft increase considerably at each wave until age eighteen. Demographic estimates indicate that marginally more than half of the sample is nonwhite. Applying the NLSY weight factor brings the percentage of whites to 72%, which is much more consistent with estimates from the U.S. Census. The sample is equally distributed by gender, and mothers of respondents on average have one year of post-high school education. The majority of respondents are from households in which their mothers are married at age eighteen and the average score for welfare receipt is 1.77 (i.e., about \$16,000).

5.2 Testing the Abstention Processes

Below, I present models testing each abstention process. For each proposition, I begin each section by referring to ordinary least squares regression models that predict theoretical mediators (perceptions of the maturity gap, delinquent peer non-exposure, and peer acceptance / rejection) using key independent variables from each process. Following this, I turn to latent trajectory models, which provide log-odds estimates for covariates (also

known as risk factors) for each group relative to one group chosen as the reference category. For all models, abstainers are designated as the reference group. Although some independent variables may not significantly predict theoretical mediators in the OLS models, I include them in latent trajectory models predicting group memberships. Specifically, these items may be important for differentiating abstaining from non-abstaining adolescents, even if they do not operate exactly as theoretically specified. For each table predicting group memberships, model I predicts the log odds of membership in the adolescent-limited offending group versus the abstaining group (column 1), and the log odds of membership in the life-course persistent offending group versus the abstaining group (column 2) by key theoretical covariates. Model II adds in control variables. Model III assesses key theoretical covariates in the presence of controls, adding in intervening variables to further assess mediation effects. Variance inflation factors (VIF) and their reciprocals (i.e., tolerance scores) were assessed for each OLS regression and latent trajectory model to account for issues related to multi-collinearity. VIF values did not exceed 5 for any model, nor did tolerance scores exist below .10.

5.2.1 A Smaller-than-Normal Maturity Gap

Table 6 regresses perceptions of the maturity gap on key theoretical predictors of abstention from condition 1: a smaller-than-normal maturity gap. Consistent with Moffitt's theory, late-developing youths perceive the maturity gap less intensely than those who experience on-time pubertal development. Likewise, school performance is negatively

associated with perceptions of the maturity gap, as are two of three autonomy-supportive parenting strategies (i.e., parents allow autonomy and mother listens). Contrary to what is expected, working for pay and participating in community service activities for longer durations exacerbate rather than alleviate perceptions of the maturity gap.

Table 7 predicts the log-odds of limited-offending and persistent-offending versus abstaining using key theoretical covariates. Model I indicates that early pubertal development, late pubertal development, and longer durations of paid work increase the likelihood that respondents will abstain rather than engaging in limited-offending. Alternatively, more community service involvement, higher academic performance, and more exposure to the autonomy-supportive parenting strategy denoted by mothers explaining important decisions to the child are all associated with a *lower* likelihood of abstaining. The second column under model I shows the effects of risk factors on the log odds of group membership in the persistent-offending group versus the abstaining group. Late pubertal development, higher academic performance, and more exposure to autonomy-supportive parenting strategies (i.e., parents allow autonomy and mothers listen) continue to predict a greater likelihood of abstention versus persistent offending.

Model II assesses risk factors in the presence of controls. None of the statistically significant findings from column 1 in model I are explained away by controls, although a few of the effect sizes are reduced (e.g., early pubertal development, community service involvement). White respondents are more likely to engage in limited-offending than to abstain; maternal education is positively associated with the log odds of limited-offending,

whereas maternal welfare receipt is negatively associated. Although the main-effect model indicated that late developing youths are more likely to abstain than to offend persistently, this effect is not robust enough to withstand controls for gender, race, SES, and family structure (model II, column 2). The effects of school performance and autonomy-supportive parenting strategies remain statistically significant. Male adolescents are more likely than females to offend persistently; youths from married households are more likely to abstain (compared to youths from divorced, separated, widowed, or single-mother households).

Model III adds in perceptions of the maturity gap to assess mediation effects between key independent variables and the log odds of group membership. Supportive of the theory, stronger perceptions of the maturity gap are associated with a lower likelihood of abstaining. Specifically, for each unit of increase in perceptions of the maturity gap, the log odds of limited-offending increase by 2.34, and the log odds of persistent-offending increase by 2.08, each relative to the log odds of abstaining. Moreover, when controlling for perceptions of the maturity gap, the effect of late pubertal development on limited-offending is reduced to non-significance (see column 1), which provides support for the notion that a smaller-than-normal maturity gap accounts for the relationship between late pubertal development and delinquency (Baron and Kenny 1986). Controlling for perceptions of the maturity gap does not explain much of the effects of paid work or early pubertal development on the log odds of limited-offending, indicating that these associations are direct or are explained by alternative factors. Hence, inconsistent with Moffitt's theory, it does not appear to be the case that abstainers have relatively high levels of social capabilities, at least when compared

to the majority of youths who offend temporarily during adolescence. However, as shown in column 2, the negative effect of school performance on the log odds of persistent offending is explained by abstainers' lower perceptions of the maturity gap, as is the effect of the autonomy-supportive parenting strategy characterized by mothers listening to the child's side of the argument. These findings suggest that although abstainers may not feel more adult-like than most youths, they do feel more adult-like than their peers who engage in delinquency persistently. Thus, while abstainers and limited-offenders can be distinguished from one another by their biological capabilities, abstainers and persistent-offenders differ in terms of their social capabilities.

Taken together, the results suggest moderate support for Moffitt's first abstention condition, as youths who experience a smaller-than-normal maturity gap are more likely to abstain from delinquent behavior. However, identifying the forces and conditions that promote a smaller-than-normal maturity gap is less straight-forward. For instance, while adolescents with low biological capabilities (i.e., late pubertal development) are more likely to abstain than to offend moderately during adolescence, they are equally likely to engage in persistent offending. Because the critical element for persistent-offending in Moffitt's theory relates to the presence of neuropsychological deficits, this finding might indicate that deficits have a tendency to co-occur with late pubertal development. I explored this possibility by assessing whether late-developing youths are more likely than teens who develop on-time to have disabilities (i.e., autism, mental retardation, cognitive impairments) or to perform

poorly in school; however, none of these models show statistically significant associations (not tabled).

An alternative explanation for this finding relates to the “deviance hypothesis,” which suggests that experiencing off-time pubertal development, whether early or late, creates challenges for children’s transition into adolescence and positions them in a deviant category relative to their peers who undergo on-time development (Alsaker 1995; Peterson and Crockett 1985). It is possible that some late-developing youths engage in higher levels of delinquent behavior to gain a sense of status or prestige among their peers as some research has indicated (Andersson and Magnusson 1990; Silbereisen and Kracke 1993). While more research is likely needed to understand the association between late pubertal development and delinquent behavior, it is evident that the relationship may be more complex than what Moffitt anticipates.

The finding that early-developing adolescents are more likely to abstain than to engage in limited-offending during adolescence is also inconsistent with Moffitt’s theory. Specifically, it should be the case that early-developing youths perceive a greater mismatch between their biological and social capabilities than youths who experience on-time or late development and consequently they should be considerably more motivated to mimic the rebellious behaviors of their peers. Indeed, much research has suggested that early pubertal development is a risk factor for externalizing behaviors, sexual activity, and substance use (e.g., Felson and Haynie 2002; Haynie 2003). However, it may be the case that early pubertal development is interpreted by many adolescents as an atypical personal trait, in

which case opportunities for modeling delinquent behavior may be forfeited (Alsaker 1995; Peterson and Crockett 1985). Results from subsequent analyses offer some support for this idea (to be discussed). At the same time, because there are no observed differences in the odds of abstaining versus that of persistent offending for adolescents who experience early pubertal development, it appears that there is variation in the ways that early-developing youths cope with their circumstances. While some may be insulated from delinquent behavior because they possess fewer friends with whom to partake in delinquency, others may internalize peer rejection as a psychological strain that instigates rebellious behaviors as a means of resolving their frustrations or for claiming a sense of status among their peers (Agnew 1992; Andersson and Magnusson 1990).

Results show limited support for the notion that high social capabilities can lead to a smaller-than-normal maturity gap and a greater likelihood of abstention. While youths who work for pay for longer durations during adolescence are more likely to abstain than to offend moderately; this association is not explained by their perceptions of the maturity gap. In fact, adolescents who work for pay for longer durations tend to perceive the maturity gap *more* intensely than adolescents who do not work or who work sporadically or infrequently during adolescence. Perhaps this is the case because adolescents who consistently work for pay get a taste of adulthood outside of the home, given that they are expected to work alongside adults and are compensated with monetary rewards, but remain restricted by parents and school officials in other dimensions of their lives. The contradictions between the amounts of autonomy allowed in some contexts but not others may lead working youths

to feel more entitled to adult resources, but psychologically strained by their inability to fully “cash in” on those resources in all respects.

Additionally, while higher levels of school performance and exposure to autonomy-supportive parenting strategies (i.e., parents allowing for autonomous decision-making and mothers listening to the child’s side of the argument) can narrow adolescents’ perceptions of the maturity gap, these characteristics do not consistently differentiate abstainers from both types of non-abstainers. Whereas abstaining adolescents have high social capabilities relative to persistent offenders, they fare similarly or in some cases worse than youths who engage in delinquency moderately. Although not totally consistent with Shedler and Block’s (1990) description of cold, controlling, and unsupportive abstainer home environments, it is notable that abstaining youths receive less exposure than most youths to autonomy-supportive parenting, which is typically touted as the ideal parenting type in the U.S. context (Grolnick et al. 2000; Steinberg, Elmen, and Mounts 1989). The fact that adolescents who engage in delinquency moderately receive more exposure to autonomy-supportive parenting also suggests that such strategies do not always have an insulating effect for adolescents’ misbehavior. Rather, it may be the case that teenagers who are granted more autonomy in the household may feel more confident stepping outside the confines of their parents’ rules.

5.2.2 Structural Barriers to Delinquency Learning Opportunities

Table 8 regresses delinquent peer non-exposure on each theoretical predictor from abstention process 2 (structural barriers). As would be predicted by Moffitt’s theory, safe

neighborhood contexts, effective schools, close mother-child relationships, communicative closure, church performance, and academic involvement are positively associated with delinquency peer non-exposure. Contrarily, experiencing greater levels of parental rule-setting and spending longer durations in paid work predict *greater* access to delinquent peers. Employment during adolescence has been recognized as a risk factor for youths' access to delinquent peer networks (see Paternoster et al. 2003 for a review); thus, this finding is not entirely unanticipated. However, the findings regarding parental rule-setting are somewhat counterintuitive, but may reflect the fact that parents invoke more rules regarding their children's whereabouts specifically because their children have problematic friendships or because they have previously exhibited conduct problems. Quality time with parents, time in household labor, prosocial friendships, and community service involvement have no effect on youths' access to delinquent peers.

In table 9, column 1 of model I reveals that youths from safer neighborhoods, and who are more involved in community services, who spend more quality time with their parents, and who have more communicative closure with their parents are more likely to offend moderately than to abstain. Alternatively, teenagers with closer relationships to their mothers, who engage in household labor more often, who work for pay for longer durations, and who attend church more frequently are more likely to abstain than to participate in limited-offending. Compared to persistent offenders (see column 2), abstainers attend more effective schools, have closer relationships with their mothers, have stronger levels of communicative closure with their parents, attend church more often, and are more

academically involved. The significant predictors of abstention from model I remain statistically significant in the presence of controls (model II).

Model III adds in delinquent peer non-exposure. Consistent with Moffitt's predictions, as non-exposure increases, the log odds of limited and persistent offending decrease. However, delinquent peer non-exposure explains very little of the effects that close mother-child relationships, church attendance, or paid work have on the log odds of abstaining compared to moderate offending (model III, column 1). These findings provide only modest support for the notion that pro-social time-use or familial barriers promote abstention specifically because they reduce youths' access to delinquent peers and delinquency learning opportunities. Likewise, column 2 of model III indicates that the effects of school effectiveness, mother-child closeness, and communicative closure are reduced, but remain statistically significant in the presence of delinquent peer non-exposure when comparing persistent offending group membership to that of abstaining. The effects of church attendance and academic involvement are explained by the inclusion of delinquent peer non-exposure.

Looking across models, results suggest some support for Moffitt's proposition regarding youths' exposure to structural barriers and the likelihood of delinquency abstention. Reduced exposure to delinquent peers helps to differentiate abstainers from non-abstainers. Additionally, two types of structural barriers appear to be especially important. Close mother-child relationships and frequent church attendance distinguish abstaining adolescents from both persistent- and temporarily-offending youths, and both characteristics

are associated with higher levels of delinquent peer non-exposure. These findings are intuitive. Close relationships with children may signify that parents have made active and ongoing efforts to be fully involved in their children's development, which often means taking time to help with homework, to attend sporting events and school functions, to eat dinner with one another, and to spend time with their children recreationally (Lezin et al. 2004). Cultivating strong bonds requires the physical presence of parents, which in turn attenuates adolescents' opportunities to spend unstructured time in peer contexts where delinquent behaviors are reproduced (Coleman 1990). Likewise, adolescents who attend religious services frequently may spend their evenings and weekends participating in youth groups, church choirs, or other related activities that consistently position them in the presence of conventional adults and that remove them from peer groups where delinquency is common.

But although adolescents who are exceptionally close to their mothers and who attend church frequently are more likely to abstain, delinquent peer non-exposure explains little of these effects when comparing the odds of limited-offending to the odds of abstaining. This suggests that other mechanisms may be at work. Although speculative, it is possible that in addition to reducing youths' access to delinquent peers, strong prosocial relationships also produce a *psychological* barrier to criminal misbehavior. Research and theory have long suggested that involvement in prosocial institutions and relationships can diminish the psychological appeal of criminal opportunities. For instance, social control theory (Hirschi 1969) and the social capital perspective (Coleman 1988; 1990; Furstenberg 2005; Parcel,

Dufur, and Zito 2010) each emphasize the importance of parent-child bonds for promoting children's socialization and for the transmission of conventional social norms and values. Parent-child bonds and other types of prosocial attachments embed in individuals a sense of common membership and accountability, and thereby reduce the allure of criminal behaviors that could threaten the existence of these bonds or that contradict the investments they have made in conventional relationships (Furstenberg 2005; Hirschi 1969; Sampson and Laub 1993). Compared to individuals who offend, non-offenders may be extraordinarily bonded and profoundly uninterested in criminal opportunities or relationships rather than simply blocked from individuals who engage in delinquency.

It is curious that although adolescents who work for pay for longer durations throughout their formative years are more likely to abstain than to participate in limited-offending, it is not because they perceive a narrower maturity gap or because they are insufficiently exposed to delinquent peers. It is possible that associations reflect what Hirschi (1969) referred to as "stakes in conformity." Hirschi's "commitment" component of social control theory argues that individuals who devote time and energy into conventional institutions such as school, work, or the family perceive their prosocial investments to outweigh the potential payoffs of crime in their evaluations of criminal opportunities. Employed youths may view criminal prospects as illogical and unwise, given that taking advantage of such opportunities would negate the time and effort they have invested in conventional paid work. This possibility remains hypothetical and would require additional analysis that transcends the scope of the present study.

It is also interesting that ecological contexts denoted by neighborhood environments do not consistently separate offending from non-offending youths. Specifically, more controlled neighborhoods predict a greater likelihood of moderate offending rather than abstention; thus, it is clear that some adolescents abstain even in disordered, criminogenic settings (i.e., neighborhoods with a lack of supervision, abandoned buildings, insufficient police presence, etc.). Although contrary to Moffitt's theory, these findings are not entirely unforeseen. Parents who raise children in densely-populated, urban, high-risk environments may be sensitive to the fact that criminal relationships and opportunities are locally abundant, and reflectively utilize high levels of restriction, behavioral control, and discipline to promote prosocial attitudes and behaviors and to keep their children from interacting with criminal individuals that reside within the community (Cauce et al. 2003; Forehand and Kotchick 1996; Furstenberg et al. 1999; Jarrett, 1997; Roche, Ensminger, and Cherlin 2007). Additionally, parents who live in high-risk neighborhoods may mandate their children's involvement in prosocial non-familial institutions such as the school, the church, or the community to ensure that their children have less time or opportunity to engage in delinquency (Elliott et al. 2006). Findings are also contrary to Moffitt's arguments regarding the importance of schools for promoting abstention. Rather, abstainers and limited-offending youths attend schools that are similar to one another regarding their ability to foreclose delinquent opportunities among the student body. Hence, residing in a rural or low-risk locale and attending highly effective schools need not be considered necessary conditions of

abstention. The majority of familial barriers and prosocial time-use barriers were also found to be inconsequential for distinguishing between abstaining and non-abstaining adolescents.

5.2.3 Atypical Personal Traits and Peer Rejection

Table 10 regresses each measure of peer acceptance / rejection on timing of pubertal development, body weight, height stature, disability, risk avoidance, psycho-emotional instability, intellectual giftedness, and control variables. Risk avoidance and intellectual giftedness are negatively associated with adolescents' total number of friendships. Moving to the next column, underweight and overweight adolescents are more likely to report that they wish they had more friends, as are adolescents who are tall for their age, who experience early pubertal development, and who possess a disability. Psycho-emotional instability positively predicts their desires for more friends. It is notable that although male respondents report fewer friends than female respondents, males are also less likely to report that they wish they had more friends. These findings highlight the importance of looking across various measures of peer integration, because having fewer friends overall does not automatically translate into a perception that one needs more friends. It may be the case that although males have fewer friends overall, they are more satisfied with their friendships than female adolescents. Finally, overweight and obese children each report that it is difficult for them to make friends, as do children with a disability and those with higher levels of psycho-emotional instability.

A few generalizations can be made regarding the types of adolescents most at risk for peer rejection. Overweight children experience complications integrating with peers based on both subjective measures of peer rejection. It is interesting that obese children do not follow an identical pattern. Obese adolescents are more likely than children in the healthy weight category to report that it is difficult for them to make friends, but they do not report that they wish they had more friends. Perhaps obese children have especially negative experiences with their peers, even with those they consider to be their friends. Accordingly, they may not derive psychological and social dividends from companionship in the ways that other youths do and therefore do not aspire for additional friendships. Similar to overweight adolescents, having a disability or experiencing symptoms of psychological instability increases the likelihood that adolescents report that they wish they had more friends and that it is difficult to make friends, though they do not report lower numbers of friends overall. Adolescents who are underweight or tall for their age report that they wish they had more friends, but score comparably to their counterparts on the other peer measures. Likewise, respondents who score high on risk-avoidance and those who are intellectually gifted report fewer friends. Hence, while being underweight, tall, intellectually gifted, or risk-avoidant do not appear to put children at a significantly greater risk for peer rejection, they are not entirely insulated from these processes.

In table 11, column 1 of model I shows that undergoing early or late pubertal development, being tall for one's age, possessing a disability, scoring high on risk-avoidance, and possessing psychological instability increases the log odds that respondents will abstain

compared to the odds of limited-offending, and these effects remain significant in the presence of controls (see model II column I). To further elaborate on the association between psycho-emotional instability, I also modeled individual measures that make up the instability composite independently of one another (not tabled). Results indicate that each measure of psycho-emotional instability positively predicts a greater likelihood of abstention compared to the log odds of limited-offending. Stated otherwise, mothers of abstaining youths are significantly more likely to evaluate their children as highly worrisome, impulsive, sullen, unremorseful, high-strung, depressed, moody, antisocial, paranoid, anxious, and as possessing an inferior complex than are mothers of adolescents who engage in limited-offending. However, although abstaining youths fare worse on these items than teenagers who engage in limited-offending, they rank better than teenagers who engage in persistent offending on measures related to impulsivity, sullenness, lack of remorsefulness, depression, and antisocial tendencies.

Column 2 shows that being overweight, obese, or possessing higher levels of psychological instability increases the likelihood of persistent-offending, whereas being tall, late puberty, having a disability, and scoring high on risk-avoidance increases the likelihood of abstention. The effect of the overweight category and late puberty for distinguishing persistent offenders from abstainers is explained away by controls, whereas the effects of obesity, tall stature, disability, risk-avoidance, and psychological instability remain statistically significant (see model II, column 2).

Model III adds in the three peer measures. Overall, the peer measures are not highly effective for differentiating the classes in a clear or consistent way. On one hand, adolescents who wish they had more friends are more likely to abstain than they are to engage in limited-delinquency, which is consistent with the “loner” image presented in Moffitt’s thesis. On the other hand, the other two peer measures do not distinguish abstaining youths from adolescents who engage in delinquency moderately. Moreover, while persistent offenders report more friends than abstainers, the former are more likely to report that it is difficult to make friends.

Column I shows that the effects of early pubertal development, disability, and psycho-emotional instability for distinguishing between limited offenders and abstainers are only slightly reduced when in the presence of peer acceptance / rejection measures. Recall that each of these characteristics is associated with stronger desires for more friends (see table 10). Peer measures do not explain the effect of risk-avoidance on the likelihood of abstention, which may suggest that the relationship is better described as direct rather than mediated. Specifically, risk-avoidant youths may abstain not as a function of peer rejection, but rather because their temperamental characteristics do not facilitate criminal behavior. Crime often requires a certain degree of risk-taking and impulsiveness, characteristics that may be incompatible with cautious, reserved, and introverted personality types (Wood, Pfefferbaum, and Arneklev 1993). Thus, for these youths, delinquency may be perceived as a profoundly unpleasant mode of behavior.

Column 2 shows that the greater likelihood for obese children to engage in delinquency persistently is partially explained by peer measures. Recall that obese children report that it is difficult for them to make friends (table 10). Thus, it appears that in some circumstances, perceptions of peer rejection may actually promote delinquent behavior, which challenges Moffitt's conceptualization of peer networks as a necessary condition of adolescent offending. Contrarily, the effect of disability for predicting abstention is also reduced in the presence of peer measures, which suggests that in other circumstances peer rejection can shield adolescents from delinquent behavior. While more research is needed to understand these differential effects, it is clear that the connection between experiences with peer rejection and delinquent behaviors is complex and potentially moderated by other personal or environmental characteristics. It may be that children who possess a disability have greater access to social supports at school or in the family, which could curtail the exacerbating effect of peer rejection on conduct problems (Moffitt 1993). Likewise, it may also be that children with a disability are physically or cognitively less capable of engaging in delinquent acts without the help of friends, in which case being shut out from local peer groups eliminates the possibility that they can engage in delinquent behavior.

Do abstainers have atypical personal traits that repel other adolescents? Consistent with Moffitt's theory, abstaining youths are more likely to have highly risk-avoidant personalities, to possess a disability, and to be atypically tall in adolescence. However, there is only modest evidence to suggest that they are socially isolated. While they desire friends more so than adolescents who engage in delinquency moderately, they do not differ in the

total number of friends that they report throughout adolescence, nor do they report that it is more difficult for them to make friends at school. Likewise, although they report fewer numbers of friends than persistently-offending youths, they are less likely to report that it is difficult for them to make friends. Taken collectively, abstainers do possess some characteristics that the literature has demonstrated to put children at risk for interpersonal problems in school or in the local neighborhood, and they do fare worse on some measures of peer integration when compared to most other youths. However, it is important to recognize that in various ways they are more socially and psychologically well-adjusted than teenagers who engage in delinquency pervasively.

5.3 Comparing Abstainers to Adolescent-Limited and Persistent Offenders

Looking across results, abstainers differ in important ways from offending adolescents. Abstaining youths perceive the perception of the maturity gap with less intensity, they have less exposure to delinquent peers, they attend church services more often, and they have closer relationships with their mothers. Likewise, their personality types can be described as highly risk-avoidant, they are more likely to possess a disability, and they are more likely to be atypically tall for their age. These characteristics might be considered to be the most important traits for distinguishing abstaining youths, as they help to differentiate abstainers from both types of offending adolescents. Additionally, these findings provide some support for each of Moffitt's abstention processes that detail smaller-than-normal

maturity gaps, structural barriers, and, and atypical personal traits as key conditions by which some adolescents abstain.

However, many characteristics differentiate abstainers from adolescent-limited offenders *or* from youths who offend persistently, but not necessarily from both groups. Compared to adolescent-limited offending youths, abstainers spend more time doing household labor and they work for longer durations throughout adolescence. Contrarily, they are less likely to be engaged in community service activities, they perform worse academically, they reside in more disordered neighborhood environments, and they are more likely to undergo off-time pubertal development. They also perceive less exposure to autonomy-supportive parenting strategies, less quality time with parents, and lower levels of communicative closure. Consistent with past studies (i.e., Shedler and Block 1990), abstaining youths exhibit higher levels of psycho-emotional instability and they are more likely to report that they wish they had more friends. Juxtaposed with persistent-offending adolescents, abstainers are exposed to more autonomy-supportive parenting strategies, have stronger communication with their parents, perform better at more effective schools, and fare better on psycho-emotional health measures. As previously discussed, abstainers on average perceive a narrower maturity gap than offending youths; yet, explanations for why this is the case depend on with whom they are compared. Contrasted with most youths who engage in delinquency temporarily, abstainers' narrow perceptions of the maturity gap derives from their tendency to undergo late pubertal development. Alternatively, when evaluated alongside persistent offenders, abstainers appear to perceive the maturity gap less intensely

because they are exposed to comparatively higher levels autonomy-support at home and at school. Thus, while it can be concluded that abstainers do in fact perceive a smaller-than-normal maturity gap than offending youths, the forces and conditions that give rise to these perceptions are varied and depend on abstainers' reference group.

The fact that the results demonstrate a considerable number of differences among the three groups highlights the importance of studying temporary and persistent offending groups separately from one another. Because most abstention studies combine all offending individuals into one collective group, past research has often missed out on these key differences, perhaps adding to the confusion regarding whether or not abstainers are “atypical” and socially isolated. Clearly, addressing whether abstainers are “loners” and whether or not they are different from other adolescents depends upon with whom they are compared. Contrasted with adolescents who engage in delinquency pervasively throughout adolescence, abstaining youths tend to perform comparatively well on developmental outcomes. However, compared to *most* youths as characterized by the adolescent-limited offending group, abstainers possess some qualities that might be interpreted as concerning.

Consistent with some other studies (e.g. Chen and Adams 2010), a number of the findings presented here seem contradictory to one another, as non-offending youths seem to possess a mixed-bag of prosocial and antisocial characteristics. It is counterintuitive to conceptualize non-offending adolescents who attend church services frequently, who have close relationships with their mothers, and who experience less exposure to delinquent peers as the same youths who also possess symptoms of psycho-emotional instability, who face

some level of peer rejection, and who perform worse academically than the majority of adolescents. Moreover, it is curious that while strong mother-child relationships predict abstention, greater exposure to autonomy-supportive parenting strategies, communicative closure, and quality time with parents predict an increased likelihood of temporary offending. Traditionally, strong bonds within the family, in the community, and in local religious institutions have been considered to be simultaneous insulators for children's social, behavioral, and academic development (Carbonaro 1998; Crosnoe 2004; Dornbusch et al. 2001; Grolnick et al. 2000; Schroeder, Giordana, and Cernkovich 2010; Steinberg, Elmen, and Mounts 1989). As previously discussed, it is possible that contradictory results reflect the unique variation that exists across abstaining adolescents. Studying abstainer subtypes will help to address these issues, potentially revealing both prosocial *and* antisocial modes of abstention. Furthermore, within-group analysis of abstainers will elaborate on the extent to which low biological capabilities, high social capabilities, exposure to structural barriers, and atypical personal traits and experiences with peer rejection overlap.

CHAPTER 6

EXAMINING ABSTAINER SUBGROUPS

6.1 Results from Latent Class Analysis

From the previous analyses, I have demonstrated heterogeneity within the abstainer group. Latent class analysis is presented to facilitate the study of abstainer subtypes, to evaluate how many subgroups there are and along what variables the groups are differentiated. As previously discussed, I anticipate that within-group analysis will reveal two subtypes of abstainers. The first iteration (see figure 3) theorizes that the first subgroup abstains because they perceive a smaller-than-normal maturity gap as a function of low biological capabilities or high social capabilities, whereas the second subgroup abstains because of atypical personal traits, peer rejection, and familial-based structural barriers. The second iteration (see figure 4) describes one subgroup that abstains via high social capabilities and a smaller-than-normal maturity gap, and a second group who does so because of atypical personal traits (including later pubertal development), peer rejection, and family-based structural barriers. Based on comparative levels of social and psychological adjustment between the two classes, conclusions will be drawn regarding the extent to which each class represents prosocial and antisocial modes of abstention.

A common starting point for identifying an optimal latent class model is to fit a sequence of models specifying a different number of classes. Following this, competing models are compared in regards to model fit (i.e. using AIC, BIC, likelihood ratio G^2) and interpretability. For model fit, simple models may rely on G^2 ; however, AIC and BIC

estimates are better suited for complex models with a high number of indicators with multiple values (Lanza et al. 2007). To evaluate model interpretability, superior models are considered to be those in which classes can be easily distinguished from one another based on item-response probabilities, when classes can be assigned with a meaningful name or label based on patterns in item-response probabilities, and when there are no classes of trivial size (i.e., near-zero probability of membership) (Lanza et al. 2007).

Table 12 displays fit statistics for models predicting 2, 3, and 4 latent classes among abstaining youths, using all indicators from Moffitt's three abstention propositions (n=1,221). As shown, the model specifying two latent classes has lower BIC and AIC values than models specifying three and four classes. Additionally, probability memberships in the two-class model are adequately sized (56% and 44% respectively), the classes are easily distinguishable from one another, and the two classes can be assigned a meaningful. Alternatively, in addition to having worse model fit estimates, latent classes in models specifying three and four classes are more difficult to differentiate, and distinct group labels are more difficult to apply. Hence, I proceed with an examination of abstainer subtypes using the two-class model. Based on the characteristics of each group (to be discussed), I label the first latent class "prosocial abstainers," and the second class "antisocial abstainers."

To aid in the interpretation of the latent classes, I begin by predicting the odds of membership in the prosocial abstaining class relative to the antisocial abstaining class using covariates for race, gender, family structure, maternal educational attainment, and maternal welfare receipt. Although Moffitt's theory does not clearly address the importance of these

variables for predicting various forms of abstention, I anticipate that the two groups will vary on a number of social and demographic characteristics. For one, access to autonomy-enhancing features of the environment or to other types of social supports may be unequally distributed across characteristics of gender, race, and socio-economic status. For instance, research suggests that parenting strategies differ across race and socioeconomic status, and that autonomy-supportive parenting strategies are more likely to be exercised in white and middle-class households than in African-American or working / lower class households (Lareau 2011; Roche, Ensminger, and Cherlin 2007). Likewise, persons in disadvantaged structural positions may be more susceptible to pejorative labels than those from more advantaged backgrounds (Farrell and Swigert 1978, 1988; Simmons 1965). Thus, being different in adolescence may have more negative implications for youths' abilities to fit in with their peers when it is compounded with other forms of vulnerability. Therefore, I expect that adolescents from advantaged backgrounds (i.e., from intact and higher SES households) will have a higher likelihood of belonging to the prosocial subgroup rather than to the antisocial subgroup. I assess the effects of these variables by entering each covariate into the model separately from one another. This strategy was necessary because covariates operate similarly to indicators in that they are used to inform the creation of latent classes. Accordingly, entering all covariates in the same latent class model can change the relative size of each latent class and alter item response probabilities. Consistent with many of my expectations, results from table 13 suggest that adolescents who are white, female, and from

intact households characterized by higher levels of maternal educational attainment and lower levels of welfare receipt are more likely be prosocial than antisocial abstainers.

Table 14 shows item probabilities for prosocial and antisocial abstainer latent classes, as well as for adolescent-limited and persistent-offending adolescents. I begin with a discussion of prosocial abstainers (56% of all abstainers), identifying indicators that locate a sizeable proportion of the class (i.e., more than half) within one particular value and that help to clearly characterize the group. Following this, I elaborate on the nature of the group by comparing item probabilities on each indicator to those of antisocial abstainers and to those of adolescent-limited and life-course persistent offenders. I follow a similar strategy to analyze antisocial abstainers.

6.1.1 Latent Class 1: Prosocial Abstainers

Fifty-six percent of abstainers, or approximately 684 youths, are assigned to the first latent class. Observing item probabilities for this class irrespective of the other subgroups indicates that adolescents in this group are disproportionately likely to score on the highest values for communicative closure, mother-child closeness, exposure to autonomy-supportive parenting (all three measures), church attendance, household labor, delinquent peer non-exposure, and prosocial friendships. For instance, 69% of youths assigned to this class score in the top tertiary for mother-child closeness, 64% rank in the highest category for prosocial friendships, and 83% score high on delinquent peer non-exposure. Alternatively, 69% perceive a narrow maturity gap and the majority do not wish they had more friends.

Comparing their item probabilities to those of adolescents assigned to latent class 2 and to adolescent-limited and life-course persistent offenders is even more telling. Specifically, compared to other subgroups of adolescents, a larger percentage of class members score on the highest values for communicative closure, parental rule-setting, mother-child closeness, mother explains important decisions, mother listens to the child's side of the argument, quality time with parents, church attendance, community service involvement, neighborhood safety, school effectiveness, household labor, delinquent peer non-exposure, school performance, academic involvement, paid work, and prosocial friendships. Conversely, they perceive the maturity gap less intensely than any other group, and they are the least likely to score on the highest values for psycho-emotional instability, difficulty making friends, and desires for more friendships. Moreover, these adolescents fare comparatively well on their total number of friendships. Thirty-one percent of adolescents in this class experience late pubertal development, the highest proportion of any group. Although group members rank higher on risk-avoidance than non-abstainers, this class contains 3% fewer respondents scoring on the highest value than the other abstaining class. Class members are also the least likely group to be overweight or to possess a disability.

Overall, adolescents classified in the first abstainer latent class appear to be exceedingly prosocial. Given that they fare well on all three peer measures and exhibit relatively low symptoms of psycho-emotional instability, they hardly fit the image of troubled social isolates. In fact, there is very little evidence to suggest that adolescents in this class are in anyway "abnormal," other than being comparatively more risk-avoidant than

non-abstaining adolescents. However, being highly cautious does not seem to cause significant problems for these adolescents when it comes to making friends, possibly because this characteristic is not always interpreted unfavorably by other adolescents or because natural processes of social homophily select shy children into the same peer networks as one another (Haselager et al. 1998). Conversely, their tendency to perceive a narrow maturity gap combined with a greater propensity for late pubertal development and higher levels of exposure to autonomy-enhancing features of the environment (i.e., high academic performance, paid work, autonomy-supportive parenting strategies) supports the notion that abstention may occur when adolescents possess low biological capabilities or high social capabilities.

Likewise, adolescents in this class experience a significant number of structural barriers that help to eliminate everyday opportunities for modeling delinquent behavior. Many of these barriers are family-based, as they report strong levels of closeness, communication, and quality time with their parents, and because they are more subject to parental restrictions on their whereabouts than other adolescents. Hence, these adolescents are in their parents' orbit consistently and intensely, which undoubtedly helps to explain why they report low levels of exposure to delinquent peers. Additionally, they spend considerable amounts of time at church, in community service activities, with prosocial friends, and performing household labor and school work. Consistent with Hirschi's (1969) involvement supposition, it may be that adolescents who are highly immersed in conventional activities have little time or opportunity to engage with teenagers involved in

illicit behavior. Because they are also more likely to live in the safest neighborhoods and to attend the most effective schools, it is also evident that these adolescents reside in contexts in which criminal opportunities are scarcer.

As previously noted, it is possible that in addition to producing structural barriers to delinquency, affective attachments between abstainers and their parents or with conventional individuals outside of the family help to generate psychological barriers to delinquent behavior. Hirschi (1969) argues that when children are strongly attached to their parents, they will consider their parents' feelings and opinions when criminal opportunities are available, and they will avoid these opportunities to preserve these affective bonds. The importance of parent-child relationships for guiding children's behaviors is also central to the social capital framework and the concept of "bonding" social capital (Coleman 1988; 1990; Putnam 2000), which argues that parents who are highly and consistently involved in their children's development encourage their children to behave in ways that are consistent with the best interests of the family (Dufur, Parcel, and McKune 2008; Kim and Schneider 2005). As in social control theory, children who internalize their parents' psychological presence evaluate the attractiveness of criminal opportunities within the context of their family's values and norms and will avoid such behaviors as they do not wish to jeopardize their sense of belonging or undermine the stability of the family (Furstenberg 2005). Sampson and Laub (1993) offer a likeminded argument in age-graded theory, suggesting that social capital between individuals produces a sense of obligation and mutual reciprocity and is an important source of informal social control against criminal behavior. Individuals who are

highly committed and attached to conventional institutions and relationships are also likely to internalize conventional moral standards and values that stifle the allure of criminal opportunities (Coleman 1988; Csikszentmihalyi, Rathunde, and Whalen 1993; Hardy et al. 2010; Hirschi 1969; Youniss and Yates 1997; Wuthnow 1991). Hence, although Moffitt does not allow for the possibility that some adolescents abstain because delinquency contradicts their affective or moral investments, classical sociological and criminological wisdom indicates that this may be the case.

6.1.2 Latent Class 2: Antisocial Abstainers

The second abstainer latent class includes the remaining 44% of all abstaining adolescents. Among the indicators that most clearly characterize this class are low community service involvement, psycho-emotional instability, and desires for more friendships. For example, 59% of adolescents score on the lowest value for community service involvement, 52% score on the highest value for psycho-emotional instability, and 69% strongly desire more friendships. Comparing item probabilities with those of prosocial abstainers and non-abstaining youths helps to elaborate further. Abstainers from the second latent class are least likely to be involved with community service activities and to spend quality time with their parents than any other group. A higher proportion scores in the upper echelon for psycho-emotional instability, difficulty making friends, and desires for more friendships, and on the low-end for total number of friendships than any subset of adolescents. They are relatively more risk-avoidant, and fifteen percent of the class has some

type of disability, which is notably higher than any other group. Although they have closer relationships with their mothers than non-abstaining youths (though not as high as prosocial abstainers), they report relatively low levels of communicative closure and exposure to autonomy-supportive parenting strategies. They also rank towards the bottom when it comes to church attendance, neighborhood safety, school effectiveness, academic involvement, school performance, paid work, and prosocial friendships. While they are less likely to perceive the maturity gap than non-abstainers, they perceive it significantly more so than prosocial abstainers. Similar to prosocial abstainers, they experience relatively high levels of delinquent peer non-exposure.

Why do they abstain? Members of this group are not especially likely to abstain as a function of low biological capabilities, as they are unlikely to undergo late pubertal development, and because they are more sensitive to the maturity gap than prosocial abstainers. Likewise, they are not especially likely to have high social capabilities, as they rank low on autonomy-supportive parenting strategies, community service involvement, school performance, and paid work. However, there is evidence that abstainers from latent class 2 are more socially introverted and in various ways more atypical than both prosocial abstainers and non-abstainers. Most notably, they are the most risk-avoidant and psycho-emotionally unstable of all adolescent subtypes; similarly, they are more likely to possess a disability and to sense rejection from their peers. Because they score comparatively higher on perceptions of the maturity gap than prosocial abstainers, it appears that these adolescents

may be motivated to mimic rebellious behaviors, but are blocked from doing so, presumably as a function of their personal characteristics.

Additionally, although they are not likely to experience structural barriers in the neighborhood, church, community, or school, there is also some evidence that these youths abstain as a function of their exposure to specific types of familial structural barriers. For instance, while they do not report their relationships with their mothers to be as strong as those of prosocial abstainers, their relationships are considerably stronger than those of non-abstainers. Perhaps it is the case that marginalized adolescents draw closer to their mothers because such relationships can provide a refuge from straining experiences at school or in the neighborhood with children of their same age. Likewise, it is also possible that specific types of adverse personal traits (i.e., risk-avoidance, psycho-emotional instability) are a direct consequence of youths' exposure to overprotective or overly-involved mothering. Indeed, it is notable that abstainers from this class are among the least likely to report high exposure to autonomy-supportive parenting. Thus, although they report strong affective bonds, these relationships do not appear to be overwhelmingly positive in all respects. These findings are not entirely compatible with Shedler and Block's (1990) description of abstainers' home lives as cold and emotionally unresponsive, though they might indicate that some abstaining youths are raised in contexts in which they have little room to grow and to express their independence.

In sum, the majority of abstaining adolescents engage in stable non-offending through a combination of smaller-than-normal maturity gaps and exposure to structural or

psychological barriers that reduce access to delinquency learning opportunities. This mode of abstention mirrors the findings of several studies that portray abstention as a prosocial adaptation during adolescence (Brezina and Piquero 2007; Epler, Sher, and Piasecki 2009; Milich et al. 2000; Piquero, Brezina, and Turner 2005; Tucker et al. 2006; White, Bates, and Buyske 2001; Wolff and Wolff 2002), and reflects the high level of compatibility between Moffitt's first two abstention conditions. As speculated, youths who experience low biological capabilities or high social capabilities tend to also experience a considerable number of structural barriers rooted in the family, the school, the neighborhood, and elsewhere. There is little evidence to suggest that their abstinence is a function of being atypical and shut out from immediate peer groups. However, a smaller subset of non-offending teenagers is relatively more antisocial, abstaining through a combination of atypical personal traits, peer rejection, and familial-based structural barriers. Their comparatively low levels of social involvement and high levels of psycho-emotional maladjustment are consistent with the "loner" image presented by Moffitt's atypical personal traits proposition. Thus, while past studies have disagreed regarding whether abstainers are best characterized as prosocial or antisocial, these findings suggest that both characterizations are at least partially accurate. Consequently, for future studies that elaborate on risk factors for different modes of offending throughout adolescence, it may be misleading to treat all abstainers as one homogenous group.

6.2 Sensitivity Analyses

The present study used latent trajectory analysis to create offending groups. Therefore, some youths were considered to be abstainers that had reported one or more delinquent behaviors throughout adolescence. One criticism of this approach is that it does not adequately capture abstainers, but rather only identifies low-offending youths. Thus, I performed a series of sensitivity checks on the data. Specifically, I recreated offending groups without the help of latent trajectory analysis. Using the same delinquency items from ages 10 to 18, I coded respondents with an overall delinquency score of zero as *abstainers* (n=250 or about 5% of the sample). Consistent with Moffitt's (1993) estimates, I coded respondents who scored at or above one standard deviation above the sample mean on the delinquency index on at least three out of five waves (ages 10, 12, 14, 16, and 18) as *life-course persistent offenders* (n=501 or about 10% of the sample). Finally, I coded the remaining respondents as *adolescent-limited offenders* (n=4,252 or 85% of the sample).

Using these categories, I reran tests for each abstention process using multinomial logistic regression, predicting the odds of membership in life-course persistent or adolescent-limited offending groups compared to the odds of membership in the abstainer taxonomy. For each condition, I first assessed the zero-order effects of key independent variables on the odds of membership in life-course persistent or adolescent-limited offending groups. I then assessed associations between key independent variables and offending taxonomies in the presence of controls. Following this, I evaluated associations between key independent variables and mediating variables, and associations between mediating variables and

offending taxonomies with and without controls (Baron and Kenny 1986). Indirect pathways were tested for statistical significance using t-statistics that are based on beta coefficients and variances for pathways *a* and *b* (see Sobel 1982; Mackinnon et al. 2002):

$$\frac{\beta_a \beta_b}{\sqrt{\beta_a^2 \sigma_{\beta b}^2 + \beta_b^2 \sigma_{\beta a}^2 - \sigma_{\beta a}^2 \sigma_{\beta b}^2}}$$

β_a = beta coefficient for pathway *a*, the relationship between the independent variable and the mediating variable

β_b = beta coefficient for pathway *b*, the relationship between the mediating variable and the dependent variable

σ^2 = variance

Results are very similar to those that defined offending categories using latent trajectory analysis. Late-developing youths are more likely to abstain than to engage in limited-offending, and the relationship is partially explained by a narrower perception of the maturity gap. Adolescents who work for pay for longer durations have a higher likelihood of abstaining than offending temporarily, although the association is not explained by their perceptions of the maturity gap. Autonomy-supportive parenting strategies, community service involvement, or academic performance do relatively little to differentiate the groups. Likewise, adolescents who attend church more often and who have closer relationships with their mothers are more likely to abstain, and delinquent peer non-exposure partially mediates these associations. For the proposition related to atypical personal traits, adolescents with a disability or who score very high on risk-avoidance have a greater likelihood of belonging to the abstaining group rather than to either of the offending groups. Peer acceptance / rejection

measures explain some of the effect of disability, but do not help to explain the effect of risk-avoidance.

Among the 250 “true” abstainers, latent class analysis identifies a 3 class model as the best fit model (2 Class AIC 655; 3 Class AIC=465; 4 Class AIC 701). Adolescents classified in the first class (55%) tend to live in safe neighborhoods and to attend highly effective schools. They have close relationships with their mothers, and they report high levels of communicative closure with their parents. They rank considerably well on psycho-emotional adjustment measures, they attend church often, score disproportionately high on prosocial friendships, and they tend to be very engaged in academics. The second class (25%) might represent what Delbert Elliot and colleagues (2006) describe as “good kids from bad neighborhoods.” Adolescents classified here share many of the same characteristics as the first class in that they are involved in prosocial activities (i.e. paid work, academics) and they are relatively well-adjusted based on psycho-emotional indicators. However, they are comparatively more likely than other abstainers to live in highly disordered neighborhoods and to attend ineffective schools. As previously mentioned, it may be the case that some parents who raise children in high-risk neighborhoods go to great lengths to protect their children from deviant influences that are abundant in the local environment by ensuring their children’s investment in the church, in academics, or in other prosocial activities. Alternatively, given the evidence that adolescents from lower-income households are often under greater pressures to contribute financially to their families or to play an active role in childcare for younger siblings (Lamorey 1999), good kids from bad neighborhoods may

simply be occupied when the majority of delinquency occurs. Finally, adolescents classified in class 3 (20%) might best be described as “loners.” These adolescents are comparatively more likely to possess a disability, to report higher values on peer rejection measures, and to exhibit signs of psycho-emotional maladjustment.

Overall, findings from my examination of within-group abstainer heterogeneity do not appear to be an artifact of the taxonomy measurement procedures as denoted by latent trajectory analysis. Although a more conservative examination of latent classes using only “true” abstainers does recognize a third subtype of abstention, this group is only marginally different from the largest subtype, prosocial abstainers. Similar to youths who abstain primarily through high social capabilities and structural barriers, these adolescents are generally conventional and do not signal that atypical personal traits force them into a non-offending trajectory.

CHAPTER 7

CONCLUSIONS

7.1 Discussion

The present study had two main objectives. The first objective was to delineate the ways in which abstaining youths differ from non-abstaining adolescents, relying on Terrie Moffitt's (1993; with Walsh 2012) abstention thesis as a guide. The second objective was to understand important sources of variation among abstaining adolescents. These tasks were undertaken to better address the precipitants of delinquency abstention during adolescence, to assess the empirical validity of Moffitt's claims regarding stable non-offending, and to better understand the extent to which abstainers are "abnormal," socially introverted, and deserving of scholarly and public concern. The results are informative and make a valuable contribution to the knowledge base regarding abstention during adolescence.

As predicted, abstaining teenagers perceive the maturity gap less intensely than their offending counterparts, in part because of their greater tendency to experience late pubertal development. Consistent with Moffitt's discussion of structural barriers, abstaining youths have particularly strong relationships with their mothers and attend church more frequently than non-abstaining adolescents, which helps to explain why they also report less exposure to delinquent peers. Additionally, abstainers are more likely than other adolescents to possess a number of select types of atypical personal traits. However, fully understanding the extent to which abstainers are psychologically, socially, or in other ways atypical depends upon with whom they are compared. Similar to Shedler and Block's (1990) study of illicit drug

abstainers, abstaining youths rank somewhere in the middle on measures of social and psycho-emotional adjustment, tending to fare better than persistent offenders, but worse than the majority of adolescents who engage in offending moderately.

Recognizing the possibility that studying abstainers collectively masks variation across non-offending youths, explicit within-group analysis was conducted and confirms that abstainers are not all the same. While the majority of abstaining adolescents avoid delinquency primarily because of high social capabilities and prosocial structural barriers to delinquency learning opportunities, a smaller (but still substantial) number of adolescents abstain as a function of atypical personal traits and peer rejection. The latter group exhibits a number of characteristics that are consistent with the image of abstainers as troubled, isolated, and emotionally fragile youth. The detection of antisocial abstainers is concerning, given the logical link with recent research that has identified a subset of individuals who engage in a delayed criminal career that begins in adulthood (Gomez-Smith and Piquero 2005; Pulkkinen, Lyyra, and Kokko 2009). Indeed, risk factors in adolescence, such as psycho-emotional instability or experiences with peer rejection may not always have an immediate impact; rather, they may have “sleeper” or “ripple” effects that manifest later in life and that intensify mental health problems, life failure, and desires to offend (Loeber 1990; Ollendick, Seligman, and Butcher 1999; Zara and Farrington 2010).

While antisocial abstaining youths possess a number of risk factors (i.e., psycho-emotional instability) that should logically predispose them to delinquent behavior, they may be insulated by protective factors that limit their ability to participate in misbehavior. The

present analysis revealed that antisocial abstainers have comparatively strong relationships with their mothers, which may “cocoon” them from criminal opportunities throughout adolescence (Thornberry and Krohn 2005). However, it is possible that the protectiveness of close mother-child relationships wears off or even transforms into a risk factor in adulthood (i.e., “switch effects”) (Zara 2010). For example, because of their overexposure to protective influences in adolescents, youths who are unable to sow wild oats during their teenage years may be especially sensitive to deviant peers in college or in the workplace and experience an amplified desire to break the rules (Kendler, Thornton, and Gardner 2001).

Because the present analysis does not track offending behaviors into adulthood, the link between antisocial abstention and adult-onset offending is limited to speculation. However, it is noteworthy that many of the characteristics associated with antisocial abstainers in the present study are consistent with risk factors identified by studies of late-onset offending, including their tendency to be male, to be raised in more socioeconomically disadvantaged households, to perform poorly on academic and achievement measures, and to exhibit symptoms of psycho-emotional instability (Gomez-Smith and Piquero 2005; Pulkinnen, Lyrra, and Kokko 2009). Additionally, even if they do not eventually graduate into delayed criminal careers, antisocial abstention remains concerning given the link between psychological or emotional problems in adolescence and mental health problems later in life (Pine et al. 1998).

Based on the findings presented in this study, several recommendations for revision can be made for Moffitt’s abstention thesis. First, results clearly demonstrate the necessity of

separating adolescent-limited and persistent offending types in studies of abstainers. Combining all non-abstaining individuals into one category masks key group differences in developmental traits; accordingly, the theory should specify that a number of conditions differentiate abstainers from adolescent-limited offenders or from persistent-offenders, but not necessarily from both groups. Second, there are a range of environmental characteristics that can limit youths' access to delinquent peers and promote the likelihood of abstention that transcend what Moffitt explicates in her discussion of structural barriers. While Moffitt's argument is limited to the ways that geographic or school characteristics can have an impact on delinquency learning opportunities, the present study suggests that various types of prosocial time-use and affective attachments can have similar insulating effects. Likewise, because these characteristics have positive effects on the likelihood of abstention independent of youths' opportunities to learn and model delinquent behavior from their peers, it is plausible that there are other important mechanisms at work. I have speculated that prosocial relationships may produce psychological or moral barriers to delinquent behavior that work against youths' perceptions of the maturity gap. While some teenagers may feel strained by the disjuncture between their social and biological capabilities, they may be psychologically opposed to offending as an outlet for resolving their frustrations.

The findings also suggest that a wider range of personal characteristics may encourage abstention than has been previously recognized. For instance, adolescents with some type of physical, cognitive, or communicative disability or who are exceptionally tall were found to have a higher likelihood of abstaining. However, atypical traits do not always

promote abstaining behaviors as a function of peer rejection. For instance, teenagers with highly risk-avoidant personalities are more likely to abstain throughout adolescence, but not necessarily because they are shut out from peer groups where delinquency takes place. Thus, Moffitt's theory should take into account the fact that some traits can have a direct effect on non-offending when they are highly incompatible with characteristics required for offending (i.e., risk-taking, impulsivity, etc.).

Within-group analysis has indicated that there is a great deal of variation on developmental characteristics among teenagers who abstain, and that abstainers are best studied in subtypes rather than as a collective. While the majority is extraordinarily prosocial, a smaller subset possesses characteristics that are compatible with the image of abstainers as fragile and reclusive youths. Moreover, this analysis has elucidated the degree of overlap between two or more of Moffitt's abstention conditions. Results have suggested that autonomy-enhancing features of the environment can promote abstention both by narrowing adolescents' perceptions of the maturity gap and by increasing the number of structural barriers that reduce their access to delinquent peers. Alternatively, youths who are perceived to be abnormal and who are shut out of normative peer networks are simultaneously exposed to family-based structural barriers that further reduce their ability to connect with deviant individuals at school or in the neighborhood. Therefore, Moffitt's theory should be revised to indicate that the three conditions have a tendency to overlap in specific ways rather than discussing each condition as a discrete component of abstention.

7.2 Policy Implications

The findings presented in this manuscript have important implications for parents, schools, and the larger community. Although conventional wisdom has suggested that children who exhibit behavioral problems are most deserving of special attention, this study indicates that parents and school officials should also provide social supports or mental health resources to non-delinquent children. Considering the evidence available suggesting that psychological, social, or emotional difficulties in childhood or adolescence can translate into problems related to depression, substance use, or criminal behavior in adulthood (Ollendick, Seligman, and Butcher 1999; Pine et al. 1998), it is important that adults do not equate non-offending with psychological adjustment. Although abstention should also not be invariably paralleled with social or psychological maladjustment, it is evident that in some cases, it can be a red flag for deeper and more troubling issues.

The finding that a subset of abstainers have a greater likelihood of possessing a disability, being psychologically vulnerable, and experiencing peer disintegration resonates with the public concern regarding children who slip between the cracks and whose dormant behavioral problems can become suddenly and tragically realized. Less than two years ago, twenty-year-old Adam Lanza engaged in the deadliest mass shooting at a grade school in U.S. history, murdering twenty children and six school officials at Sandy Hook Elementary School in a matter of minutes (Lysiak 2013). Lanza was described by classmates and teachers as a loner, uncomfortable socializing with other students, and highly intelligent but nervous and agitated (Halbfinger 2012). He had been diagnosed with a sensory-integration

disorder in elementary school, and later with a high-functioning mode of autism and obsessive compulsive disorder (Lysiak 2013). While this is an extreme case, it nods to the importance of early intervention efforts for emotionally, psychologically, and socially unstable children.

However, informing specific policy interventions to help antisocial youths is not entirely straightforward. At first glance, invoking programs at the school level that help isolated teenagers integrate among their peers seems like a promising strategy. Bridging the gap with other youths at school or in the community could undoubtedly help to alleviate feelings of exclusion, which may have beneficial effects in the long run. One recent example of such efforts relates to the concept of “least restrictive environment” (LRE), which has been applied in schools to facilitate positive outcomes among children with disabilities. The premise behind LRE-guided initiatives is that children with unique needs are shortchanged when they are placed into “special” classrooms apart from other youths, and that a more effective strategy is one that provides a customized educational curriculum to children in need alongside the rest of their peers. Program advocates acknowledge that integrating children into regular classrooms can not only facilitate positive academic outcomes, but it can also improve their social skills and abilities to fit in amongst other children their same age (Center for Parent Information and Resources 2014).

One concern with any approach that helps isolated youths to become more integrated among their peers is that they will ultimately become more delinquent, which would of course be a counterproductive solution. However, it is possible that schools and

communities could do more to recognize fragile and isolated youths and help to boost their confidence, sense of self-worth, and perceptions of self-efficacy in order to countervail against these potentially harmful forces. For example, the University of Washington's DO-IT (Disabilities, Opportunities, Internetworking Technology) program recognizes that adolescents with disabilities or other special needs have an especially difficult set of circumstances when it comes to fitting in at school, and that feeling different can also promote feelings of social isolation and negative psychological and behavioral outcomes concurrently and later in life (Johnston 2000). The program's objective is to connect adolescents with disabilities both virtually and in person to other adolescents, and to foster their skills and confidence levels in the areas of science, engineering, and mathematics. In turn, program directors hope to not only integrate vulnerable youths with other teenagers in similar or dissimilar circumstances, but also provide them access to importance sources of self-worth that may help to buffer destructive behaviors.

The present findings also point to the need for greater mental health resources for young adults. As abstaining youths transition into adulthood and establish residences outside of their parents' cocoon, some may find themselves ill-equipped to cope with psychological or emotional strains that contributed to their seclusion from their peers during adolescence. While protective home environments may have shielded some abstaining youths' from misconduct in adolescence, greater distance between youths and their parents may take a particularly harsh toll on their ability to handle the stressors of early adulthood. Hence, mental health resources on college campuses are highly necessary. It is reassuring that

Congress has recently passed the Garrett Lee Smith Memorial Act (GLSMA, 2004; GLSMA Reauthorization of 2011) in response to public concerns for a growing mental health crisis on U.S. college campuses. However, the existing programs have had only limited success. A major problem for this initiative has been that college counseling centers are highly understaffed in the face of growing caseloads. In the 2010 National Survey of Counseling Center Directors, respondents reported that almost half of their clients exhibited symptoms of serious psychological problems, a significant increase as compared to reports from the survey administered just a decade before. Consequently, more than 75% of counseling directors indicated that they had to reduce access for non-crisis patients to accommodate the needs of high-risk clients (Eiser 2011). Thus, while it is promising that there appears to be a growing public and political consensus regarding the necessity of mental health services for young adults, program objectives have yet to be realized. Although the majority of abstaining youths may retain their resiliency as they transition into young adulthood, inadequate mental health resources may be especially problematic for young persons with a history of psychological and emotional problems who are living on their own for the first time in their lives.

Finally, considering that the present study replicates what has been established in past research—that most adolescents do indeed participate in delinquent behavior, there are also important implications for the juvenile justice system. Because it is statistically normal and in some ways reflective of healthy adjustment when adolescents do engage in delinquent behavior, perhaps the criminal justice system should practice leniency when it comes to

typical juvenile offenses. After all, most adolescents will presumably transition out of their delinquent tendencies as they enter conventional adult roles denoted by marriage, paid work, and parenthood, but an official criminal label applied by the justice system can disrupt successful transitions and instead help to encourage persistent offending (Chiricos et al. 2007). Hence, officially branding youths caught for their transgressions may be a dysfunctional strategy. Although juvenile records can be expunged or sealed in most U.S. jurisdictions, the conditions that must be met in order for this to occur vary by state to state, and there is considerable variation regarding the extent to which such records are held confidential or released publicly (Joint Legislative Task Force on Juvenile Record Sealing 2012).

7.3 Limitations

As with any research, the present study has limitations. One such limitation relates to the process by which offending taxonomies were defined. Any examination of abstention must make decisions regarding the range of delinquent behaviors that should be considered for classifying individuals into offending categories. The present analysis delineated offending types based on four delinquent behaviors related to violence, vandalism, theft, and illicit drug use. Although delinquent opportunities during adolescence transcend the scope of behaviors represented here, these are the key types of delinquency assessed by the NLSY consistently over the years. Any analysis that includes different measures of delinquent

behavior or that includes a wider range of offending behaviors may produce more liberal or conservative estimates of abstention than are provided here.

An additional limitation relates to the issue of causal ordering. One of many objectives of this study was to measure offending taxonomies accurately and consistently with Moffitt's (1993) life-course persistent and adolescent-limited model of offending. Clearly, classifying individuals into one of her three offending taxonomies requires information regarding their misconduct over an extended amount of time. Therefore, I categorized respondents into offending groups using five waves of data, ranging from early to late adolescence. Because her discussion of abstention processes implies that many of the characteristics or conditions that cause abstention also occur during adolescence, it was not logical to measure predictors at a time point prior to the dependent variable. Hence, my analysis does not establish appropriate causal ordering between independent, mediating, and dependent variables and thus cannot make claims regarding causality. As a consequence, it is possible that abstaining from delinquency reduces the maturity gap, and not the other way around. Similarly, it may be that non-offenders select into prosocial activities, and that abstaining leads to stronger parent-child relationships rather than strong relationships leading to non-offending. Although this is an important limitation, the nature of the theory makes it difficult to avoid these problems entirely.

Based on insights from criminological research and theory, the present study may also suffer from omitted variable bias. The effects of strong mother child relationships, church attendance, employment, and other key independent variables could not be entirely

explained by characteristics or conditions specified in Moffitt's theory, which suggests that other important mechanisms may be at work. For instance, Gottfredson and Hirschi (1990) might suggest that adolescents who have strong relationships with their mothers abstain not because they are blocked from delinquency learning opportunities, but rather because these relationships have helped them to develop self-control that can be activated in situations in which criminal opportunities arise. According to their theory, parents produce self-control in children by consistently "monitoring the child's behavior, recognize{ing} deviant behavior when it occurs, and punish{ing} such behavior" (1990:97). Furthermore, parent-child bonds activate the parental management tactics, because without this component parents have little incentive to employ these strategies (1990:104). As discussed, it may also be the case that adolescents who are strongly attached to prosocial individuals and institutions avoid crime because they do not wish to jeopardize those relationships, because the time and effort they have invested outweighs the potential payoffs of illegitimate activity, or because these relationships have helped them to form strong moral beliefs that are incompatible with criminal behavior (Hirschi 1969). In contrast, labeling theory would suggest that adolescents' interpersonal relationships with parents, teachers, and peers determines how adolescents view themselves, and these reflected appraisals of self in turn influence the amounts of delinquency they engage in (e.g., see Matsueda 1992). Assessing the extent to which negative emotions such as anger, frustration, and sadness as specified in general strain theory (Agnew 1992) might also help to elaborate on associations between particular types of

atypical personal traits and delinquent behavior. Wherever possible, future research should incorporate these concepts into studies of abstention.

It may also be considered a drawback that the present study does not pay explicit attention to the potentially important role of gender. The relationships between atypical personal traits, peer rejection, and offending behaviors are likely to be gendered-processes. For one, because males and females often interpret and react to psychological strains differently from one another (De Coster and Zito 2010), it may be the case that perceptions of peer rejection have differential effects on delinquent behaviors for male and female adolescents. Additionally, female adolescents are often faced with greater pressure to conform to culturally-prescribed body types; hence, being overweight, experiencing off-time pubertal development, or possessing other physical marks of differences may have greater implications for female adolescents' mental health and social integration with peers than for males (Tiggemann and Rothblum 1988). Some characteristics may also be socially advantageous for males but disadvantageous for females (or vice versa). For instance, being exceptionally tall may reinforce males' presentation of masculinity, enhance their level of attractiveness to the opposite sex, and improve their chances of making school sports teams, all of which may work to boost their social status at school, whereas the same may not be true for female adolescents of remarkable stature (Cawley, Joyner, and Sobal 2006; Grogan 1999; Pope, Phillips, and Olivardia 2000).

The relationship between certain types of personality traits may also have unequal gendered effects on peer (dis)integration. Some research suggests that risk-avoidance is less

problematic for girls than for boys, given that teachers and parents are more likely to reward such characteristics when exhibited by girls (see Coplan and Armer 2007 for a review). Families and other social institutions socialize male children to take risks and to act autonomously, as these characteristics are deeply intertwined with cultural notions of masculinity and are coveted attributes in the paid-business sector of the U.S. economy (Hagan 1991; Hagan, Simpson, and Gillis 1987). In turn, these traits may work to enhance male adolescents' presentation of masculinity, and in consequence may increase their popularity with their peers who view them as fulfilling hegemonic standards for maleness (Martino 1997; Pascoe 2007). Thus, male adolescents who are more cautious may appear less masculine and less likeable to other adolescents (Adler, Kless, and Adler 1992). While some research has examined the role of gender when it comes to associations between atypical personal traits, peer rejection, and abstention (Piquero, Brezina, and Turner 2005; Vaughn et al. 2011), explicit attention to gender has not been given to the study of abstainer subtypes. Future research efforts should help to elaborate on these processes.

An additional limitation relates to several measurement issues. Because the present study is limited to measures available in a secondary dataset, some complex concepts could only be approximated. For instance, the maturity gap is an abstract concept that is difficult to measure with great precision. While past studies have relied only on timing of pubertal development or late virginity to proxy the maturity gap (Chen and Adams 2010; Owens and Slocum 2012; Piquero, Brezina, and Turner 2005), these strategies are not totally congruent with the causal process outlined by Moffitt. Specifically, the theory's emphasis is on

adolescents' *perceptions* of the maturity gap; thus, the maturity gap is criminogenic only when the adolescent is aware of it and internalizes psychological strain as a consequence. The present analysis captured adolescents' perceptions of the maturity gap with items that assess the extent to which they argue with parents about household rules. While this approach surely approaches the concept at hand, it is not ideal. Some adolescents may perceive the maturity gap, but reside in authoritarian households in which children are strongly discouraged from exhibiting any type of opposition to their parents' rules and demands. Hence, this measure has room for error. A more sophisticated approach might be to ask adolescents how often they feel like parents, teachers, and other adults disallow them from doing as much as they are physically capable of. Future research should strive to identify more direct measures of adolescents' perceptions of the maturity gap, potentially by taking advantages of primary data collection opportunities.

Similarly, capturing adolescents' experiences with peer rejection is challenging. Although the present study attempted to capture processes of peer dis(integration) with a range of objective and perceptive measures, data limitations made it impossible to measure this multifaceted concept more precisely. In psychological research, peer acceptance and rejection are sometimes measured using peer nomination procedures in which children report which of their classmates they believe to be their best friends, and which they do not wish to be friends with (Bukowski et al. 1996). Other scholars advocate measures that assess the quality of children's friendships, especially when the data is dyadic in nature and can be assessed for friendship reciprocity between two respondents (Bukowski, Hoza, and Boivin,

1994). Unfortunately, this type of network data is unavailable in the NLSY79. Future research studies on abstention should perhaps take advantage of available data sources that include nomination procedures or dyadic units of analysis.

Finally, it was not possible to assess the unique effects of different types of disabilities. For example, only 1.8% of the sample (about 80 youths) reported some type of physical handicap, whereas only 1.4% reported deafness, hearing problems, or a serious speech impediment. Accordingly, all youths with any type of disability (also including Down's syndrome, autism, or cognitive deficits) were combined into a single category. Thus, it is not clear whether all types of disabilities have equally insulating effects when it comes to delinquent behaviors, or equivalently harmful effects when it comes to peer integration. It could be the case that physical characteristics are more influential on processes of peer rejection because they are often times more visible and obvious to other adolescents, compared to cognitive disabilities that may be less easily detected in social settings. This limitation is also important given the potential for learning/cognitive impairments to both promote and dissuade delinquent behaviors. However, the present study relied on one of the largest and most representative datasets available; thus, these limitations may be difficult to circumvent. Where possible, research that investigates atypical personal characteristics should aim to provide more detailed information regarding the inimitable effects that different types of disabilities can have on abstention. It may also be worthwhile to investigate interactive effects between different types of atypical traits. It is possible that adolescents with multiple atypical attributes grow up in an especially toxic context.

7.4 Conclusion

Over a century ago, Emile Durkheim argued that crime is a normal and functional attribute of life, as it enables societies to define their moral boundaries and because punishment can strengthen social solidarity and reaffirm moral commitment among the population (see Calhoun et al. 2012). This theme was carried forth by a number of scholars in the 20th century who demonstrated the positive implications that deviant behavior can have for the functioning of various groups in society (Coser 1962; Dentler and Erikson 1959). Despite this, a number of prominent criminological theories do not explicitly acknowledge that a little bit of delinquency among individuals may in fact be quite normal and even socially desirable. Rather, crime-avoidance is often assumed to be normative and conforming, whereas criminal behavior is implicitly depicted as unvaryingly deviant and symptomatic of social or psychological disorder. The present study suggests that this is not always the case, as total abstention can sometimes be a reflection of personal problems and can represent an antisocial and deviant mode of behavior.

Accordingly, my study has helped to underscore the complexity that revolves around our understanding of deviant and conforming behavior during adolescence. While it has long been acknowledged that criminal behavior is a multifarious topic of interest, the notion that total abstention is similarly intricate has received less attention. I am hopeful that future research will continue to elaborate on abstention processes and the diversity of etiological factors that promote non-offending trajectories. As with many other areas of research, abstention studies are likely to be most effective when they work within sound theoretical

frameworks and draw from intellectual ideas across varying academic disciplines.

Researchers should attempt to replicate the findings presented here using other available data sources to further inform our understanding of prosocial and antisocial modes of abstention.

Likewise, future efforts should seek out ways to integrate our knowledge of abstainer heterogeneity with life-course criminology and further develop insights regarding differential consequences that varying modes of non-offending can have later in life.

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Table 1: Demographic Characteristics across Samples

	Full Sample (n=11,504)	Born between 1978-1992 (n=8,745)	Three or fewer missing values on each cumulative delinquency item (n=5,791)	Two or fewer missing values on each cumulative delinquency item (n=5,003)*	One or fewer missing values on each cumulative delinquency item (n=3,878)	No missing values on any cumulative delinquency item (n=2,314)
% Female	49	49	49	50	51	47
% Male	51	51	51	50	49	53
% White	53	54	45	46	46	49
% Black	29	27	33	31	31	30
% Hispanic / Other	19	19	22	23	23	21
Average Maternal Education	12.61	12.53	12.57	12.42	12.61	12.63

Note: * indicates the final sample

Table 2: Group Latent Trajectory Models (n=5,003)

		One Group				
Groups	Membership	Parameter	Estimate	SE	Prob> T	Model BIC
1	100%	Intercept	-13.97	.321	.000	- 40035
		Linear	1.81	.041	.000	
		Quadratic	-.05	.001	.000	
		Two Groups				
<i>Model I</i>						
1	25%	Intercept	-.09	.802	.902	- 34699
		Linear	-.16	.111	.151	
		Quadratic	.01	.004	.068	
2	75%	Intercept	-15.83	.400	.000	
		Linear	2.08	.050	.000	
		Quadratic	-.06	.002	.000	
<i>Model II</i>						
1	25%	Intercept	-1.41	.201	.000	- 36497
		Linear	.04	.013	.003	
2	75%	Intercept	-15.81	.400	.000	
		Linear	2.08	.030	.000	
		Quadratic	-.06	.002	.000	
		Three Groups				
<i>Model I</i>						
1	24%	Intercept	-1.45	.802	.070	- 35401
		Linear	.02	.113	.884	
		Quadratic	.00	.004	.766	
2	65%	Intercept	-24.05	.472	.000	
		Linear	3.11	.059	.000	
		Quadratic	-.10	.002	.000	
3	11%	Intercept	-2.59	.729	.000	
		Linear	.46	.097	.000	
		Quadratic	-.01	.003	.000	
<i>Model II</i>						
1	24%	Intercept	-1.68	.178	.000	- 35397
		Linear	.05	.011	.000	
2	65%	Intercept	-24.05	.472	.000	
		Linear	3.11	.059	.000	
		Quadratic	-.10	.002	.000	
3	11%	Intercept	-2.59	.729	.000	
		Linear	.46	.097	.000	
		Quadratic	-.01	.003	.000	

Table 2 continued...

		Four Groups				
<i>Model I</i>						
1	23%	Intercept	-2.11	.202	.000	- 35225
		Linear	.07	.013	.000	
2	65%	Intercept	-23.69	.448	.000	
		Linear	3.06	.056	.000	
		Quadratic	-.09	.002	.000	
3	7%	Intercept	1.82	.946	.055	
		Linear	-.13	.128	.296	
		Quadratic	.00	.004	.293	
4	5%	Intercept	-9.29	1.34	.000	
		Linear	1.35	.175	.000	
		Quadratic	-.04	.005	.000	
<i>Model II</i>						
1	23%	Intercept	-2.09	.200	.000	- 35222
		Linear	.07	.013	.000	
2	65%	Intercept	-23.74	.441	.000	
		Linear	3.06	.056	.000	
		Quadratic	-.09	.002	.000	
3	7%	Intercept	.95	.215	.000	
		Linear	-.01	.02	.626	
4	5%	Intercept	-9.44	1.32	.000	
		Linear	1.36	.172	.000	
		Quadratic	-.04	.005	.000	

Note: * p<.05, **p<.01, ***p<.001, Two-Tailed Tests. SE=standard error. BIC=Bayesian Information Criterion.

Table 3: Descriptive Statistics for Latent Trajectory Covariates (N=5,003)

VARIABLES	DESCRIPTION	MEAN	SD	RANGE
Delinquency Classes				
Abstainers	No (or virtually no) delinquency during adolescence	.24	.43	0-1
Adolescent-Limited Offenders	Escalate until age 16, decline thereafter	.64	.47	0-1
Life-Course Persistent Offenders	High level of delinquency throughout adolescence	.11	.31	0-1
Indicators for Delinquency Classes				
Age 10				
Violence	Number of times R hurt someone bad enough to require medical attention in the past year (never, once, twice, more than twice).	.25	.63	0-3
Vandalism	Number of times R damaged school property on purpose in the past year (never, once, twice, more than twice).	.07	.35	0-3
Theft	Number of times R stole something in the past year (never, once, twice, more than twice).	.11	.44	0-3

Table 3 continued...

Marijuana	Did R use marijuana in the past year? (no or yes)	.01	.08	0-1
Overall Delinquency at age 10	Sum score for violence, vandalism, theft, and marijuana at age 10	.43	1.05	0-10
Age 12				
Violence		.32	.70	.0-3
Vandalism		.12	.46	.0-3
Theft		.16	.54	.0-3
Marijuana		.01	.12	.0-1
Overall Delinquency at age 12	Sum score for violence, vandalism, theft, and marijuana at age 12	.62	1.29	.0-10
Age 14				
Violence		.74	.71	0-3
Vandalism		.67	.60	0-3
Theft		.73	.68	0-3
Marijuana		.11	.31	0-1
Overall Delinquency at age 14	Sum score for violence, vandalism, theft, and marijuana at age 14	2.24	1.69	0-10
Age 16				
Violence		.75	.68	0-3
Vandalism		.69	.54	0-3
Theft		.75	.64	0-3
Marijuana		.26	.44	0-1

Table 3 continued...

Overall Delinquency at age 16	Sum score for violence, vandalism, theft, and marijuana at age 16	2.45	1.68	0-10
Age 18				
Violence		.70	.68	0-3
Vandalism		.64	.54	0-3
Theft		.70	.64	0-3
Marijuana		.36	.48	0-1
Overall Delinquency at age 18	Sum score for violence, vandalism, theft, and marijuana at age 18	2.41	1.72	0-10
Control Variables				
<i>Race of Respondent</i>				
Nonwhite		.55	.50	0-1
White		.45	.50	0-1
<i>Sex of Respondent</i>				
Female		.50	.50	0-1
Male		.50	.50	0-1
Maternal Years of Education		13.00	2.45	0-20
<i>Family Structure</i>				
Mother Not-Married		.42	.49	0-1
Mother Married		.58	.49	0-1

Table 3 continued...

Maternal Welfare Receipt	Total amount of welfare receipt mother received when child was ages 10-18; cut into three groups representing low, medium, and high levels of receipt	1.77	.84	1-3
Process 1 Variables: A Smaller-than-Normal Maturity Gap				
<i>Pubertal Development</i>	Measures calculated using standardized height scores for males and timing of first menstruation for females			
On-Time Pubertal Development		.60	.49	0-1
Early Pubertal Development		.17	.37	0-1
Late Pubertal Development		.23	.42	0-1
Paid Work	Average number of waves the respondent worked for pay ages 10-18	.21	.19	0-1
Community Service Involvement	Average number of waves respondent volunteered in school, environmental, medical, political, or other types of community service groups at ages 16-18	.41	.41	0-1
School Performance	Average percentile score for reading, comprehension, and math testing at ages 10, 12, and 14	51.25	23.75	1-99

Table 3 continued...

<i>Autonomy-Supportive Parents</i>				
Mother Listens	Average score for how often mother listens to respondent's side of the argument at ages 10-18 (hardly ever, sometimes, often)	2.26	.62	1-3
Mother Explains Decisions	Average score for how often mother explains important decisions to respondent at ages 10-18 (hardly ever, sometimes, often)	2.33	.57	1-3
Parents Allow Autonomy	Sum score for seven yes/no items that ask whether the respondent is permitted to make his or her own decisions about clothes, money, friends, allowance, television, religion, television, and curfews at age 14	1.66	2.19	0-7
Perceptions of the Maturity Gap	Average score for how often respondent argues with parents about whereabouts, watching television, doing homework, and dating/going to parties at ages 14-18 (hardly ever, sometimes, often)	1.72	.41	1-3

Table 3 continued...

Process 2 Variables: Structural Barriers to Delinquency Learning Opportunities

Neighborhood Safety	Average score for seven items related to what extent respondent's neighborhood is characterized by a lack of jobs, low collective efficacy, lack of supervision over teens, crime, people who do not show respect for one another, abandoned buildings, and lack of police at ages 16-18 (big problem, somewhat of a problem, not a problem)	2.58	.45	1-3
School Effectiveness	Average score for item related to the extent to which respondent agrees that it is difficult to get away with disobedient behavior at school at ages 10-18 (not true at all, not too true, somewhat true, very true)	3.12	.63	1-4
<i>Familial Barriers</i>				
Mother-Child Closeness	Average score for how close respondent is to his or her mother at ages 10-18 (not close at all, not too close, somewhat close, very close)	3.15	.80	1-4

Table 3 continued...

Quality Time with Parents	Sum score for seven items that indicate whether the respondent went to the movies, to dinner, shopping, on an outing, to church, worked on school work, or played a game with his or her parents in the past thirty days	3.71	1.71	0-7
Parental Rule-Setting	Average score for how often respondent's parents limit time with his or friends on school nights at ages 16-18 (rarely, sometimes, often)	1.99	.75	0-3
Communicative Closure	Index based on two items that assess how often the respondent's mother know where he or she is with when not at home and how often respondent tells his or her parents about his or whereabouts when not at home (hardly ever, sometimes, often)	3.02	.59	1-3
Household Labor	Average score for how often respondent's parents require him or her to do chores at home at ages 10-18 (never, rarely, sometimes, often)	2.63	.47	1-3

Table 3 continued...

<i>Prosocial Time Use</i> Church Attendance	Average score for item that indicates how often the respondent attends church service at ages 10-18 (not at all to several times a year or less, about once a month, two or three times a month or more)	1.89	.86	0-3
Prosocial Friendships	Average score for whether or not many of the respondent's friends attend religious services at ages 10-18	.72	.36	0-1
Community Service Involvement	Average number of waves respondent volunteered in school, environmental, medical, political, or other types of community service groups at ages 16-18	.41	.41	0-1
Academic Involvement	Average score for extent to which school requires respondent to think to the best of his or her abilities at ages 10-18 (not true at all, not too true, somewhat true, very true)	3.42	.55	1-4
Paid Work	Average number of waves the respondent worked for pay ages 10-18	.21	.19	0-1

Table 3 continued...

Delinquent Peer Non-Exposure	Average score for five items that indicate whether respondent's friends pressure him or her to skip school, to use illegal drugs, to drink alcohol, to smoke cigarettes, or to commit crime at ages 10-18 (no, yes); reverse coded	.92	.15	0-1
Process 3 Variables: Atypical Personal Traits and Peer Rejection				
<i>Body Weight</i>				
Healthy Weight	Body Mass Index (BMI) between 5 th and 85 th percentile	.80	.40	0-1
Underweight	BMI less than 5 th percentile	.05	.22	0-1
Overweight	BMI between 85 th and 95 th percentile	.10	.22	0-1
Obese	BMI is 95 th percentile and above	.05	.22	0-1
<i>Stature</i>				
Average Stature	Respondent's height does not fall one standard deviation below the mean or one standard deviation above the mean	.66	.47	0-1
Short Stature	Respondent's height is one standard deviation or more below the mean	.16	.37	0-1

Table 3 continued...

Tall Stature	Respondent's height is one standard deviation or more above the mean	.18	.38	0-1
<i>Disability</i>				
No Disability	Respondent does not report having a disability	.93	.25	0-1
Disability	Respondent reports having a physical disability, autism, a speech impediment, Down's syndrome, serious mental/cognitive impairments, deafness, or hearing difficulties anytime from ages 10-18	.07	.25	0-1
Risk-Avoidance	Average score for extent to which respondent avoids danger, risks, and new experiences at ages 10-18 (strongly disagree, disagree, agree, strongly agree)	2.31	.55	1-4
Psycho-Emotional Instability	Average score for nine items that assess to what extent respondent is worrisome, impulsive, sullen, unremorseful, high-strung, moody, paranoid, fearful/anxious, and has an inferiority complex at ages 10-14 (not true, sometimes true, often true)	1.45	.44	1-3

Table 3 continued...

<i>Intellectual Giftedness</i>					
Low or Normal Intelligence	Coded 1 if respondent does not rank in the top 85 th percentile on reading, comprehension, and math at ages 10-14	.85	.50	0-1	
Gifted Intelligence	Coded 1 if respondent ranks in the top 85 th percentile for reading, comprehension, and math at ages 10-14	.15	.50	0-1	
<i>Peer Acceptance / Rejection</i>					
Number of Friends	Average number of friends respondent reports at ages 10-18	9.23	7.50	0-30	
Difficulty Making Friends	Average score for how difficult it is for the respondent to make friends at school at ages 10-18 (not difficult at all, difficult sometimes, often difficult)	1.59	.52	1-4	
Desires More Friends	Average score for how often respondent feels lonely and wishes that he or she had more friends at ages 10-18 (hardly ever, sometimes, often)	1.44	.51	1-3	

Note: Estimates are unweighted descriptive statistics for the entire sample (n=5,003). R=respondent.

Table 4: Variables and Age at Measurement

	Constant	Age 10	Age 12	Age 14	Age 16	Age 18
Sex of Child	X					
Race of Child	X					
Family Structure						X
Maternal Education						X
Maternal Welfare Receipt		X	X	X	X	X
Pubertal Development				X		
Paid Work					X	X
Community Service					X	X
School Performance		X	X	X		
Mother Explains Decisions		X	X	X	X	X
Mother Listens		X	X	X	X	X
Parents Allow Autonomy				X		
Maturity Gap Perceptions				X	X	X
Neighborhood Safety		X	X	X	X	X
School Effectiveness		X	X	X	X	X
Church Attendance		X	X	X	X	X
Academic Involvement		X	X	X	X	X
Prosocial Friendships		X	X	X	X	X
Mother-Child Closeness		X	X	X	X	X
Quality Time with Parents		X	X	X	X	X
Communicative Closure		X	X	X	X	X
Parental Rule-Setting					X	X
Household Labor		X	X	X	X	X
Delinquent Peer Non-Exposure		X	X	X	X	X
Risk-Avoidance		X	X	X	X	X
Psycho-Emotional Instability			X	X	X	
Body Weight				X		
Stature				X		
Disability		X	X	X	X	X
Intellectual Giftedness		X	X	X		
Number of Friends		X	X	X	X	X
Difficulty Making Friends		X	X	X	X	X
Desires More Friends		X	X	X	X	X

Note: An “X” indicates that the item was measured at the specified time-point.

Table 5: Description of Latent Class Variables (n=1,221)

INDICATORS	METRIC	MEAN	SD	RANGE
Pubertal Development	(1=early, 2=average, 3=late)	2.06	.63	1-3
Paid Work	(1=low, 2=medium, 3=high)	1.97	.79	1-3
Community Service Involvement	(1=low, 2=medium, 3=high)	1.82	.83	1-3
School Performance	(1=low, 2=medium, 3=high)	2.00	.82	1-3
Mother Explains Decisions	(1=low, 2=medium, 3=high)	2.36	.73	1-3
Mother Listens	(1=low, 2=medium, 3=high)	2.14	.74	1-3
Parents Allow Autonomy	(1=low, 2=high)	1.28	.45	1-2
Maturity Gap Perceptions	(1=low, 2=medium, 3=high)	2.01	.82	1-3
Neighborhood Safety	(1=low, 2=medium, 3=high)	2.08	.83	1-3
School Effectiveness	(1=low, 2=medium, 3=high)	2.05	.80	1-3
Church Attendance	(1=low, 2=medium, 3=high)	2.09	.80	1-3
Academic Involvement	(1=low, 2=medium, 3=high)	2.10	.87	1-3
Prosocial Friendships	(1=low, 2=medium, 3=high)	2.16	.90	1-3
Mother-Child Closeness	(1=low, 2=medium, 3=high)	2.03	.83	1-3
Quality Time with Parents	(1=low, 2=medium, 3=high)	2.07	.77	1-3
Communicative Closure	(1=low, 2=medium, 3=high)	2.16	.82	1-3
Parental Rule-Setting	(1=low, 2=medium, 3=high)	2.02	.81	1-3
Household Labor	(1=low, 2=medium, 3=high)	2.23	.82	1-3
Delinquent Peer Non-Exposure	(1=low, 2=high)	1.60	.49	1-2
Risk-Avoidance	(1=low, 2=medium, 3=high)	2.17	.69	1-3
Psycho-Emotional Instability	(1=low, 2=medium, 3=high)	2.02	.81	1-3
Body Weight	(1=underweight, 2=average, 3=overweight/obese)	2.10	.44	1-3
Stature	(1=short, 2=average, 3=tall)	2.01	.58	1-3
Disability	(1=no disability, 2=disability)	1.07	.25	1-2
Total Number of Friends	(1=low, 2=medium, 3=high)	2.00	.82	1-3
Desires More Friends	(1=low, 2=high)	1.53	.50	1-2
Difficulty Making Friends	(1=low, 2=medium, 3=high)	2.04	.81	1-3

Table 6: OLS Regression Predicting Perceptions of the Maturity Gap (n=5,003)

Constant	2.09*** (.061)
On-Time Pubertal Development	—
Early Pubertal Development	-.007 (.014)
Late Pubertal Development	-.048*** (.013)
Paid Work	.176*** (.028)
Community Service Involvement	.046** (.013)
School Performance	-.004*** (.000)
<i>Autonomy-Supportive Parents</i>	
Mother Explains Decisions	.016 (.010)
Mother Listens	-.021* (.008)
Parents Allow Autonomy	-.019*** (.002)
<i>Controls</i>	
Nonwhite Respondent	—
White Respondent	.096*** (.013)
Female Respondent	—
Male Respondent	.030** (.010)
Maternal Years of Education	.011** (.002)
Mother is Not Married	—
Mother is Married	.000 (.012)
Maternal Welfare Receipt	-.020* (.008)
R ²	.110
Model F	37.28***

Note: * p<.05, **p<.01, ***p<.001, Two-Tailed Tests. Standard errors are in parentheses.

Table 7: Latent Trajectory Analysis Predicting Group Membership Relative to Abstainers, Add Covariates to Test Process 1 – A Smaller-Than-Normal Maturity Gap (n=5,003)

	Model I		Model II		Model III	
	ALO	LCPO	ALO	LCPO	ALO	LCPO
Constant	-.210 (.231)	.842** (.306)	-1.69*** (.387)	-.928 (.566)	-6.17*** (.480)	4.95*** (.688)
<i>Average Pubertal Development</i>	—	—	—	—	—	—
Early Pubertal Development	-.384*** (.111)	-.129 (.173)	-.342** (.112)	-.166 (.180)	-.337** (.116)	-.090 (.184)
Late Pubertal Development	-.228* (.097)	-.429** (.164)	-.272** (.100)	-.237 (.170)	-.145 (.107)	-.141 (.176)
Paid Work	-1.17*** (.221)	-.052 (.336)	-1.36*** (.220)	.119 (.335)	-1.19*** (.239)	.237 (.347)
Community Service Involvement	.551*** (.105)	-.059 (.173)	.398*** (.110)	.148 (.178)	.319** (.112)	.080 (.181)
School Performance	.011*** (.001)	-.007* (.003)	.011*** (.002)	-.007* (.003)	.011*** (.002)	.003 (.003)
<i>Autonomy-Supportive Parents</i>						
Mother Explains Decisions	.250*** (.075)	-.197 (.107)	.326*** (.074)	-.072 (.108)	.326*** (.082)	-.088 (.113)
Mother Listens	.069 (.071)	-.225* (.098)	.039 (.072)	-.219* (.099)	.071 (.078)	-.147 (.102)
Parents Allow Autonomy	-.018 (.018)	-.122*** (.033)	-.022 (.018)	-.114*** (.033)	.009 (.020)	-.090** (.034)
Nonwhite Respondent			—	—	—	—
White Respondent			.693*** (.084)	.119 (.149)	.661*** (.088)	.000 (.153)

Table 7 continued...

Female Respondent	—	—	—	—
Male Respondent	.018 (.084)	1.07*** (.147)	.003 (.088)	1.03*** (.149)
Maternal Years of Education	.142*** (.020)	.053 (.029)	.130*** (.020)	.050 (.030)
Mother is Not Married	—	—	—	—
Mother is Married	-.064 (.090)	-.287* (.141)	-.066 (.095)	-.307* (.145)
Maternal Welfare Receipt	-.179** (.058)	.137 (.091)	-.143* (.065)	.173 (.093)
Perception of the Maturity Gap			2.34*** (.160)	2.08*** (.190)

Note: * p<.05, **p<.01, ***p<.001, Two-Tailed Tests. Standard errors are in parentheses. ADLO= adolescent limited offenders; LCPO= life-course persistent offenders.

Table 8: OLS regression Predicting Delinquent Peer Non-Exposure (n=5,003)

Constant	.630*** (.028)
Neighborhood Safety	.036*** (.005)
School Effectiveness	.020*** (.003)
Familial Barriers	
Mother-Child Closeness	.010*** (.002)
Quality Time with Parents	.002 (.001)
Parental Rule-Setting	-.009** (.003)
Communicative Closure	.011** (.003)
Household Labor	-.005 (.003)
Prosocial Time Use	
Paid Work	-.024* (.010)
Church Attendance	.005* (.002)
Prosocial Friendships	.005 (.005)
Community Service Involvement	-.004 (.005)
Academic Involvement	.015*** (.003)
<i>Controls</i>	
Nonwhite Respondent	—
White Respondent	-.005 (.005)
Female Respondent	—
Male Respondent	-.011** (.004)
Maternal Years of Education	.001 (.000)

Table 8 continued...

Mother is Not Married	—
Mother is Married	.001 (.004)
Maternal Welfare Receipt	-.006* (.003)
R ²	.070
Model <i>F</i>	18.37***

Note: * $p < .05$, ** $p < .01$, *** $p < .001$, Two-Tailed Tests. Standard errors are in parentheses.

Table 9: Latent Trajectory Analysis Predicting Group Membership Relative to Abstainers, Add Covariates to Test Process 2 – Structural Barriers to Delinquency Learning Opportunities (n=5,003)

	Model I		Model II		Model III	
	ALO	LCPO	ALO	LCPO	ALO	LCPO
Constant	1.22 (.657)	7.16*** (.789)	-.120 (.752)	5.35*** (.955)	.474 (.757)	7.27*** (1.03)
Neighborhood Safety	.954*** (.114)	-.044 (.142)	.798*** (.120)	-.030 (.150)	.858*** (.122)	.075 (.158)
School Effectiveness	.104 (.076)	-.546*** (.101)	.113 (.077)	-.561*** (.104)	.144 (.087)	-.508*** (.106)
Familial Barriers						
Mother-Child Closeness	-.998*** (.070)	-.888*** (.099)	-.952*** (.069)	-.907*** (.098)	-.930*** (.069)	.872*** (.101)
Quality Time with Parents	.108*** (.056)	.071 (.039)	.094*** (.026)	.059 (.038)	.106*** (.027)	.072 (.040)
Parental Rule-Setting	.085 (.063)	.083 (.085)	.103 (.063)	.099 (.085)	.091 (.063)	.049 (.090)
Communicative Closure	.191* (.084)	-.356*** (.102)	.182* (.086)	-.264* (.105)	.200* (.086)	-.234* (.112)
Household Labor	-.270** (.094)	-.073 (.152)	-.271** (.095)	-.103 (.154)	-.262** (.097)	-.110 (.160)
Prosocial Time Use						
Paid Employment	-.894*** (.226)	.186 (.331)	-1.04*** (.231)	.291 (.344)	-1.09*** (.233)	.192 (.359)
Church Attendance	-.209*** (.056)	-.179* (.078)	-.209*** (.056)	-.165* (.077)	-.200*** (.056)	-.157 (.083)
Pros-Social Friendships	.214 (.132)	-.116 (.175)	.189 (.133)	-.037 (.176)	.190 (.134)	-.063 (.186)

Table 9 Continued...

Community Service Involvement	.374***	-.028	.281*	.114	.257*	.051
	(.109)	(.178)	(.113)	(.182)	(.114)	(.191)
School Requires Best Abilities	-.051	-.386***	-.010	-.303*	.023	-.228
	(.092)	(.115)	(.090)	(.117)	(.090)	(.123)
Nonwhite Respondent			—	—	—	—
White Respondent			.455***	.063	.441***	-.001
			(.092)	(.148)	(.090)	(.153)
Female Respondent			—	—	—	—
Male Respondent			.063	1.13***	.038	1.04***
			(.087)	(.150)	(.090)	(.151)
Maternal Years of Education			.121***	.037	.125***	.033
			(.021)	(.030)	(.021)	(.031)
Mother is Not Married			—	—	—	—
Mother is Married			-.092	-.257	-.096	-.271
			(.097)	(.145)	(.098)	(.152)
Maternal Welfare Receipt			-.070	.125	-.048	.075
			(.065)	(.096)	(.066)	(.100)
Delinquent Peer Non-Exposure					-.719***	-1.76***
					(.099)	(.148)

Note: * p<.05, **p<.01, ***p<.001, Two-Tailed Tests. Standard errors are in parentheses. ALO= adolescent limited offenders; LCPO= life-course persistent offenders.

Table 10: OLS Regression Predicting Peer Acceptance / Rejection (n=5,003)

	<i>Total Friends</i>	<i>Desires More Friends</i>	<i>Difficulty Making Friends</i>
Constant	14.87*** (.987)	1.19*** (.066)	1.35*** (.068)
On-Time Pubertal Development	—	—	—
Early Pubertal Development	-.187 (.293)	.043* (.019)	-.008 (.020)
Late Pubertal Development	.029 (.255)	-.198 (.017)	-.031 (.017)
Healthy Weight	—	—	—
Underweight	.768 (.469)	.061* (.031)	.015 (.032)
Overweight	.548 (.350)	.061** (.023)	.093*** (.024)
Obese	-.128 (.524)	.054 (.034)	.114** (.035)
Average Stature	—	—	—
Short Stature	.051 (.290)	-.001 (.019)	-.009 (.020)
Tall Stature	.112 (.265)	.037* (.018)	-.050** (.018)
No Disability	—	—	—
Disability	-.148 (.425)	.094** (.028)	.073* (.029)
Risk-Avoidance	-.833*** (.199)	-.023 (.013)	.003 (.013)
Psycho-Emotional Instability	.296 (.238)	.208*** (.015)	.145*** (.016)
Low or Average Intelligence	—	—	—
Gifted Intelligence	(.260)	(.018)	(.017)
<i>Controls</i>			
Nonwhite Respondent	—	—	—
White Respondent	-.753* (.249)	-.015 (.016)	-.009 (.017)
Female Respondent	—	—	—
Male Respondent	-1.39*** (.204)	-.045** (.013)	-.037** (.014)
Maternal Years of Education	-.178*** (.045)	-.006* (.003)	-.002 (.003)

Table 10 Continued...

Mother is Not Married	—	—	—
Mother is Married	-.287 (.233)	.001 (.001)	-.004 (.016)
Maternal Welfare Receipt	.057 (.155)	.051*** (.010)	.037*** (.010)
R ²	.030	.064	.040
Model <i>F</i>	10.31***	26.37***	14.67***

Note: * $p < .05$, ** $p < .01$, *** $p < .001$, Two-Tailed Tests. Standard errors are in parentheses.

Table 11: Latent Trajectory Analysis Predicting Group Membership Relative to Abstainers, Add Covariates to Test Process 3 – Atypical Personal Traits and Peer Rejection (n=5,003)

	Model I		Model II		Model III	
	ALO	LCPO	ALO	LCPO	ALO	LCPO
Constant	3.38*** (.243)	.710 (.401)	.832* (.401)	-.519 (.601)	1.27** (.431)	-1.69* (.688)
On-Time Pubertal Development	—	—	—	—	—	—
Early Pubertal Development	-.329** (.113)	-.061 (.176)	-.301** (.114)	.005 (.188)	-.294* (.115)	.077 (.189)
Late Pubertal Development	-.210* (.103)	-.407* (.168)	-.250* (.106)	-.149 (.178)	-.249* (.106)	-.138 (.179)
Healthy Weight	—	—	—	—	—	—
Underweight	-.266 (.176)	-.505 (.356)	-.296 (.179)	-.689 (.374)	-.272 (.177)	-.745 (.387)
Overweight	.103 (.140)	.395* (.201)	.198 (.142)	.362 (.202)	.220 (.143)	.339 (.203)
Obese	.132 (.204)	.889** (.273)	.302 (.204)	.874** (.266)	.320 (.205)	.852** (.263)
Average Stature	—	—	—	—	—	—
Short Stature	-.086 (.113)	-.346 (.193)	-.087 (.116)	-.329 (.189)	-.089 (.117)	-.351 (.194)
Tall Stature	-.266* (.104)	-.466** (.174)	-.307** (.106)	-.423* (.174)	-.307** (.107)	-.427* (.171)
No Disability	—	—	—	—	—	—
Disability	-.900*** (.162)	-.465* (.230)	-.866** (.170)	-.479* (.227)	-.853*** (.171)	-.448* (.222)
Risk-Avoidance	-.724*** (.079)	-.959*** (.134)	-.591*** (.082)	-.889*** (.127)	-.605*** (.083)	-.864*** (.124)
Psycho-Emotional Instability	-.629*** (.097)	.586*** (.139)	-.557*** (.101)	.482*** (.141)	-.508*** (.102)	.447** (.147)

Table 11 Continued...

Low or Average Intelligence	—	—	—	—	—	—
Gifted Intelligence	.647**	-.155	.293*	-.147	.276*	-.020
	(.114)	(.225)	(.120)	(.220)	(.121)	(.121)
Nonwhite Respondent			—	—	—	—
White Respondent			.584***	-.103	.577***	-.083
			(.085)	(.138)	(.082)	(.138)
Female Respondent			—	—	—	—
Male Respondent			.042	1.11***	.012	1.23***
			(.085)	(.145)	(.087)	(.151)
Maternal Years of Education			.162***	.037	.158***	.043
			(.019)	(.031)	(.019)	(.031)
Mother is Not Married			—	—	—	—
Mother is Married			-.039	-.299*	-.042	-.276
			(.089)	(.141)	(.091)	(.141)
Maternal Welfare Receipt			-.087	.158	-.070	.139
			(.060)	(.091)	(.060)	(.090)
Total Number of Friends					-.006	.045***
					(.006)	(.008)
Desires for More Friends					-.310***	.080
					(.086)	(.123)
Difficulty Making Friends					.021	.297*
					(.080)	(.125)

Note: * p<.05, **p<.01, ***p<.001, Two-Tailed Tests. Standard errors are in parentheses. ADLO= adolescent limited offenders; LCPO= life-course persistent offenders.

Table 12: Latent Class Models (N= 1,221)

Number of Classes	Fit Statistics	Class Membership Probabilities
2	BIC = 54897 AIC = 54363 G ² = 54161 Log-Likelihood = -37535	Class 1: .56 Class 2: .44
3	BIC = 54906 AIC = 54402 G ² = 54798 Log-Likelihood = -37353	Class 1: .44 Class 2: .30 Class 3: .26
4	BIC = 55037 AIC = 53963 G ² = 53557 Log-Likelihood = -37233	Class 1: .32 Class 2: .31 Class 3: .19 Class 4: .18

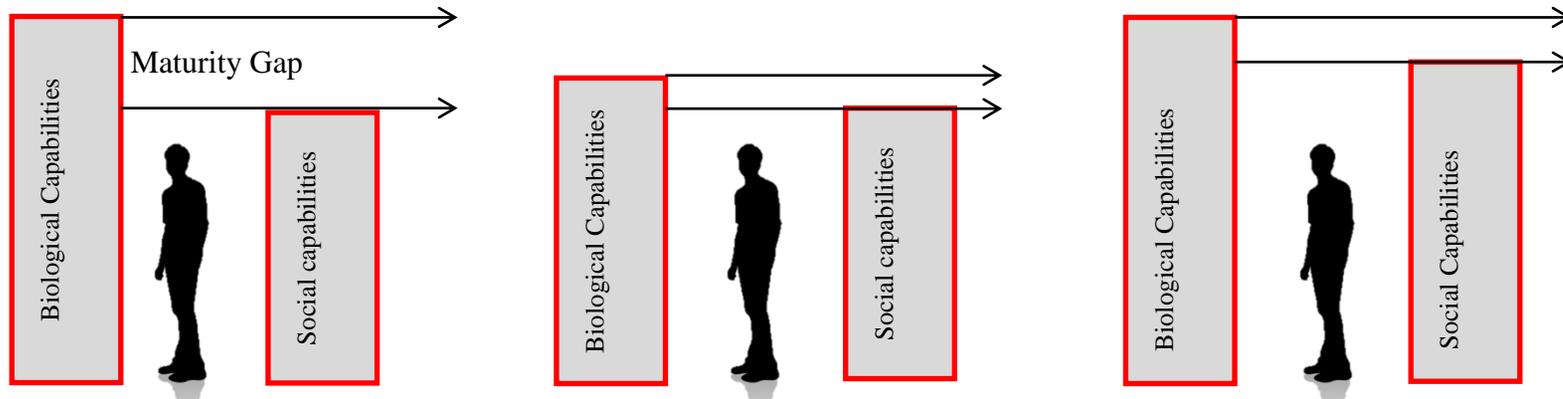
Table 13: Predicting Abstainer Latent Classes with Covariates (reference group= class 2, 44% of abstainers) (n=1,221)

	BETA	OR	BETA	OR	BETA	OR	BETA	OR	BETA	OR
Intercept	-1.66***	.189	-.443	.641	-5.09***	.006	-1.41***	.245	1.87*	6.50
	(.344)		(.236)		(.733)		(.326)		(.720)	
Nonwhite	—									
White	1.31**	3.71								
	(.328)									
Female			—							
Male			-.497*	.609						
			(.199)							
Maternal Years of Education					.337***		1.40			
					(.015)					
Mother is Not Married							—			
Mother is Married							1.10***	3.00		
							(.207)			
Maternal Welfare Receipt									-1.42***	.241
									(.183)	

Note: * p<.05, **p<.01, ***p<.001, Two-Tailed Tests. Standard errors are in parentheses. OR=odds ratio.

Table 14: Item Response Probabilities

ITEM RESPONSE	Abstainer Class 1 (N=684)			Abstainer Class 2 (N=587)			ALO (N=3,227)			LCPO (N=555)		
	1	2	3	1	2	3	1	2	3	1	2	3
Pubertal Development	.20	.49	.31	.18	.60	.22	.15	.62	.23	.17	.63	.20
Paid Work	.22	.34	.44	.31	.36	.33	.35	.38	.27	.26	.39	.35
Community Service	.38	.24	.38	.59	.24	.17	.40	.31	.29	.54	.28	.18
School Performance	.17	.36	.47	.41	.33	.26	.30	.33	.37	.46	.30	.24
Mother Explains Decisions	.07	.31	.62	.26	.38	.36	.14	.32	.54	.18	.38	.34
Mother Listens	.11	.37	.52	.36	.39	.25	.19	.45	.36	.27	.46	.27
Parents Allow Autonomy	.69	.31		.69	.31		.71	.29		.78	.22	
Maturity Gap Perceptions	.69	.22	.09	.43	.25	.32	.25	.38	.37	.23	.32	.45
Neighborhood Safety	.23	.28	.49	.44	.26	.30	.24	.33	.43	.45	.28	.27
School Effectiveness	.17	.43	.40	.38	.34	.28	.27	.36	.37	.44	.34	.22
Church Attendance	.22	.19	.59	.38	.29	.33	.27	.40	.33	.28	.35	.37
Academic Involvement	.23	.22	.55	.39	.23	.38	.33	.24	.43	.42	.22	.36
Prosocial Friendships	.20	.16	.64	.41	.14	.45	.33	.18	.49	.42	.19	.39
Mother-Child Closeness	.10	.21	.69	.23	.31	.46	.41	.33	.27	.36	.31	.33
Quality Time with Parents	.09	.47	.44	.39	.43	.18	.26	.39	.35	.29	.39	.32
Communicative Closure	.11	.33	.56	.28	.33	.39	.27	.30	.43	.39	.28	.33
Parental Rule-Setting	.31	.30	.39	.38	.28	.34	.30	.37	.33	.34	.34	.32
Household Labor	.18	.27	.55	.27	.25	.48	.25	.27	.48	.25	.48	.27
Delinquent Peer Non-Exposure	.17	.83		.35	.65		.41	.58		.66	.34	
Risk Avoidance	.13	.49	.38	.18	.41	.41	.17	.53	.30	.20	.53	.27
Psycho-Emotional Instability	.41	.36	.23	.14	.34	.52	.35	.35	.30	.25	.27	.48
Body Weight	.08	.84	.08	.05	.78	.17	.04	.81	.15	.04	.77	.19
Stature	.18	.60	.22	.15	.64	.21	.16	.67	.17	.14	.70	.16
Disability	.95	.05		.85	.15		.94	.06		.91	.09	
Number of Friends	.38	.31	.31	.41	.34	.25	.34	.35	.31	.27	.29	.44
Desires More Friends	.54	.46		.31	.69		.50	.50		.42	.58	
Difficulty Making Friends	.39	.39	.22	.20	.35	.45	.32	.34	.34	.30	.30	.40



Adolescent-Limited Offending

Low Biological Capabilities

High Social Capabilities

Figure 1: Average and Smaller-than-Normal Maturity Gaps

<i>Abstention through a Smaller-Than-Normal Maturity Gap</i>	<i>Abstention through Structural Barriers</i>	<i>Abstention through Atypical Traits / Peer-Rejection</i>
<ul style="list-style-type: none"> - Experience low biological capabilities (i.e., later pubertal development) or high social capabilities (i.e. working for pay, volunteering in community services, excelling in academics, or receiving autonomy-supportive parenting) - Perceive a narrow maturity gap 	<ul style="list-style-type: none"> - Reside in neighborhoods in which crime opportunities are rare, attend effective schools, are exposed to familial barriers, or spend significant amounts of time in pro-social activities - Perceive a normal to high maturity gap 	<ul style="list-style-type: none"> - Possess atypical personal characteristics that are psycho-emotional, temperamental, cognitive, or physical in nature - Experience peer rejection - Perceive a normal to high maturity gap

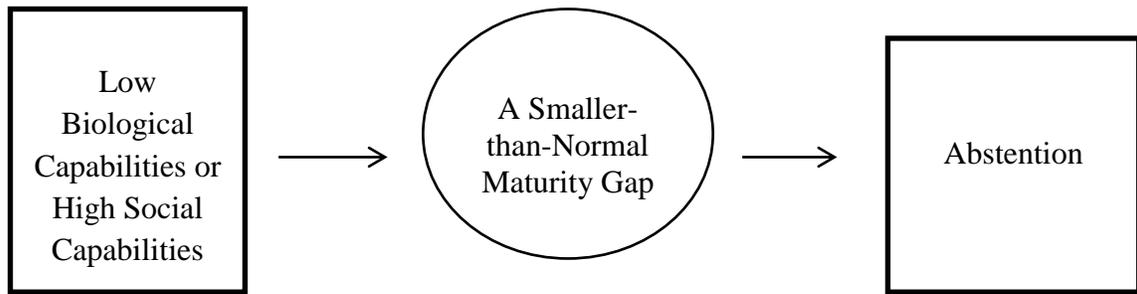
Figure 2: Three-Dimensional Abstention Classification System

<i>Abstention through a Smaller-Than-Normal Maturity Gap</i>	<i>Abstention through Delinquent Peer Non-Exposure</i>
<ul style="list-style-type: none"> - Experience low biological capabilities (i.e., later pubertal development) or high social capabilities (i.e. working for pay, volunteering in community services, excelling in academics, or receiving autonomy-supportive parenting) - Perceive a narrow maturity gap 	<ul style="list-style-type: none"> - Exposed to familial-based structural barriers - Possess atypical personal characteristics that are psycho-emotional, temperamental, cognitive, or physical in nature - Experience peer rejection - Perceive a normal to high maturity gap

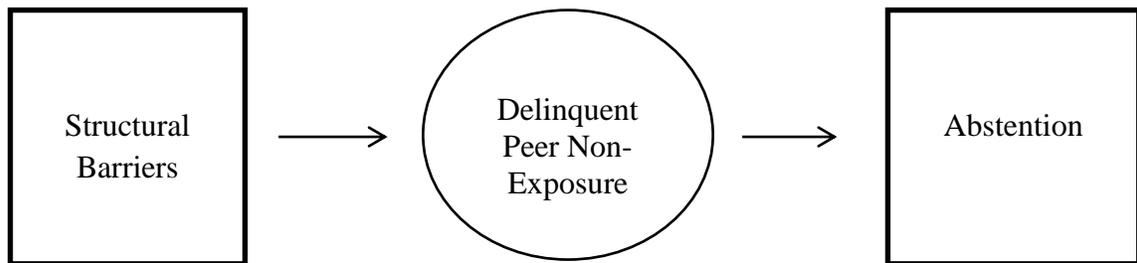
Figure 3: Two-Dimensional Abstention Classification System, Version A

<i>Abstinence through High Social Capabilities</i>	<i>Abstinence through Atypical Traits / Peer Rejection</i>
<ul style="list-style-type: none"> - Experience high social capabilities (i.e. working for pay, volunteering in community services, being exposed to autonomy-supportive parenting, or excelling in academics) - Reside in neighborhoods in which crime opportunities are rare, attend effective schools, are exposed to familial barriers, or spend significant amounts of time in pro-social activities - Perceive a narrow maturity gap 	<ul style="list-style-type: none"> - Possess atypical personal characteristics that are psycho-emotional, temperamental, cognitive, or physical / biological in nature (including late-pubertal development) - Experience peer rejection - Perceive a normal to high maturity gap

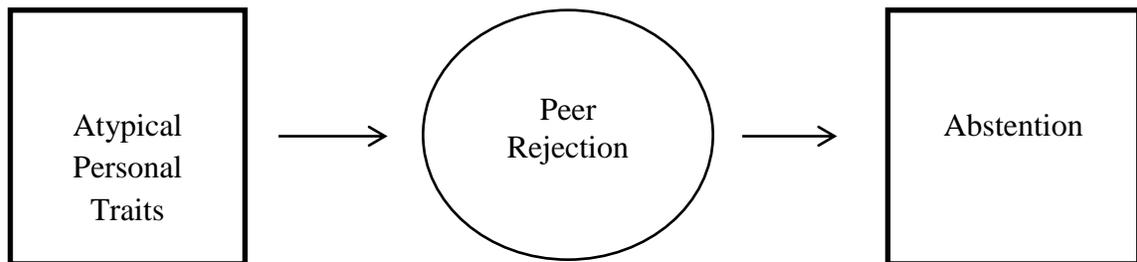
Figure 4: Two-Dimensional Abstinence Classification System, Version B



Process 1: A Smaller-than-Normal Maturity Gap



Process 2: Structural Barriers to Delinquency Learning Opportunities



Process 3: Atypical Personal Characteristics and Peer Rejection

Figure 5: Graphical Display of Theoretical Models

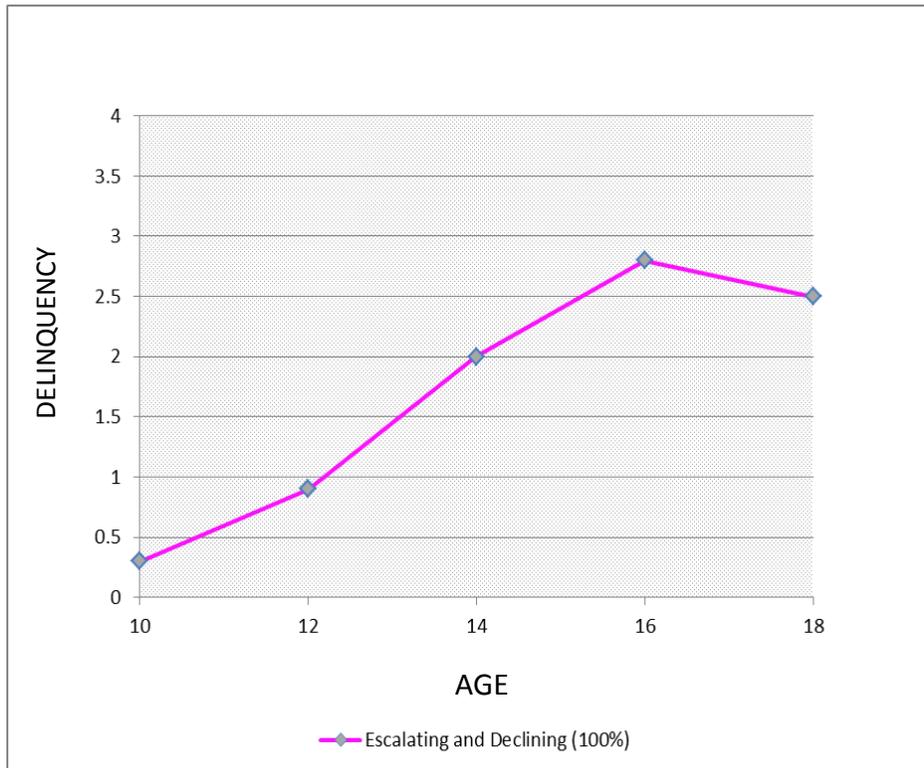


Figure 6: Single-Quadratic Trajectory

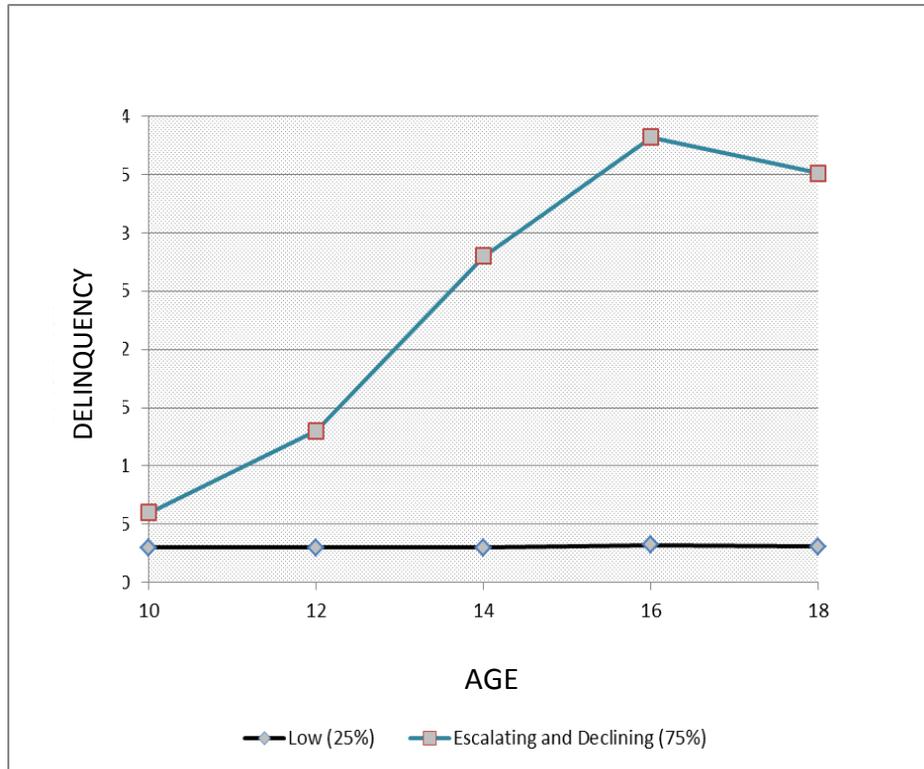


Figure 7: Two-Trajectory Model

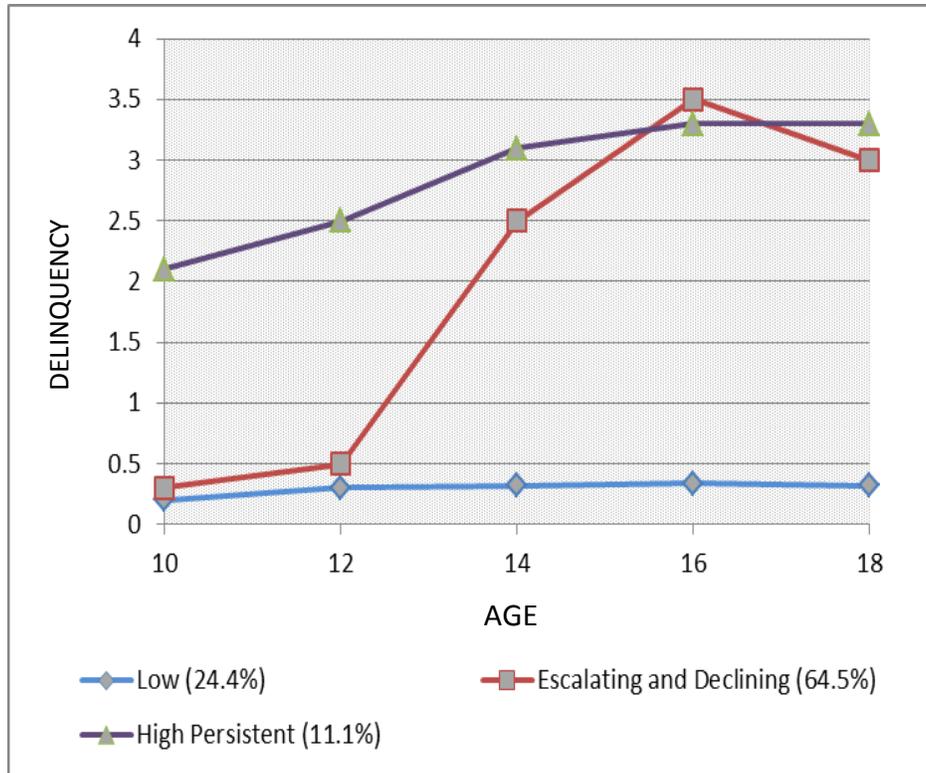


Figure 8: Three-Trajectory Model

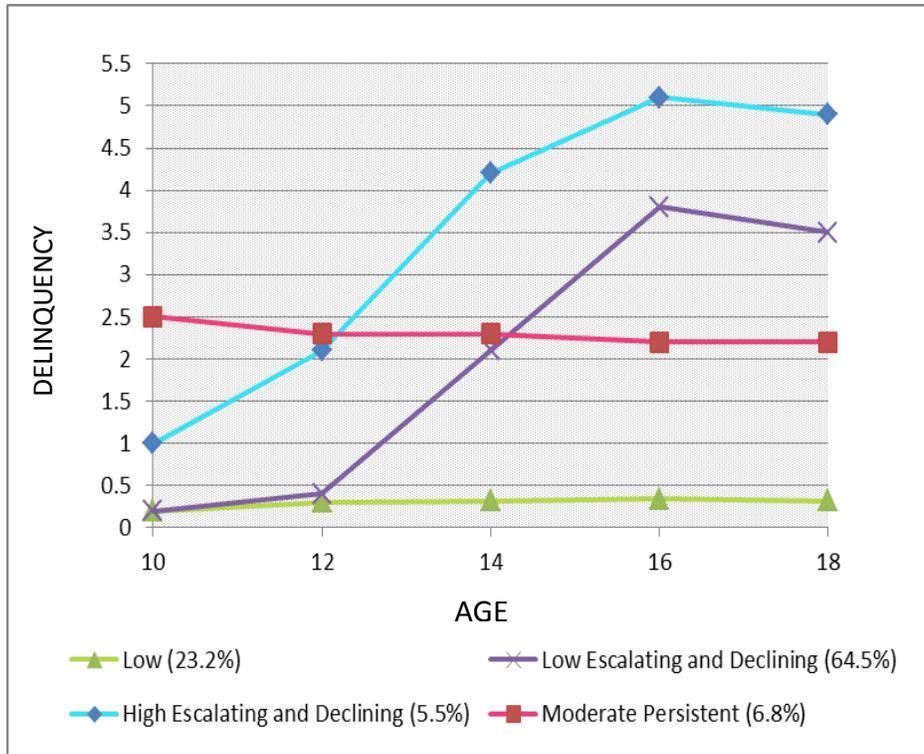


Figure 9: Four-Trajectory Model