Youth-Serving Organizations and Contextual Moderators of Associations with Adolescents' Antisocial Behavior Trajectories

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Abstract

The primary goal of this dissertation is to develop and test a conceptual model elucidating the dynamic relationships between neighborhood-based youth-serving institutions, family dynamics, neighborhood collective efficacy, and adolescents' antisocial behavior trajectories. I address this goal from relational developmental systems theories (e.g., Lerner, 2006; Overton, 2015) and bioecological perspectives (Bronfenbrenner & Morris, 2006), and by expanding on Leventhal and Brooks-Gunn's (2000) framework identifying processes through which neighborhood structural features (e.g., poverty) operate. I propose a study that attempts to answer three research questions: (1) Do associations between availability of institutional resources and adolescents' activity participation differ as a function of behavior profile? (2) Does activity participation predict stability or change in adolescents' behavior profile membership? and (3) Is the association between adolescents' activity participation and stability or change in their behavior profile membership moderated by family dynamics or neighborhood collective efficacy? I address these questions using the *Project on Human Development in Chicago Neighborhoods*, a large, longitudinal dataset with a neighborhood-based sampling framework. Policy and research implications are discussed.

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CHAPTER 1: INTRODUCTION

In the 1990s, a characterization of young offenders as "superpredators" emerged in the wake of a spike in juvenile crime, and in response, "tough on crime" policies cropped up nationwide (DiIulio, 1995; Garinger, 2012). These policies emphasized punishment and removal of "bad" youth from society and saw a steep increase in rates of juvenile confinement during the 1990s and 2000s (Steinberg, Chung, & Little, 2004). Recently, however, juvenile justice system-involved youth have been viewed as having "development marked by the accumulation of disadvantage" (Steinberg et al., 2004, p. 22) and in need of treatment rather than punishment. In accordance with this shifting view, the number of adolescents in placement nationwide dropped 42% from 1997 to 2011 (the most recent year for which national placement data are available; Office of Juvenile Justice and Delinquency Prevention, 2014). Although this move away from punishing and warehousing adolescents who engage in delinquent or antisocial behaviors is more consistent with current research on adolescent development within context, these youth are still viewed primarily from a deficit perspective.

Despite the evolution in how system-involved youth are regarded, the legacy of the "superpredator" conceptualization remains. Significant numbers still come into repeated contact with the juvenile justice system: On any given day, approximately 70,000 youth reside in juvenile justice facilities, and 100,000 are released from placement each year (Office of Juvenile Justice and Delinquency Prevention, 2013; Snyder & Sickmund, 2006). Further, exposure to the juvenile justice system—particularly placement in an institution—can itself have an iatrogenic effect; that is, system involvement may have unintended negative consequences (Gatti, Tremblay, & Vitaro, 2009). Recidivism (variably defined as rearrest, re-adjudication, or re-institutionalization) rates among adolescents who are placed in the juvenile justice system are

extremely high, roughly 75% after three years (Annie E. Casey Foundation, 2011). Finally, the juvenile justice system disproportionately serves youth of color and those from relatively economically disadvantaged neighborhoods, and the unfavorable consequences of system involvement only compound other risk factors often experienced by youth from disadvantaged backgrounds (e.g., family poverty, neighborhood violence; Office of Juvenile Justice and Delinquency Prevention, 2014; Sampson, Morenoff, & Raudenbush, 2005). The cost to society of institutionalizing youth even once, let alone multiple times, is excessive, if not unsustainable: It costs $90,000 to house a single youth for a year, and states spend a combined nearly six billion dollars annually to institutionalize juveniles (Justice Policy Institute, 2009; Office of Juvenile Justice and Delinquency Prevention, 2014).

Delinquency and juvenile justice involvement become a concern in adolescence because it is a developmental period characterized by biological, cognitive, and socioemotional changes that make antisocial behavior more likely than earlier in childhood. Factors associated with adolescent antisocial behaviors are present at multiple levels of their ecology, including at the individual, peer, family, and neighborhood levels (Steinberg & Morris, 2001). Genetic predisposition and intrauterine environment also may play a role in adolescents' propensity for antisocial behaviors. For instance, research demonstrates that individuals with certain genotypes (i.e., variants of the genes *DRD4* and *MAOA*) may be more susceptible to aggressive behaviors because of the genes' roles in attention and emotion regulation (e.g., Simons et al., 2012). These gene expressions are associated with greater sensitivity to environmental conditions, from the intrauterine environment to the family and so on, such that adolescents in stressful or violent contexts may be more likely to become aggressive or violent themselves (Belsky & Pluess, 2009). Moreover, normative adolescent development includes a tendency toward heightened

impulsivity and risk-taking, in part because different areas of the adolescent brain develop at varying rates: The limbic system, responsible for reward responses and thrill seeking, develops more quickly than the prefrontal cortex, which is in charge of executive function and critical thinking (Steinberg, 2014). This mismatch results in high susceptibility to socioemotional influences without the check on impulsivity that most adults possess as a result of mature executive function.

Adolescent development also is characterized by a shift in salience from family to peer relationships, meaning that adolescents' behavior may be heavily swayed by their peer groups (Brown, 2004). Youth who spend time with antisocial peers, then, are more likely to engage in antisocial behavior themselves (e.g., Patterson, Dishion, & Yoerger, 2000). Delinquent and antisocial acts such as school truancy, property damage, drug use, and many violent crimes tend to be committed in groups (Mennis & Harris, 2011; Zimring, 1981). Family and parental characteristics play an important role in adolescents' exposure to antisocial peer groups. Notably, low parental support and monitoring are associated with deviant peer affiliation. Youth who do not feel supported by their parents or other important adults in their lives may seek attention and a feeling of belonging from others, which may include deviant peers (Dishion, Duncan, Eddy, Fagot, & Fetrow, 1994). Low parental monitoring is similarly problematic, as it provides youth with opportunities to engage with deviant peers outside of parents' knowledge (Chung & Steinberg, 2006).

Neighborhood-level factors play an increasingly significant role in adolescents' development as they begin to spend less time inside the home and more time out in their neighborhoods (Steinberg & Morris, 2001). Both neighborhood structural characteristics and social dynamics may be associated with the extent and manner with which adolescents engage in

antisocial behaviors. Structural risk factors for antisocial behaviors include residence in a disadvantaged neighborhood, typically characterized by low socioeconomic status (e.g., many residents in poverty, with less than a bachelor's degree, and unemployed; Murray & Farrington, 2010). Neighborhood social dynamics that tend to foster antisocial behavior and delinquency include high disorder (e.g., social disorder, such as drug use and prostitution, and physical disorder, including graffiti and litter) and violence, whereas greater collective efficacy (i.e., high social cohesion and social control; e.g., Sampson, 1997) is associated with less adolescent delinquency.

Disadvantaged communities also tend to be more heavily policed than more affluent neighborhoods (e.g., Hannon, 2003). Adolescents in more advantaged communities also engage in delinquent behavior (Ansary & Luthar, 2009), but their peers from lower-income neighborhoods are more likely to be arrested, and subsequently swept up into the juvenile justice system, for the same behaviors (Gatti, Tremblay, & Vitaro, 2009). In other words, adolescents in relatively advantaged and disadvantaged neighborhoods may engage in the same antisocial behaviors, but youth in the latter are identified as delinquent at higher rates than are youth in the former (Birckhead, 2012).

Risk factors at multiple levels are not simply additive; rather, they interact with one another across levels (e.g., individual and neighborhood levels; e.g., Bronfenbrenner & Morris, 2006). One example from the literature illustrates this point well: Adolescents who are predisposed to antisocial behavior as a result of individual characteristics (e.g., impulsivity) are more likely to commit delinquent acts than are their less impulsive peers regardless of the neighborhood context. However, youth who are less prone to behavior problems and who live in more disadvantaged neighborhoods are more likely to engage in antisocial activities than are

their peers in more advantaged neighborhoods, due to various structural (e.g., lack of educational and employment opportunity) and social (e.g., violent and criminal activity as normative) conditions (Gibson, 2012).

Adolescents who engage in antisocial behaviors typically are discussed in the literature using a deficit-based framework, focusing on risk factors, because they behave "badly," or in a way outside convention. But regardless of the public or scholarly characterization of these youth, virtually all of them return to society after their time in custody (Mears & Travis, 2004). Evidence supports the notion that, despite the myriad risk factors many antisocial youth face, many can lead productive, healthy lives and contribute positively to society (Aiyer, Williams, Tolan, & Wilson, 2013; Laub & Sampson, 2001; Todis, Bullis, Waintrup, Schultz, & D'Ambrosio, 2001). However, supports at various levels, notably the neighborhood level, are crucial to promoting positive development. Research points to some neighborhood-level interventions as both more cost-effective and more efficacious than institutionalization for many youth (Greenwood & Turner, 2011; Henggeler & Schoenwald, 2011; Lipsey, 2009; U.S. Public Health Service, 2001). It is, therefore, vital to determine how neighborhoods can help these youth desist from further delinquent and criminal behavior, as well as develop positively and contribute productively to conventional society. Accordingly, this dissertation will attempt to identify how neighborhood-based institutional resources in more disadvantaged neighborhoods may serve as assets to youth who display antisocial behaviors.

Although antisocial behaviors are observed among youth of all ages, because there is considerable variability over the course of adolescence, I plan to focus in this dissertation on early adolescence—typically conceptualized as ages 10 to 14 (Eccles, 1999)—because neighborhoods emerge as increasingly salient contexts during the transition to adolescence while

the family context remains more significant than later in adolescence. Moreover, the developmental timing of the emergence of antisocial behaviors has implications for their longevity and severity—children who show a propensity for antisocial behaviors early (pre-adolescence) are more likely to continue to demonstrate those types of behaviors than are those youth who begin to display such behaviors in adolescence (often due to a combination of impulsivity and peer pressure; Moffitt, 1993).

Theoretical Framework

Because this dissertation addresses a number of contexts with implications for adolescent development and antisocial behaviors, from the individual to the neighborhood level, it is informed by multiple theoretical perspectives. I first give a general overview of relational developmental systems theories and the bioecological model, overarching theories used to describe and explain human development in context. I then review social disorganization and routine activities theories, both of which are used to explain contextual influences on the development of antisocial behavior from a deficit perspective. To bring the focus to positive individual-neighborhood interactions, I describe risk and resilience approaches, including the concept of community resilience. Finally, I discuss a theoretical framework specifically addressing the potential role of neighborhood-based institutional resources in promoting or hindering adolescent well-being generally and specifically among antisocial youth.

Relational Developmental Systems Theories

Given the emphasis on contextual risk factors for adolescents' antisocial behavior, this dissertation is grounded in relational developmental systems (RDS) theories, which view development as occurring through a bidirectional, mutually influential relationship between the individual and his or her contexts (e.g., Lerner, 2006; Overton, 2015). The salience of certain

contextual features over others is thought to depend in large part on the individual's developmental period; specifically, young adolescents' increasing pursuit of autonomy and identity exploration (e.g., Côté, 2009) suggests that their development may be more strongly linked with extrafamilial contexts, such as the neighborhood and peer groups, than earlier in childhood (Leventhal, Dupéré, & Brooks-Gunn, 2009).

Relational developmental systems theories allow for a more nuanced approach to understanding how some contextual characteristics may protect against adverse influences or otherwise promote positive development. For instance, parenting practices such as monitoring may protect adolescents from neighborhood violence and disorder (Byrnes, Miller, Chen, & Grube, 2011; Chung & Steinberg, 2006; Rankin & Quane, 2002). Alternatively, neighborhood assets, such as social control or high-quality youth programming, can buffer the effects of inadequate parenting on young adolescents' behavior (or enhance the effects of good parenting; Browning, Leventhal, & Brooks-Gunn, 2004). Each context shapes—and is shaped by—all other contexts in the young adolescent's milieu.

Bronfenbrenner's Bioecological Model

Bronfenbrenner's (e.g., Bronfenbrenner, 1977; Bronfenbrenner & Morris, 2006) bioecological model postulates that development occurs via reciprocal interaction between an individual and his or her environment, consisting of several nested structures moving from those immediately surrounding the individual out. The *microsystem* is the most proximal setting of the ecological environment, consisting of those elements (e.g. family, school) with which the individual interacts on a daily basis. The *mesosystem* consists of interactions between elements of the microsystem, for example, the interaction between a child's parents and his or her teacher. One step out from the mesosystem is the *exosystem*, which contains somewhat more distal

elements of the child's environment (e.g., the neighborhood; local, state, and federal government); these features do not interact directly with the child, but they can indirectly affect him or her. The *macrosystem* is still more distal from the individual and encompasses the laws (formal) and values (informal) of the society in which the child is developing.

The Importance of Space and Place: Social Disorganization and Routine Activities Theories

Although, as noted, there is a growing effort to focus more on adolescents' assets and I strive in this dissertation to stay away from the notion that individual children are inherently "bad", it is difficult to discuss the development of antisocial behaviors without mentioning contextual challenges. Much of the literature focusing on associations between neighborhood characteristics and adolescents' antisocial behaviors (often framed as delinquency) stresses the significance of neighborhood disadvantage (e.g., Elliott, Wilson, Huizinga, Sampson, Elliott, & Rankin, 1996). Most prominently, social disorganization theories (Bursik & Grasmick, 1999; Sampson, Raudenbush, & Earls, 1997; Shaw & McKay, 1942/1969) posit that unfavorable neighborhood characteristics, rather than characteristics of individual residents per se, are largely responsible for neighborhood crime and delinquency. In their seminal work on the spatial distribution of delinquency, Shaw and McKay (1942/1969) found that crime and delinquency were concentrated in high-poverty neighborhoods over long spans of time, despite almost complete turnover in the racial and ethnic composition of neighborhood populations. Neighborhood poverty and accompanying structural characteristics, notably racial/ethnic heterogeneity and high residential mobility, are thought to undermine social connections and shared norms, creating conditions conducive to crime and disorder. Without a general consensus about what is and is not acceptable conduct, youth may begin to take part in delinquent acts

because there is insufficient social control preventing them from doing so (Berg & Loeber, 2011).

Whereas social disorganization theory focuses primarily on neighborhood factors, routine activities theory (RAT) adds individual and interpersonal dynamics into the explanation of crime and delinquency. RAT posits that crime can be explained by the spatial and temporal intersection of potential offenders, potential victims, and opportunities (Cohen & Felson, 1979). Specifically, three elements must be present: (1) individuals who are motivated to offend; (2) individuals perceived as "suitable targets" for crime; and (3) the absence of controls or "capable guardians" that protect against the commission of criminal or delinquent acts (i.e., social disorganization). RAT assumes that individuals are rational actors that may be inclined to commit offenses against people or properties, but that there must be sufficient opportunity within a given space (i.e., a neighborhood) and time to act on that inclination; in other words, there must be potential victims *and* limited protections against potential crimes. (In the case of "victimless" crimes, such as truancy or drug use, the first and third elements must be present.) In neighborhoods high in poverty and low in social control, individuals—and especially adolescents—may perceive that committing crimes and delinquent acts has few costs (low likelihood of getting caught[1]) and many benefits (e.g., convenience, satisfaction of impulses, peer acceptance; Kikuchi, 2008).

Although social disorganization and routine activities theories recognize neighborhood-based influences on crime and delinquency, their focus is on what goes wrong in neighborhoods, reflecting the deficit perspective so often used to frame adolescent delinquency. On the contrary, risk and resilience models provide a more favorable view of how individuals' strengths interact

[1] As noted earlier, some scholars argue that in relatively disadvantaged neighborhoods, likelihood of getting caught is actually *higher* than in more advantaged neighborhoods, because poorer neighborhoods are more heavily policed (e.g., Hannon, 2003).

with environmental assets to promote positive development despite challenges at multiple levels of organization. I discuss risk and resilience at the individual and neighborhood level next.

Risk and Resilience

The search for assets (as well as risk factors) has been conducted at various levels of human organization, including the individual, family, and neighborhood levels. According to RDS theories (Overton, 2015) and the bioecological model (Bronfenbrenner & Morris, 2006), characteristics at each of these levels interact with other features in an individual's ecology to promote or inhibit positive development. For example, it is now clear that some young people can thrive despite growing up in challenging family or neighborhood circumstances; in other words, they are *resilient* (e.g., Cicchetti, 2010). Although the conceptualization of resilience is a source of debate in the field of developmental psychology, the construct generally can be described as an individual's ability to adapt to challenging circumstances (e.g., poverty) to function at a satisfactory level (e.g., Masten, 2011). As understood for the purposes of this dissertation, resilience is not simply a static, individual trait; rather, it is the product of interactions between the individual (cognitions, emotions, and behaviors) and his or her surroundings at multiple levels, from family to neighborhood to broader structural forces (Rutter, 2012; Ungar, 2011). The presence of assets at these various contextual levels is particularly important for adolescents who engage in antisocial behaviors.

The notion of neighborhood assets as protective and promotive of neighborhood residents despite sustained disadvantage is well captured in the concept of *community resilience*[2] (Ungar, 2011). The study of community resilience reflects a shift in the research from an individually

[2] In this section, I use the terms "community" and "neighborhood" interchangeably to align Ungar's (2011) conceptualization of "community" with mine of "neighborhood", but the terms have different connotations. Whereas the term "community" tends to describe a cohesive group of people with common values, interests, or other characteristics (MacQueen et al., 2001), a "neighborhood" typically is characterized as a geographical area, such as a census tract (Leventhal et al., 2015).

focused approach to an ecologically focused one, as well as a shift from community deficits to community assets. The concept of community resilience emphasizes that individual and interpersonal strengths are important resources, but that individuals tend to succeed only when their communities can support and promote their well-being. Ungar (2011) discusses two aspects of community resilience: physical capital and social capital. *Physical capital* is composed of formal social service systems, including child welfare, education, and health care; and municipal infrastructure, such as public transportation. Physical capital is successful when these systems and infrastructure are sensitive and responsive to the community's needs. *Social capital* consists of dynamics such as informal social networks, instrumental support, and shared values, all of which can be helpful during a crisis or in the context of prolonged socioeconomic disadvantage. For the purposes of this dissertation, I focus primarily on what Ungar (2011) refers to as physical capital, with an emphasis on the potential importance of neighborhood institutional resources, although I also address aspects of social capital as modifiers of the associations between institutional resources and adolescent well-being.

Neighborhood Effects: Institutional Resources

Leventhal and Brooks-Gunn (2000) identify institutional resources—opportunities or services available to neighborhood residents that are typically intended to foster economic, educational, physical, and socioemotional well-being—as a dimension of the neighborhood context that may underlie the association between neighborhood disadvantage and adolescents' antisocial behaviors. Institutional resources that are especially relevant to adolescents include schools, employment opportunities, and community centers. The presence of high-quality neighborhood formal and informal institutions is thought to foster positive adolescent outcomes (Leventhal & Brooks-Gunn, 2000). Conversely, in line with social disorganization theory,

adolescents with few structured opportunities to participate in conventional or prosocial activities may be more likely to develop antisocial tendencies or engage in delinquent behaviors (Snyder & Sickmund, 2006).

Several features of institutional resources dictate whether those resources can promote adolescents' well-being: First, are services relevant to adolescents' needs *available* in the community? Next, are the services of high enough *quality* to help the youth and families they serve? Finally, are these services physically *accessible* to those who need them? Availability, quality, and accessibility of institutional resources, which are defined and explored in turn next, each pose challenges—albeit to different extents and in different ways—in disadvantaged neighborhoods.

Availability. First, and most evidently, resources that protect and promote positive adolescent development must be present in (or near) their neighborhoods if youth are to have the chance to take advantage of them. Compared with more affluent neighborhoods, economically disadvantaged neighborhoods, especially in rural areas, tend to have fewer resources for young people, both in terms of sheer numbers and in terms of variety of services and activities (Cohen, Taylor, Zonta, Vestal, & Schuster, 2007; Edwards, Bocarro & Kanters, 2011; Pedersen & Seidman 2005; Gardner & Brooks-Gunn, 2009). Issues of availability in more disadvantaged neighborhoods may be due to a lack of financial, physical, and social capital necessary to introduce and sustain even the most needed services (Granger, 2008; Leventhal, Shuey, & Dupéré, 2015).

Although research by Small and McDermott (2006) suggests that some poorer neighborhoods in urban areas have comparable or higher numbers of institutions compared with more advantaged neighborhoods, availability of resources is associated with a variety of

neighborhood characteristics. For instance, in terms of neighborhood racial and ethnic composition, there are more resources in high-immigrant areas, and fewer in heavily Black, non-immigrant neighborhoods, compared with the average neighborhood. In terms of geographic location, there tend to be more institutional resources in the South and West of the US than elsewhere, and more in urban neighborhoods than in rural areas. Finally, the economics of the surrounding metropolitan area may play a role: There are more institutions in cities that are more affluent overall compared with more disadvantaged areas. Moreover, available organizations in more disadvantaged neighborhoods may be of poor quality or difficult to access (Small & McDermott, 2006).

Accessibility. Even if relevant services are available to adolescents and their families, those services will only be useful if they are physically accessible. Many families in disadvantaged neighborhoods have limited or nonexistent access to private transportation (i.e., cars) and thus rely on nearby institutions or ones they can reach using public transportation (Burton, Lichter, Baker, & Eason, 2013; Lichter & Jensen, 2002). This inaccessibility is especially challenging in suburban and rural areas, where families may live too far from available institutions to walk and do not have reliable public transportation on which they can rely. In neighborhoods with services that are easily accessible—for example, residents can walk to necessary institutions—adolescents and their families may be more likely to take advantage of those services (Ungar, 2011). This is especially true for younger adolescents, who may have to rely on parents or older siblings to accompany them to activities. Adolescents who live near neighborhood resources display lower levels of aggression than adolescents who live farther from institutions (Molnar et al., 2008). Colocation of resources also may contribute to positive adolescent development through saved time and convenience (Ungar, 2011).

Institutional resources also may be available in youth's neighborhoods, but inaccessible due to eligibility restrictions. For instance, programs such as Multisystemic Therapy (Henggeler & Schoenwald, 2011) are designed to address adolescents' antisocial behaviors at multiple levels of youth's environments (e.g., family, neighborhood, school), but in some neighborhoods may only serve adolescents who already had contact in the juvenile justice system (i.e., as a diversion or re-entry program), rather than as a preventive program.

Quality. Availability and accessibility of institutions is necessary, but not sufficient, for youth to take advantage of institutional resources; these services must be of high quality as well to benefit youth. Quality of institutions may be measured by how appropriate their services are for their target populations and the extent to which they successfully meet their stated goals, objectives, and outcomes (e.g., Jacobs & Kapuscik, 2000). High-quality youth-serving institutional resources must be developmentally appropriate (e.g., staff demonstrate an understanding of adolescent development) and promote positive outcomes in one or more domains (e.g., academic, behavioral, social-emotional). Through a series of meta-analyses of after-school programs, Durlak and colleagues determined that programs that tended to yield more positive outcomes had four common features: 1) They had a *sequenced* curriculum intended to achieve program objectives; 2) students were *actively* involved in learning and social activities; 3) the programs had a clear *focus*; and 4) goals were *explicitly* stated (Durlak & Weissburg, 2007; Granger, Durlak, Yohalem, & Reisner, 2007). Adolescents participating in programs with these features—regardless of the programs' area of focus (academic, behavioral, and emotional)—demonstrated favorable outcomes in multiple domains. In other words, higher academic achievement, reduced problem behaviors and drug use, and higher self-esteem and school engagement tended to cluster together (Jessor, Turbin, & Costa, 1998).

High-quality institutional resources generally are less common in more disadvantaged neighborhoods than in more affluent neighborhoods (e.g., Burchinal, Nelson, Carlson, & Brooks-Gunn, 2008), despite the fact that such resources may confer the most benefits to youth in more disadvantaged neighborhoods (e.g., Pettit, Bates, Dodge, & Meece, 1999; Small & McDermott, 2006). High-quality institutions are easier to develop and sustain in more advantaged neighborhoods that have the financial and organizational capacity to hire and retain competent staff (Leventhal et al., 2015). Resources of poor quality may do more harm than good to adolescents they serve, particularly for at-risk youth (e.g., Dishion, McCord, & Poulin, 1999).

Adolescents' engagement with neighborhood-based institutional resources—and resulting developmental outcomes—is also contingent on family and neighborhood social dynamics. The following sections review these contexts, describing their importance to youth development generally, how these conditions interact with neighborhood characteristics, and finally, how each context can promote adolescents' use of and success with neighborhood-based institutional resources.

The Importance of Parents

Although the neighborhood context clearly has a bearing on adolescent development, net of other factors that may be associated with families' selection into certain types of neighborhoods (i.e., endogeneity), the consequences of neighborhood characteristics for adolescents are relatively modest (e.g., Leventhal et al., 2015). Even given adolescents' tendency to spend more time out of the home compared with younger children, the family continues to be their most proximal context and among the most instrumental in adolescence, particularly early adolescence (McElhaney, Allen, Stephenson, & Hare, 2009). Research demonstrates that parents in more disadvantaged neighborhoods have the ability to shape

adolescents' behavior through practices such as warmth, support, firmness, communication and monitoring (Jarrett, 1999; Simons et al., 2002; Steinberg, 2001). Associations between neighborhood characteristics and adolescent development may be *mediated* by parenting characteristics—that is, neighborhood conditions may be linked with parenting, which is associated with adolescent conduct—or *moderated* by them—in other words, the "level" or quality of parenting can modify how neighborhood features are associated with adolescents' well-being. A discussion of mediation and various types of moderation follows.

Mediation. Neighborhood characteristics may be linked to parent and family functioning in addition to adolescent development (e.g., Franco, Pottick, & Huang, 2010; Guterman, Lee, Taylor, & Rathouz, 2009; Klebanov et al., 1994; Molnar, Buka, Brennan, & Earls, 2003). Accordingly, associations between neighborhood characteristics and adolescent development are, at least to some extent, transmitted through their parents. Parenting an adolescent in a disadvantaged neighborhood can be challenging, given the myriad threats to adolescent well-being (discussed earlier) that tend to be present in such neighborhoods, but these threats also may be unfavorably associated with parents' mental health and behavior directly. A variant of the family stress model (Conger & Donellan, 2007) suggests that characteristics common to disadvantaged neighborhoods, such as few employment opportunities and neighborhood violence, can cultivate emotional distress among parents, which may in turn diminish parents' feelings of efficacy and the quality of their parenting (Elder, Eccles, Ardelt, & Lord, 1995; Simons et al., 1996). Specifically, studies show that parents living in disadvantaged neighborhoods are more likely to use harsh parenting and have poor communication with their adolescents compared with parents in more affluent neighborhoods, which is associated with youth's aggressive behaviors (e.g., Furstenberg et al., 1999).

Moderation. In addition to serving a mediating role in the relationship between neighborhood disadvantage and adolescent development, parenting may interact with neighborhood conditions to modify the nature of their links with adolescent development. In other words, parenting can enhance or diminish the positive or negative effects of neighborhood characteristics. Informed by the risk and resilience perspective (Cicchetti, 2010; Proctor, 2006; Werner, 1995), in which neighborhood and parenting contexts may be considered potential risk or protective factors (Simons et al., 2002), three types of moderation between family and neighborhood contexts have been identified in the literature: amplification, compensation, and evaporation (e.g., Leventhal & Shuey, 2014). These types of moderation primarily will be discussed in terms of parenting strategies in comparatively disadvantaged neighborhoods, although there is research on moderation in more advantaged neighborhoods as well (e.g., Luthar & Latendresse, 2002).

Amplification refers to the combined influence of parenting and neighborhood conditions in the same direction, either positive or negative. Specifically, warm, attentive parenting and safe neighborhoods may together be favorably associated with adolescents' positive development more so than just one or the other would (Pettit, Bates, Dodge, & Meece, 1999). On the contrary, youth who are poorly monitored by their parents may have greater contact with neighborhood crime and disorder (Beyers, Bates, Pettit, & Dodge, 2003; Pettit et al., 1999), and subsequently may become involved in more antisocial and delinquent activities (Brody et al., 2001; Furstenberg et al., 1999). The *compensation* (or buffering) model suggests that parenting strategies that emphasize warmth and communication can protect against the potentially harmful characteristics of a disadvantaged neighborhood. For instance, adolescents whose parents monitor them closely—who have knowledge of their friends and whereabouts and enforce

curfews—are less exposed to neighborhood violence and disorder, making it less likely that they will commit antisocial acts than adolescents who are less closely monitored (Rankin & Quane, 2002). Of note, however, is the observation that parenting strategies such as open communication and monitoring may be less effective in protecting youth in more disadvantaged neighborhoods (Cleveland, Feinberg, & Greenberg, 2010). Finally, *evaporation* refers to circumstances in which links between positive parenting and adolescent development are diminished or overwhelmed by the neighborhood environment. In this case, even heavy monitoring cannot compensate for adverse neighborhood conditions such as violence (Simons et al., 2002).

However, many parents in disadvantaged neighborhoods are able to employ parenting strategies with the goal of protecting their adolescents from harm, especially younger adolescents, who generally are more receptive to parental control and engagement than are older adolescents (Walker & Furstenburg, 1994). For example, parents may use *preventive* strategies designed to minimize adolescents' exposure to neighborhood threats (e.g., violence), or *promotive* strategies to encourage their youth to engage with neighborhood assets (e.g., special programs or church groups; Elder et al., 1995). The following section details strategies that parents use to protect their adolescents from neighborhood crime and disorder and connect them to institutional resources.

Parenting Strategies for Engaging Youth with Neighborhood Institutional Resources

Although parents may prefer or attempt direct monitoring of their youth, those parents who work long hours or multiple jobs may face a tradeoff between family income and monitoring (Snyder & Sickmund, 2006). Parents in more disadvantaged neighborhoods sometimes use "brokerage" or "community-bridging" strategies to connect young adolescents

with neighborhood-based institutional resources (Jarrett, 1999; Kim & Schneider, 2005). In other words, they seek out programming, schools, and churches, among other resources, that can play the dual role of preventing youth engagement in antisocial behaviors and promoting positive development. Institutional resources may serve as a proxy for direct monitoring, particularly for younger adolescents, and can be both preventive and promotive: For instance, adolescents who are involved in after-school programming are "staying off the streets," that is, avoiding antisocial groups and activities, as well as potentially engaging with prosocial peers and adults, receiving homework help, and even learning new skills (Roth & Brooks-Gunn, 2000).

The extent to which parents are willing and able to employ strategies that encourage young adolescents' involvement in institutional resources depends on a number of factors, not least of which are the opportunities parents have to pursue and connect youth to these resources (i.e., social capital; Coleman, 1988; Walker & Furstenberg, 1994). Meyers and Jordan's (2006) "contextualized patterns of action" framework regarding parents' child care choices in more disadvantaged neighborhoods is helpful in describing the challenges of identifying and engaging with youth-serving resources. This framework assumes that people are rational actors, making informed decisions about the resources available to them. However, these rational choices must be considered within the constraints of individuals' contexts, including knowledge about the existence and quality of available resources, neighborhood norms regarding service use, and perceptions about the nature of parenting. In other words, "individual choices are understood as rational, but neither *entirely individual* (insofar as they affect and are influenced by social networks and structures), nor *fully informed and reflective choices* (insofar as they are guided by cultural routines which form the basis of much day-to-day action;" Meyers & Jordan, 2006, p. 60).

Parents make decisions about how to monitor or 'outsource' monitoring to institutions in their neighborhoods based on information about programs they receive from other neighborhood residents ('eco-cultural routines'; Lowe & Weisner, 2004), as well as more implicit neighborhood-based norms about what resources are appropriate to depend upon for monitoring and stimulating adolescents (Meyers & Jordan, 2006). In fact, families who have more informal social supports in their neighborhoods are more likely to seek more formal resources than are parents in neighborhoods with fewer supports (Attree, 2005). Both direct input from other residents and neighborhood norms can shape 'tacit cultural pathways', or individual beliefs about how to parent adolescents (Fuller, Holloway, & Liang, 1996). Although reliance on community members for information about what resources are available, accessible, and of sufficiently high quality is a useful heuristic for busy and resource-limited parents (Hofferth, Boisjoly, & Duncan, 1998), parents are only accurate in their decision-making inasmuch as their information is accurate (Meyers & Jordan, 2006). Even when parents are aware of available and high-quality resources in their neighborhoods, they may be reluctant to engage with them because of distrust of authority, perceptions that their adolescents' needs may not be met, or fear of being considered unable to parent adequately on their own (Attree, 2005). Parents' sense of efficacy in their parenting role also may have a bearing on efforts to connect adolescents to resources: Higher parenting efficacy is associated with more involvement in promotive activities (Elder et al., 1995). In sum, there are myriad structural, interpersonal, and individual obstacles that parents in disadvantaged neighborhoods face when seeking institutional resources for their adolescents (Mendez, Carpenter, LaForett, & Cohen, 2009).

Parents' willingness and ability to seek and secure resources for their adolescents, as well as the accuracy of their information about what resources are available and useful, have

implications for young adolescents' use of such resources. For instance, Coulton and Irwin (2009) found that adolescents whose parents were more involved in neighborhood activities and resources were more likely themselves to participate in available programming. However, neighborhood social dynamics out of parents' control may become increasingly important in adolescence and may contribute to young adolescents' choices regarding use of neighborhood resources as much as, or even more than, parents.

Neighborhood Social Dynamics

Direct interactions with parents are important for youth living in disadvantaged neighborhoods, but neighborhood social dynamics also have the potential to shape adolescent development for better or worse, driven in part by parental influences. Because adolescents tend to spend increasing amounts of time in their neighborhoods, neighborhood norms, especially around peer behavior, are thought to be more salient for adolescents than they are for younger children (Leventhal et al., 2009). According to collective socialization theory, neighborhood residents can influence adolescents' behaviors based on their own actions, attitudes, and values (Sampson & Groves, 1989). Specifically, the concept of collective efficacy describes the presence of social organizational resources that support collectively shared goals such as the desire to live in a safe neighborhood (Sampson, Raudenbush, & Earls, 1997).

Collective efficacy is composed of social cohesion—defined as the extent to which residents share values and norms and how willing they are to help one another, and informal social control, or residents' willingness to monitor others' behavior and to intervene when witnessing disruptive behaviors in the neighborhood. High collective efficacy can *buffer* against the unfavorable associations between neighborhood violence and disorder and adolescent development: Residents with shared values and goals may prevent youths' opportunities for

engaging in delinquent activities. Conversely, low collective efficacy may *amplify* associations with neighborhood risk factors, potentially allowing delinquent and criminal activities to take hold (Sampson et al., 1997). Various studies point to a link between low collective efficacy and adolescents' antisocial behavior at both the neighborhood and individual levels (e.g., Sampson, 1997; Zimmerman & Messner, 2011). In neighborhoods with lower collective efficacy, adolescents may feel unconnected to conventional society (Kingston, Huizinga, & Elliott, 2009); the adoption of unconventional norms is, in turn, associated with greater delinquency (Anderson, 1999).

A concept that intersects with collective efficacy is that of neighborhood disorder. Neighborhood disorder can be defined both physically (e.g., broken windows and poorly maintained roads) and socially (e.g., public drug dealing and prostitution; see Sampson & Raudenbush, 2004). Social disorganization theory proposes that signs of disorder are thought to be consequential for antisocial behaviors, as they provide observable cues that delinquent behaviors are prevalent and to some degree tolerated (Sampson, 1997). Although there is significant heterogeneity among low-income neighborhoods (Brody et al., 2001), more disadvantaged neighborhoods may be susceptible to disorder as a result of compromised structural and social resources (see Elo, Mykyta, Margolis, & Culhane, 2009). Neighborhood disorder and violence may mediate the relationship between neighborhood disadvantage and adolescent delinquency (Sampson, Morenoff, & Gannon-Rowley, 2002). Studies find that neighborhood disorder is associated with adolescents' exposure to criminal and antisocial individuals in their neighborhoods (e.g., Haynie, Silver, & Teasdale, 2006). In turn, adolescents exposed to neighborhood violence are more likely to commit violent acts themselves (Chauhan & Reppucci, 2009).

Other norms, behaviors, and attitudes may spread and reproduce themselves within disadvantaged neighborhoods. For instance, the proximity of peers engaging in problematic behavior is thought to increase the chances that other children from the same neighborhood will do the same. Harding's (2011) model of cultural heterogeneity suggests that children living in high-poverty neighborhoods are exposed to a wide range of cultural scripts, mostly mainstream ones, but also many unconventional variants. Accordingly, adolescents in these neighborhoods have a wider set of models to choose from than do their peers in more advantaged neighborhoods, increasing the likelihood that they will take part in deviant or antisocial behaviors.

On the contrary, as with protective parenting practices, favorable social dynamics can contribute to the prevention of antisocial behaviors, as well as the promotion of prosocial ones. High collective efficacy and norms encouraging neighborhood adults to intervene when they see youth participating in unfavorable activities can prevent adolescents' engagement in more serious delinquency, both through the action of being intervened upon (preventing the immediate threat) and through adolescents' understanding that residents will not tolerate deviant behavior (Sampson et al., 1997). Higher levels of collective efficacy, and especially social control, are associated with young adolescents' lower likelihood of antisocial, violent, and delinquent behaviors; moreover, adolescents in neighborhoods with greater collective efficacy are less likely to affiliate with deviant peers (e.g., Elliott, Wilson, Huizinga, Sampson, Elliott, & Rankin, 1996; Molnar, Miller, Azrael, & Buka, 2004; Sampson, Morenoff, & Raudenbush, 2005; Wickrama & Bryant, 2003). Greater collective efficacy also is implicated in favorable adolescent outcomes, including affiliation with prosocial friends (Elliott et al., 1996). Similarly, perceptions of neighborhood safety are associated with the promotion of adolescents' healthy behaviors,

including higher self-concept, self-efficacy, and school achievement (Bowen, Rose, Powers, & Glennie, 2008; Quane & Rankin, 2006).

Social Dynamics and Neighborhood Institutional Resources

Neighborhoods with high-quality resources available tend to be less disordered and have greater collective efficacy (Anderson et al., under review; Sampson, 2002). Research identifies associations between such supportive neighborhood social dynamics and young adolescents' active engagement with neighborhood institutional resources, including schools, nonprofit organizations, and faith institutions (Nash, 2002; Sampson 2012). Generally, adolescents may fare better in neighborhoods characterized by both high collective efficacy and accessible, high-quality institutional resources, compared with youth in neighborhoods with one or the other, but not both (in other words, the presence of collective efficacy tends to amplify favorable associations with neighborhood resources). Fauth and colleagues (2007) found that in nonviolent neighborhoods, adolescents' participation in organizations such as church groups protected against their substance abuse, suggesting that neighborhood safety may amplify the association between program participation and favorable adolescent development. The benefits of such social dynamics and resources are dynamic and bidirectional. For instance, youth with access to more neighborhood-based youth organizations may be exposed to little neighborhood violence because the presence of neighborhood organizations itself deters violent crime, in other words, because there *is* little violence (Gardner & Brooks-Gunn, 2009).

Of note, however, some scholars argue that adolescents' participation in neighborhood programs may facilitate their exposure to neighborhood violence and disorder. Youth who participate in programming may need to travel to and from program sites through the very neighborhoods to which these programs may seek to prevent exposure, with potentially

deleterious consequences. For example, research suggests that youth who participated in community-based clubs had greater depression and anxiety in violent neighborhoods than did youth who did not participate (Fauth, Roth, & Brooks-Gunn, 2007). It may be that accessibility of neighborhood institutions is of particular importance in more violent and disordered neighborhoods; that is, if young people and families can rely on nearby or collocated organizations, or reliable and safe transportation to access those organizations, they may have lower exposure to these neighborhood threats.

Conceptual Model

More disadvantaged neighborhoods tend to have features such as violence and disorder that may shape adolescents' development in maladaptive ways, that is, toward a pattern of antisocial behaviors. Individual characteristics (e.g., genetics), normative developmental milestones (e.g., adolescent brain development facilitating risk-taking and reward-seeking behavior), and contextual factors earlier in childhood (e.g., maltreatment) may also have a bearing on adolescents' behavior profiles. However, heterogeneity exists even in adolescents with the most difficult backgrounds and in the most disadvantaged neighborhoods (e.g., Brody et al., 2001), and adolescent involvement in high-quality neighborhood-based institutional resources (e.g., after-school programming, church groups) may protect against the potential developmental challenges of living in a more disadvantaged neighborhood.

Program participation can prevent exposure to neighborhood violence and disorder, as well as promote positive development through skill building, interaction with conventional or prosocial role models, and affiliation with prosocial peers (e.g., Eccles & Templeton, 2002; Komro et al., 2011; Lerner et al., 2005; Schorr, 1997; Steinberg et al., 2004). On the one hand, youth can engage with resources only if they are available and accessible, and they will benefit

from these resources only if they are of high quality. On the other hand, not engaging with institutional resources, or engagement in poor-quality resources, may encourage antisocial and delinquent behavior during unstructured free time (Brown & Larson, 1999; Crean, 2012; Dishion et al., 1999). Depending on their characteristics, contributions from parents and neighborhood residents (via social dynamics) may foster or discourage involvement in available institutional resources.

In short, my conceptual model stipulates that parenting strategies and neighborhood social dynamics interact with the availability, accessibility, and quality of neighborhood institutional resources to guide adolescents' use of these resources (see Figure 1). For instance, neighborhood social dynamics may shape parenting practices and, consequently, adolescent risk behaviors. Parents in disordered neighborhoods are more likely to use inadequate or ineffective parenting practices compared with parents in less disordered neighborhoods (i.e., negative amplification), which in turn may contribute to adolescents' antisocial behaviors (Chung & Steinberg, 2006). On the contrary, parental monitoring tends to be higher in neighborhoods with greater collective efficacy (i.e., positive amplification), which is associated with adolescents' greater prosocial behavior and less antisocial behavior (Rankin & Quane, 2002). These two contexts clearly interact bidirectionally and dynamically in the association with adolescents' use of institutional resources, and ultimately, their developmental outcomes.

Current Study

The primary goal of this dissertation is to test portions of the described conceptual model elucidating the potential role of neighborhood-based institutional resources in promoting positive behaviors in young adolescents who display antisocial behaviors. My conceptual model describes the importance of various aspects of institutional resources, specifically their

availability, accessibility, and quality. However, I only examine their availability, both because of the data available and because it is the most fundamental aspect of whether institutional resources can be used—as noted earlier, programs clearly cannot be high- or low-quality and accessible or inaccessible if they are not even available. I also am specifically considering youth-serving organizations rather than all institutional resources in order to focus in on resources more likely to be relevant to—and utilized by—young adolescents. In addition, I will test associations with various parenting characteristics, but will not look specifically at strategies parents may use to connect their adolescents to neighborhood resources due to lack of available data on these parenting strategies. It is equally—if not more—important to understand how general parenting practices may influence youth's decisions to engage in structured activities given that "brokering" practices described earlier are extremely time-consuming and difficult for many parents to achieve (Jarrett, 1999). Despite the limitations in testing my entire conceptual model, the aspects that I propose examining have the potential to enhance existing research in important ways. Specifically, I plan to explore several related lines of inquiry:

(1) Is the availability of neighborhood youth-serving organizations (YSOs) associated with adolescents' differential activity involvement as a function of their behavior profiles? The presence of high-quality neighborhood institutions is thought to foster positive adolescent outcomes such as educational achievement, good mental and physical health, and affiliation with prosocial peers (Card & Payne, 2002; Newacheck et al., 1996; Quane & Rankin, 2006). However, more disadvantaged neighborhoods tend to have fewer resources for young people, meaning that there are fewer opportunities for youth in these neighborhoods to participate in structured activities (Jencks & Mayer, 1990). Adolescents without structured activities to occupy their free time may be more likely to engage in antisocial behaviors than those youth who

participate in such activities (Osgood & Anderson, 2004). I explore associations between the availability of neighborhood-based YSOs and adolescents' engagement with these resources, specifically structured activities. Scholars have used a variety of methods to assess availability of resources in disadvantaged neighborhoods (e.g., Odgers et al., 2012; Small, 2006), but less is known about how the availability of YSOs is associated with adolescents' use of them. Of particular interest is whether adolescents with antisocial behavior profiles—who could benefit considerably from intervention—use these resources. I anticipate that adolescents living in neighborhoods with more institutional resources available will be more likely to participate in YSOs in their neighborhood. However, I expect that regardless of YSO availability, adolescents with more antisocial profiles will be less likely than their more conventional peers to engage with neighborhood resources. I also anticipate that girls and younger adolescents are more susceptible to parental encouragement to participate in activities, and thus will be more likely than their peers to participate in activities as a function of YSO availability.

(2) How is adolescents' participation in structured activities associated with stability or change in their antisocial behavior profiles? As noted previously, engagement with neighborhood-based institutional resources is associated with positive youth outcomes. It is important, however, to understand *how* engagement with these resources is associated with adolescents' behavior over time. Adolescents' participation in structured activities may *prevent* unstructured time and affiliation with deviant peers, as well as *promote* exposure to prosocial peers and role models and encouraging skill building (Gottfredson et al., 2004), thereby potentially contributing to changes in adolescents' behavior profiles over time from more antisocial to less antisocial. Youth's antisocial behaviors can consist of multiple types of behaviors, from minor aggression in the home (e.g., yelling) to property damage to more serious

violence intended to harm. Adolescents with different behavior profiles may engage with resources in different ways, potentially leading to divergent trajectories over time. There also may be gender and age differences in how adolescents' behavior profiles change in relation to their activity participation: In particular, boys and older adolescents be more sensitive than girls and younger adolescents to the preventive and promotive benefits of participating in structured activities due to their general tendency toward more antisocial behaviors (e.g., Fagan, Van Horn, Antamarian, & Hawkins, 2011; Mahoney, 2003); thus, I expect to see a greater likelihood of profile change among boys and Cohort 12 youth who participate in activities.

(3) Are the associations between adolescents' activity participation and stability or change in their behavior profiles further modified by family dynamics or collective efficacy? In addition to availability of YSOs, other individual and contextual factors in the family and the neighborhood may be associated with the extent to which adolescents' activity participation relates to their behavior trajectories. For instance, exposure to certain parenting strategies and family dynamics may moderate associations between adolescents' activity participation and their behavior trajectories. Monitoring—parental control, as well as knowledge of adolescents' whereabouts and peer groups—is thought to foster positive outcomes, including engagement with institutional resources (e.g., Elder, 1995; Pettit et al., 1999). Parents living in more disadvantaged neighborhoods are more likely to have poorer communication and more conflict with their adolescents than are parents in more affluent neighborhoods, which is associated with adolescents' lower program engagement as well as more aggressive behaviors (Brody et al., 2001; Furstenberg et al., 1999). I expect that adolescents who participate in neighborhood activities and have high levels of parental monitoring and/or low family conflict will be more likely to develop positive behavior trajectories, and that this association will be stronger for more

antisocial youth (i.e., more antisocial youth will be more likely to transition from a more antisocial behavior profile to a less antisocial one). I hypothesize that these associations will be stronger among boys and older adolescents, given their higher propensity for antisocial behaviors compared with girls and younger adolescents.

Similarly, adolescents' activity participation may be differentially associated with their behavioral trajectories as a function of neighborhood collective efficacy. As noted earlier, adolescents living in neighborhoods with greater collective efficacy may feel more connected to conventional society and have more positive outcomes. Conversely, lower collective efficacy is associated with adolescents' exposure to criminal and antisocial individuals in their neighborhoods, which in turn is associated with a greater likelihood of committing delinquent acts themselves (Chauhan & Reppucci, 2009; Haynie, Silver, & Teasdale, 2006). I hypothesize that low collective efficacy may diminish (or "evaporate") the potential benefits of participation in structured activities and be associated with more antisocial behavior trajectories. On the contrary, greater collective efficacy may enhance the benefits of participation and be associated with trajectories resulting in less antisocial behavior profiles. I expect that these unfavorable associations will be stronger for girls and younger adolescents, and that the favorable relationships will be stronger boys and older adolescents, given their likely greater exposure to the neighborhood.

CHAPTER 2: METHODS

To test my research questions, I conducted secondary data analysis using the Project on Human Development in Chicago Neighborhoods (PHDCN), a multilevel, longitudinal study designed to explore the significance of the neighborhood context for individual development (Sampson, 2012). In this section, I describe each component in turn, followed by a summary of my sample and measures of interest, and finish by outlining my analytic plan.

Study Design

PHDCN consists of a longitudinal Cohort Study, designed to collect data on individual children and their families, and a Community Survey, wherein independent data were collected on social processes—among other variables—at the neighborhood level.

Cohort Study

Participants were drawn from a multistage probability sample designed to capture the diversity of neighborhoods in Chicago. At the first stage, 1990 U.S. Census data for the 847 census tracts comprising the city of Chicago were combined to create 343 neighborhood clusters (NCs), which include two to three geographically contiguous and relatively homogenous census tracts (approximately 8,000 residents per NC). Next, a stratified probability sample of 80 NCs cross-classified by racial/ethnic composition (seven categories including homogeneous and heterogeneous make-ups) and socioeconomic status (SES; high, medium, and low) was drawn from the 343 NCs. The aim was to have an equal number of NCs in each of the 21 strata that varied by racial/ethnic composition and SES; however, three of the 21 strata were empty—low SES/predominately White American, high SES/predominately Latino, and high SES/mixed Latino and Black neighborhoods. Within the 80 NCs, approximately 1,000 children falling within each of seven age cohorts (birth, 3, 6, 9, 12, 15, and 18 years) were sampled from

randomly selected households (N = 6,226). Interviews were conducted in the home three times over a six-year period (Wave 1 in 1995/6, Wave 2 in 1998/9, and Wave 3 in 2000/1). Of the families seen at Wave 1, the response rate at Wave 2 was 86% and 77% at Wave 3 (Martin & Schoua-Glusberg, 2002).

Community Survey

The Community Survey was designed to include a representative sample of households within each of the 80 NCs, with sample sizes large enough to create reliable NC measures (average of 50 interviews per NC; Raudenbush & Sampson, 1999; Sampson et al., 1997). Although conducted concurrently with the first wave of the Cohort Study in 1994/5, the Community Survey was given to an independent sample (N = 8,782). A three-stage sampling procedure was used: At the first stage, city blocks were sampled within each NC; at the second stage, dwelling units were sampled within blocks; and at the third stage, one adult resident (18 or older) was sampled within each selected dwelling unit (75% response rate). Respondents were interviewed in their homes and asked about various aspects of their neighborhoods.

Sample

Data from participants in the nine- and 12-year cohorts were used to investigate the current study's research questions. Using two cohorts allowed me to examine antisocial behavior profiles, family dynamics, and neighborhood characteristics at two points in or around early adolescence. The total sample between these two cohorts is composed of 1,646 youth, 50% in each cohort. Fifty-one percent of participants were male. Forty-six percent identified as Hispanic/Latino, 36% as Black, 14% as White, and 4% as another race/ethnicity.

The majority of primary caregivers (83%) were the adolescents' biological mothers (all caregivers will be called "mothers" from this point on) and were, on average, 37.6 (SD = 7.6)

years old at Wave 1. Fifty-eight percent were married at Wave 1. In addition, 63% had graduated from high school by the first wave, and 59% were employed at the time of the interview. Thirty-one percent of mothers had received public assistance within the year prior to the Wave 1 interview. An average of 20.6 (*SD* = 9.5) adolescents lived in each NC (referred to as "neighborhood" from here on). Thirty-four percent of adolescents changed neighborhoods between Waves 1 and 2, and 42% changed neighborhoods between Waves 1 and 3. Table 1 provides a list of demographic characteristics with comparisons by cohort.

Measures

All individual- and family-level measures were drawn from interviews conducted with adolescents and their mothers in the Cohort Study. Neighborhood characteristics were drawn from the Community Survey.

Adolescent, Maternal, and Family Background Characteristics

To address selection into neighborhoods, I included a range of adolescent, maternal, and family characteristics likely to be associated with choice of neighborhood residence as covariates in all analyses. Adolescent characteristics included gender (0 = girl; 1 = boy); age (in years) at Wave 1, and race/ethnicity (two dummy codes for Black and Hispanic, with White or other as omitted referent). Maternal characteristics assessed at Wave 1 consisted of age (in years), immigrant status (no= 0; yes = 1), educational attainment (two dummy codes for "less than high school" and "greater than high school," with high school completion as omitted referent), current marital status (not married = 0; married or cohabiting = 1), current employment status (unemployed = 0; employed = 1), receipt of public assistance in the past year (no assistance = 0; assistance = 1), and maternal depression (no = 0; yes = 1). I also included an indicator variable of whether families changed neighborhoods between Wave 1 and Wave 3 (no = 0; yes = 1).

Adolescent Antisocial Behaviors

To develop adolescents' behavior profiles, I used measures of aggressive, antisocial, and delinquent behaviors from two separate instruments and from two reporters (parents and adolescents). Both instruments were administered at all three waves.

Child Behavior Checklist. The Child Behavior Checklist (CBCL; Achenbach, 1991) is a parent-report scale that identifies internalizing and externalizing behaviors of children and youth ages 6-18. I used the aggressive (11 items) and delinquent (eight items) subscales from the externalizing scale to develop adolescents' behavior profiles. Abbreviated versions of the subscales were used to match the Waves 2 and 3 measures, which had been shortened from 28 total items to 19 due to redundancy with other measures used in the study ($\alpha_{1\text{-}3} = 0.83 – 0.87$). Parents rated the child's behavior during the six months prior to the interview on a three-point scale from "not true" (0) to "often true" (2). Sample items from the aggressive subscale include "screams a lot" and "destroys things belonging to others", and items from the delinquent subscale include "lies or cheats" and "uses obscene language". Higher scores indicate more externalizing problems. (See Appendix A for a complete list of subscale items).

Self Report of Offending. The Self Report of Offending (SRO; Huizinga, Esbensen, & Weiher, 1991; Loeber, Stouthamer-Loeber, Van Kammen, & Farrington, 1989) is an adolescent-report instrument designed to assess the extent of adolescents' antisocial and delinquent behaviors. Participants reported on whether they had ever engaged in a variety of behaviors (no = 0; yes = 1), such as whether respondents had ever "purposely damaged or destroyed property that did not belong to you" and "attacked someone with a weapon."

Because items for the SRO range in seriousness and type (i.e., property vs. violent acts), in accordance with procedures laid out by Raudenbush, Johnson, and Sampson (2003), I split

items into property offenses and violent offenses and conducted Rasch models for each subscale at each wave. The Rasch model is intended to assign weights to binary items, with more serious items (i.e., those committed by fewer participants) more heavily weighted. The weighted item values were then summed into property (six items) and violent (nine items) subscales, with higher scores indicating more antisocial behaviors ($\alpha_{1\text{-}3} = 0.63 – 0.69$). Appendix B provides a list of items included in each subscale.

Adolescents' Activity Participation

At Wave 2, adolescents reported on their participation in neighborhood-based formal and informal activities. Adolescents completed a School Interview, during which they indicated whether they were involved in organized activities, including sports, church groups, and community centers inside or outside of school (no = 0; yes = 1; Furstenberg et al., 1999). Appendix C lists the activities included in the School Interview.

Family-level Variables

Measures of parental monitoring and family dynamics were drawn the Home Observation for Measurement of the Environment (HOME; Caldwell & Bradley, 1984; Selner-O'Hagan & Earls, 1994; Selner-O'Hagan, Leventhal, Brooks-Gunn, & Earls, 1997) Inventory and the Family Environment Scale (FES; Moos & Moos, 1994), respectively. All measures were completed at Wave 1 by adolescents' mothers.

Parental monitoring. The parental monitoring measure is composed of 24 items about parental control (e.g., curfew) and knowledge of friends and whereabouts. The measure includes questions such as "Does [subject] have a certain time he/she has to be home on school nights?" and "How much time can [subject] spend in public places without an adult (more than one

hour)"? Items were coded yes (1) or no (0); higher scores indicated greater parental monitoring ($\alpha = 0.65$). Appendix D provides items for the parental monitoring scale.

Family conflict. The family conflict subscale of the FES consists of nine items asking whether a variety of types of conflict were true (1) or false (0) of their family. The subscale includes items such as "family members sometimes hit each other" and "family members sometimes get so angry they throw things". Items were coded yes (1) or no (0), except for four items, which were reverse coded so that higher scores indicated greater family conflict ($\alpha = 0.65$). See Appendix E for family conflict items.

Neighborhood Characteristics

All neighborhood characteristics were measured at the NC level, described earlier. Community Survey measures were aggregated from the individual to neighborhood level using Empirical Bayes estimates from three-level (items within individuals within neighborhoods) rating analyses, which provide good multi-level reliability and validity (Raudenbush & Sampson, 1999).

Census variables. Neighborhood structural characteristics, including *immigrant concentration* (proportion of foreign-born residents) and *residential stability* (proportion of residents who lived in the same home at least five years previously) were both assessed in the 1990 US Decennial Census and used as covariates in all analyses. In addition, *concentrated poverty*, a combination of census variables measuring the poverty rate, percent of residents receiving public assistance, percent of female-headed families, and percent of unemployed residents, also was used as a covariate. The measure was created using factor analysis of these variables for prior work with the PHDCN data (Leventhal, Xue, & Brooks-Gunn, 2006).

Neighborhood disorder. Data from the Community Survey were used to assess neighborhood disorder (Sampson & Raudenbush, 2004). The disorder scale included seven items (e.g., "How much of a problem is graffiti on buildings and walls?") and respondents rated each item on a three-point scale, from "not a problem" (0) to "a big problem" (2). Higher scores indicated greater neighborhood disorder. See Appendix F for items from the neighborhood disorder scale.

Availability of youth-serving organizations. Participants in the Community Survey were asked about the presence of six types of organizations that served children and youth, such as recreation programs and mental health services (Leventhal & Shuey, 2014). See Appendix G for complete list of items.

Collective efficacy. The collective efficacy measure was composed of two subscales, social cohesion and social control (Sampson et al., 1997). The social cohesion scale included 5 items assessing how strongly participants agreed to statements such as "people in this neighborhood can be trusted". Respondents rated items for each of these measures on a five-point scale from "strongly agree" to "strongly disagree." The informal social control scale contained five scenarios in which neighborhood residents may intervene (e.g., "if children were skipping school and hanging out on a street corner"), and respondents indicated the likelihood of each scenario on a five-point scale, from "very likely" to "very unlikely". The correlation between social cohesion and social control is fairly high ($r = 0.79$), suggesting that they hang together as a single construct. Appendix H contains a complete list of scale items.

Analytic Plan

A number of statistical procedures were executed in service of addressing my central research questions. Unless otherwise noted, all analyses were performed in Stata 14 (StataCorp,

2014) and Mplus Version 7 (Muthén & Muthén, 2015), and will be described in order of the research questions they addressed. All continuous Level 1 variables were grand mean centered, and continuous Level 2 variables were group mean centered.

Before running my principal analyses, I took steps to address missing data, an issue common to multilevel, longitudinal studies. To reduce bias associated with missing data due to item non-response and study attrition—a particular problem in this study because antisocial adolescents are more likely to drop out of research studies—I used the Amelia multiple imputation package (Honaker, King, & Blackwell, 2012) in R 3.2.3 to create 20 complete data sets for all analyses (Enders, 2010). Multigroup models by gender and cohort were run as follow-ups to each model described below.

Research Question 1: Do Associations between Availability of Institutional Resources and Adolescents' Activity Participation Differ as a Function of Behavior Profile?

First, to prepare for answering my first research question, I took advantage of the neighborhood-based sampling framework to conduct main effects models using hierarchical (adolescents within neighborhoods) linear regression analyses to test the association between availability of neighborhood institutional resources and adolescents' activity participation. I first ran a basic model with availability of youth-serving organizations predicting activity participation, accounting for neighborhood cluster. I then added adolescent, maternal, and family covariates at Level 1 and neighborhood covariates at Level 2 to the model (see *Measures* on page 34). For significant results, odds ratios were reported for logistic regressions, and Cohen's *d* was reported for linear regressions. Cohen's *d* calculates the standardized difference between two means (e.g., the mean availability of YSOs for youth who participated in activities versus those who did not). Higher values indicate a greater effect; a rule of thumb used

frequently (with the recognition that cutoffs are arbitrary) is that a value of 0.2 is a small effect, 0.5 is medium, and 0.8 is large (e.g., Durlak, 2009).

Next, I explored whether this association varied as a function of adolescents' profile of antisocial behaviors. To determine participants' profile membership, I conducted a latent profile analysis (LPA) following procedures laid out by Nylund (2007), Collins and Lanza (2010), and Johnson (2012). In the case of this study, LPA is an approach preferable to latent class analysis because it allows for the creation of groups that may be qualitatively, rather than simply quantitatively, different. For instance, one may find that participants in the sample of interest load into three profiles: One profile consisting of youth who primarily committed acts against property, another consisting of adolescents who committed mostly violent acts or acts against people, and a third composed of youth who did not commit either type of act in any discernable pattern. This method is stronger than simply aggregating the number of aggressive, antisocial, or delinquent acts because it specifies *how* the groups are different, as opposed to *the extent to which* they differ.

Procedures for conducting a latent profile analysis. In order to determine the most appropriate profiles for the sample, a number of measurement models specifying how well the indicators relate to the latent variable must be run. Collins and Lanza (2010) suggest starting with a model that specifies two profiles, and ending with one that specifies one profile more than what you expect the ideal number to be. As such, I ran models testing two to five profiles.

The optimal number of profiles is determined via tests of model fit as well and the general interpretability of the profiles. Entropy, Bayesian Information Criterion (BIC; Schwarz, 1978), the bootstrap likelihood ratio test (BLRT; McLachlan & Peel, 2001), and the Lo-Mendell-Rubin likelihood test (LMR; Lo, Mendell, & Rubin, 2001) are typically examined to help

determine the best number of profiles. I used these four fit statistics, as well as the sample size adjusted BIC [SaBIC]. I also compared the the interpretability of models with different numbers of profiles.

Profile membership as moderator. After the behavior profiles were created, I first ran main effects models without covariates, then ran them with covariates, to estimate the contribution of family and neighborhood selection variables to profile membership. I then ran interaction models (with covariates included) testing profile membership as a moderator of the association between institutional resource availability and youth's activity participation. I created a dummy variable for each profile, omitting one profile as the referent group. Next, to determine whether there were gender or age differences in the observed interactions, I re-ran the interaction model with multi-group comparisons of boys and girls, and of Cohort 9 and Cohort 12. Simple slopes and regions of significance were calculated for all significant interaction models to determine the nature of the interactions (Preacher, Curran, & Bauer, 2006).

Research Question 2: Does Activity Participation Predict Stability or Change in Adolescents' Behavior Profile Membership?

To explore my second research question regarding stability or change in adolescents' behavioral trajectories, I executed latent profile transition analysis (LPTA; Collins & Lanza, 2010; Nylund, 2007; Johnson, 2012) between waves to assess whether adolescents moved from one behavior profile to another over time (e.g., highly delinquent profile to less delinquent profile) as a function of their participation in structured activities.

To conduct the LPTA, I first conducted LPAs at Wave 3 to determine the optimal number of profiles at that time point. Next, I estimated my LPTA model by calculating which participants remained in a profile similar to their Wave 1 profile and which participants

transitioned into a profile with different characteristics. I ran descriptive statistics and difference tests on all profiles at each time point to determine how the profiles differed on individual-, family-, and neighborhood-level background characteristics.

I then ran logistic regression models with stability/change in profile membership (no change = 0; change = 1) as the outcome, first for the entire sample, and then as a multi-group model to determine whether there were differences in stability or change for different profiles.

Research Question 3: Is the Association Between Activity Participation and Stability or Change in Adolescents' Behavior Profile Membership Moderated by Family Dynamics or Neighborhood Collective Efficacy?

Finally, I conducted two-way interaction analyses to investigate my final research questions regarding the potential moderating role of parenting dynamics or neighborhood collective efficacy in the association between activity participation and stability or change in profile membership. I first ran separate interaction models testing parental monitoring and family conflict as moderators of the association between adolescents' activity participation and stability/change in their behavior profiles. I then ran cross-level two-way interactions between collective efficacy and activity participation to determine their role in profile stability or change, with follow-up tests for regions of significance as previously discussed.

CHAPTER 3: RESULTS

Analyses of relationships between background variables were conducted for individual-, family-, and neighborhood-level characteristics. Pairwise comparisons (i.e., correlations, chi-squares, and t-test/ANOVA) were generally in the expected directions, given the sampling framework. Tables 2 and 3 provide correlations among individual/family and neighborhood variables, respectively. Table 4 provides correlations among individual-, family, and neighborhood-level characteristics of interest. Correlations were generally in the expected directions. (Because of the Rasch weights on violent and property offenses, correlations between those scales and the aggression/delinquency scales are negative, but they were moderate and significant.)

Addressing the Central Research Questions

Unless otherwise specified, all models run to address the research questions were two-level (adolescents within NCs) regressions and included covariates, as described in the Methods section (see *Measures* for complete list of individual-, family-, and neighborhood-level covariates).

Research Question 1: Is the availability of neighborhood youth serving organizations associated with adolescents' differential activity participation as a function of their behavior profiles?

I first ran main effects linear regression model exploring the association between availability of neighborhood youth-serving organizations in adolescents' neighborhoods and their activity participation. Results of this model revealed that, net of covariates, more neighborhood institutional resources were associated with adolescents' greater activity participation ($\beta = 0.29$, p=.009; $d = 0.24$). Multigroup models by gender revealed that this

association was significant among boys (β = 0.43, p = .008; *d* = .30), but not girls. Moreover, the association was observed specifically for participants in Cohort 9 (β = 0.34, p=.044; *d* = 0.29), but not in Cohort 12 (see Table 5). However, when subgroup models by cohort were run only on the male sample, the association between availability of youth-serving organizations and adolescents' activity participation was significant for boys in Cohort 12, but not boys in Cohort 9 or girls in either cohort.

Profiles of antisocial behaviors at Wave 1. To address the first research question, behavior profiles had to be identified in the sample. Latent profile analyses examining solutions from two to five profiles revealed that the four-profile solution fit the data best at Wave 1 (see Table 6 for model fit statistics for each Wave 1 profile solution).

Although the two-profile solution had lower entropy than the three- or four-profile solutions, the four-profile solution was the best fit to the data based on all other criteria. Figure 2 provides a graphical representation of the four profiles. Mean aggression and delinquency scores were very similar across profiles. Violent and property offenses differed more than aggression and delinquency, particularly the property offenses subscale. Below is a description of each profile, including proportion of the total sample and breakdowns by gender and cohort.

- *Overt offenders* (OOs) were highest in aggression and delinquency (mother report), and second-highest in violent and property offenses (adolescent report). Relative to other profiles, mothers and adolescents in this profile had similar notions of adolescents' antisocial behaviors.
    - 4.4% of sample (*n* = 72)
    - *Gender:*
        - 43% female

        - 57% male
    - *Age/cohort:*
        - Mean age 11.1*(1.5)* years
        - 36% Cohort 9
        - 64% Cohort 12
    - *Race/ethnicity:*
        - 39% Black
        - 46% Hispanic
        - 15% White or other race/ethnicity
    - *Maternal/family characteristics:*
        - Mother mean age 37.9*(7.7)* years
        - 61% biological mother
        - 24% depressed
        - 34% immigrants
        - 50% at least high school diploma
        - 49% married
        - 63% employed
        - 39% receiving public assistance
- The *out-of-home antisocial* (OA) group was lower than the OOs on aggression and delinquency scores, but higher on property and violent offense scores, suggesting that mothers might not know about adolescents' antisocial behaviors.
    - 1% of sample (n = 17)
    - *Gender:*

        - 53% female
        - 47% male
    - *Age/cohort:*
        - Mean age 11.9*(1.1)* years
        - 12% Cohort 9
        - 88% Cohort 12
    - *Race/ethnicity:*
        - 47% Black
        - 32% Hispanic
        - 18% White or other race/ethnicity
    - *Maternal/family characteristics:*
        - Mother mean age 37.6*(5.6)* years
        - 65% biological mother
        - 18% depressed
        - 41% immigrants
        - 71% at least high school diploma
        - 41% married
        - 75% employed
        - 18% receiving public assistance
- Scores for the *non-antisocial* (NA) group were very low and fairly stable across measures. This group might be considered the "normative" group.
    - 78.2% of sample (*n* = 1,287);
    - *Gender:*

        - 50% female (*n* = 645)
        - 50% male (*n* = 642)
    - *Age/cohort:*
        - Mean age 10.5*(1.5)* years
        - 56% Cohort 9 (*n* = 717)
        - 44% Cohort 12 (*n* = 570)
    - *Race/ethnicity:*
        - 34% Black
        - 48% Hispanic
        - 18% White or other race/ethnicity
    - *Maternal/family characteristics:*
        - Mother mean age 37.4*(7.6)* years
        - 65% biological mother
        - 15% depressed
        - 44% immigrants
        - 53% at least high school diploma
        - 60% married
        - 58% employed
        - 30% receiving public assistance
- The *semi-delinquents* (SDs) had fairly stable scores, with aggression and delinquency scores similar to Profile 3 but violent and property offense scores somewhat higher.
    - 16.4% of sample (*n* = 270);
    - *Gender*

        - 45% female
        - 55% male
    - *Age/cohort:*
        - Mean age 11.3*(1.4)* years
        - 30% Cohort 9
        - 70% Cohort 12
    - *Race/ethnicity:*
        - 43% Black
        - 38% Hispanic
        - 19% White or other race/ethnicity
    - *Maternal/family characteristics:*
        - Mother mean age 38.9*(8.1)* years
        - 25% depressed
        - 63% biological mother
        - 31% immigrants
        - 57% at least high school diploma
        - 46% married
        - 60% employed
        - 36% receiving public assistance

Table 7 provides descriptive statistics for each profile and results of difference tests among profiles.

Next, two-level (adolescents within NCs) logistic regression models were run to determine whether there were associations between membership in any of the four profiles and

adolescents' activity participation. Each profile was tested individually against the rest of the sample. Main effects models were run with and without covariates to determine the effect of selection variables on the associations, and by subgroup to test for gender and cohort differences. In other words, each model was run ten separate times: For models both with and without covariates, analyses were run on (1-2) the full sample, (3-4) by gender, (5-6) by cohort, and (7-10) twice by gender and cohort (i.e., model run by cohort on only male sample, then by cohort on only female sample). As a caveat, cell sizes for the OO and OA groups were very small, and main effects and, in particular, moderation and subgroup models should be interpreted with caution.

No significant associations emerged for any of the profile models (with or without covariates) run on the full sample. However, membership in the OO profile positively predicted activity participation among boys ($\beta = 0.83$, $p = 0.015$; odds ratio = 1.25), for Cohort 9 ($\beta = 1.25$, $p = 0.008$; odds ratio = 3.48), and among girls in Cohort 12 ($\beta = -1.29$, $p = 0.044$; odds ratio = 0.27. Each of the subgroup models was significant in the models with covariates, but not in the models without covariates, suggesting that it may not have been adolescents' antisocial behaviors per se driving their activity participation, but also characteristics including race/ethnicity (Black $\beta = -0.52$, $p = 0.035$ for boys; odds ratio = 0.60, and $\beta = -0.73$, $p = 0.006$ for Cohort 9; odds ratio = 0.48; Hispanic $\beta = -0.69$, $p = 0.001$ for boys; odds ratio = 0.50; and $\beta = -1.08$, $p = 0.000$ for Cohort 9; odds ratio = 0.34; and $\beta = -0.83$, $p = 0.013$ for girls in Cohort 12; odds ratio = 0.44) and maternal education (at least some college; $\beta = 1.11$, $p = 0.00$ for boys; odds ratio = 3.02; and $\beta = 0.76$, $p = 0.002$ for Cohort 9; odds ratio = 2.13). The association did not hold for boys in Cohort 9.

Antisocial behavior profiles as moderators. Interaction analyses were conducted to determine whether membership in any of the four ASB profiles moderated the association between presence of neighborhood YSOs and adolescents' activity participation (see Table 8). First, membership in the OO group did not moderate this association for the entire sample, for either gender, or for either cohort (with or without covariates). Second, membership in the OA profile moderated the association between presence of neighborhood institutional resources and activity participation among boys (β = -4.31, p = 0.003; odds ratio = 0.01) but not among girls, such that male OAs were less likely to participate in activities than their NA peers but only when availability of YSOs was high (+1*SD*; see Figure 2). No cohort differences were found.

Third, interaction models examining membership in the NA group indicated that it significantly moderated the association between presence of neighborhood institutional resources and adolescents' activity participation (β = 0.61, p = 0.007; odds ratio = 1.84), such that NAs were more likely than their non-NA peers to participate in activities if YSOs were more plentiful (see Figure 3), specifically among girls (β = 0.83, p = 0.008; odds ratio = 2.30). In addition, there was a significant interaction between membership in the NA profile and presence of YSOs on activity participation for Cohort 12 (β = 0.97, p = 0.000; odds ratio = 2.63) such that more YSOs were associated with greater likelihood of activity participation among NAs compared with other profiles. This association also held for girls in Cohort 12 (β = 0.92, p = 0.004; odds ratio = 2.51).

Finally, membership in the SD profile significantly moderated the association between availability of YSOs and activity participation (β = -0.60, p = 0.015; odds ratio = 0.58) such that SDs had a lower likelihood of activity participation compared with their peers in other profiles, but only in the context of more YSOs (see Figure 4).

Research Question 2: How is adolescents' activity participation associated with stability or change in their behavioral profiles?

My second research question addresses intraindividual change in adolescents' profiles of antisocial behavior from Wave 1 to Wave 3, and the extent to which those changes can be attributed to their activity participation.

Profiles of antisocial behaviors at Wave 3. LPAs were conducted to determine the number of behavior profiles that best fit the data at Wave 3. As with the LPA conducted at Wave 1, a four-profile solution emerged as the most appropriate fit to the data. Table 9 provides fit statistics for two- to five-profile solutions for the Wave 3 sample. Although the five-profile solution provided better AIC, BIC, and SaBIC numbers, the LMR p-value was non-significant, in contrast to the four-profile solution's LMRs. Figure 5 provides a graphical representation of the four profiles, and Table 10 provides descriptive statistics for each profile.

- The *semi-delinquents* (SD3) group was fairly similar to (although somewhat less antisocial than) the SD profile from Wave 1, with mean violent and property offenses scores slightly higher than aggression and delinquency scores and the property offenses score a bit higher than the violent offenses score.
    - 8.9% of sample (n = 146);
    - *Gender:*
        - 44% female
        - 56% male
    - *Age/cohort*
        - Mean age 10.7*(1.6)* years
        - 47% Cohort 9

        - 53% Cohort 12
    - *Race/ethnicity:*
        - 44% Black
        - 39% Hispanic
        - 17% White or other race/ethnicity
    - *Maternal/family characteristics:*
        - Mother mean age 37.7*(8.0)* years
        - 65% biological mother
        - 27% depressed
        - 35% immigrant
        - 43% at least high school diploma
        - 46% married
        - 54% employed
        - 42% receiving public assistance
- The *property only* (PO) profile had a high property offenses score and relatively low scores on all other scales.
    - 2.1% of sample (*n* = 35);
    - *Gender:*
        - 19% female
        - 81% male
    - *Age/cohort:*
        - Mean age 11.2*(1.4)* years
        - 34% Cohort 9

        - 66% Cohort 12
    - *Race/ethnicity:*
        - 34% Black
        - 39% Hispanic
        - 27% White or other ethnicity
    - *Maternal/family characteristics:*
        - Mother mean age 37.4*(7.4)* years
        - 84% biological mother
        - 12% depressed
        - 35% immigrant
        - 56% at least high school diploma
        - 51% married
        - 61% employed
        - 38% receiving public assistance
- Scores for the *non-antisocial* (NA3) group were all very low.
    - 88.1% of sample (*n* = 1,450);
    - *Gender:*
        - 51% female
        - 49% male
    - *Age/cohort*
        - Mean age 10.6*(1.5)* years
        - 52% Cohort 9
        - 48% Cohort 12

- *Race/ethnicity:*
  - 34% Black
  - 48% Hispanic
  - 19% White
- *Maternal/family characteristics:*
  - Mother mean age 38.0*(7.42)* years
  - 81% biological mother
  - 17% depressed
  - 44% immigrant
  - 56% at least high school diploma
  - 60% married
  - 60% employed
  - 28% receiving public assistance

- The last profile, *nonviolent antisocial* (NVA), had higher mean scores on all measures except for violent offenses; delinquency, and especially property offenses, were much higher. This group likely focused on more instrumental, property-focused acts than on reactive, aggressive acts.
  - 0.8% of sample (*n* = 10);
  - *Gender*
    - 0% female
    - 100% male
  - *Age/cohort*
    - Mean age 12.1*(0.3)* years

        - 0% Cohort 9
        - 100% Cohort 12
    - *Race/ethnicity:*
        - 60% Black
        - 20% Hispanic
        - 20% White
    - *Maternal/family characteristics:*
        - Mother mean age 41.9*(9.1)* years
        - 50% biological mother
        - 20% depressed
        - 10% immigrant
        - 70% at least high school diploma
        - 10% married
        - 70% employed
        - 30% receiving public assistance

Testing for association between activity participation and profile membership. Two-level logistic regressions were performed to determine whether adolescents' activity participation at Wave 2 significantly predicted their membership in any of the four behavior profiles at Wave 3; however, none of the models was significant (full sample, subgroup models by gender and cohort, covariates or no covariates).

Stability or change in adolescents' antisocial behavior profiles. A latent profile transition analysis revealed which participants changed profiles between Wave 1 and Wave 3 and which stayed the same. The semi-delinquent and non-antisocial profiles were the only

profiles that looked similar at Waves 1 and 3, so only adolescents in SD profiles at both waves or NA profiles at both waves were considered "stable". Still, because the NA profiles were by far the most common profile, the majority of adolescents (n =1,177; 71.5%) remained stable from Wave 1 to Wave 3. Of those adolescents who transitioned from one profile to another (n = 471; 28.6%), the most common transitions—more than 10% of the transitioning sample—were between NA and NVA (n = 152; 43.7% of the transitioning sample), between OO and NA3 (n = 72; 20.7% of the transitioning sample), and between NA and SD3 (n = 41; 11.8% of the transitioning sample). Table 8 provides totals and percentages for each possible profile transition.

Association between adolescents' activity participation and stability or change in their behavior profiles. I first ran a multilevel logistic regression model to determine whether, net of covariates, adolescents' activity participation at Wave 2 was associated with *any* change in their antisocial behavior profiles (i.e., every adolescent whose behavior profile changed from Wave 1 to Wave 3, regardless of profile membership at either wave). Although there was not a significant main effect for the entire sample of transitioners, a significant association emerged among boys ($\beta = 0.39$, $p = 0.026$; odds ratio = 1.47) such that boys who participated in activities at Wave 2 were less likely to transition from one profile at Wave 1 to another at Wave 3.

Associations between adolescents' activity participation and type of profile transition. Next, analyses were run by type of transition; that is, whether the profile change was toward the less antisocial or the more antisocial.

Favorable transitions from Wave 1 profile to Wave 3 profile included: OO to any other profile (SD3, PO, NA3, or NVA; n = 219); OA to SD3 or NA3; or SD to NA3. The model run on the full sample of favorable transitioners also was significant ($\beta = 0.34$, $p = 0.023$; odds ratio

= 1.41) such that activity participation was associated with a greater likelihood of favorable transition, but the association became non-significant when covariates were added. Subgroup models revealed that activity participation was associated with favorable transitions among boys (β = 0.49, p = 0.012; odds ratio = 1.54) and Cohort 9 (β = 0.71; p = 0.017; odds ratio = 2.04).

Unfavorable transitions included moves from NA to any other profile but NA3 (SD3, PO, or NVA; n = 77). All results run on this group of transitioners were non-significant.

Research Question 3: Are the associations between adolescents' activity participation and stability or change in their behavior profiles modified by parental monitoring, family conflict, or neighborhood collective efficacy?

Finally, to address Research Question 3, I tested measures of parental monitoring, family conflict, and collective efficacy as moderators of the association between adolescents' activity participation and stability or change in their antisocial behavior profiles from Wave 1 to Wave 3. I first conducted analyses to determine whether parental monitoring, family conflict, or collective efficacy significantly predicted change from one profile to another (change in general, then favorable versus unfavorable transitions). I followed these analyses with interaction models to examine the potential moderating role of these family and neighborhood variables.

Family dynamics as moderators of associations between adolescents' activity participation and their antisocial behavior profiles.

Any transitions. There was a significant main effect for parental monitoring, such that lower levels of monitoring were associated with change in adolescents' profiles from Wave 1 to Wave 3 (β = -0.20, p = 0.04; odds ratio = 0.81). This association remained significant for boys (β = -0.41, p = 0.003; odds ratio = 0.67) for Cohort 12 (β = -0.20, p = 0.004; odds ratio = 0.81), and for Cohort 12 boys (β = -0.39, p = 0.002; odds ratio = 0.67).

In addition, greater family conflict was associated with adolescents' change in profile membership ($\beta = 0.17$, $p = 0.016$; odds ratio = 1.09). In particular, this association emerged for Cohort 9 ($\beta = 0.19$, $p = 0.029$; odds ratio = 1.11).

Next, I ran models testing interactions between family variables and adolescents' activity participation and their associations with profile change. The interaction models with both parental monitoring and family conflict were non-significant for the full sample, as well as for each gender/cohort subgroup.

Favorable transitions. Parental monitoring was not significantly associated with favorable transitions in any models, nor did it moderate the association between activity participation and favorable profile transitions. Main effects models for family conflict also were non-significant. However, family conflict significantly moderated the association between activity participation and favorable transitions for Cohort 9 such that individuals who did not participate in activities were less likely to have a favorable profile transition, but only when family conflict was greater ($\beta = -0.47$, $p = 0.054$; odds ratio = 0.63)

Unfavorable transitions. Lower parental monitoring was associated with a greater likelihood of unfavorable transitions for the full sample ($\beta = -0.34$, $p = 0.003$; odds ratio = 0.70). The association held for boys ($\beta = -0.31$, $p = 0.019$; odds ratio = 0.73) and for Cohort 12 ($\beta = -0.35$, $p = 0.003$; odds ratio = 0.70). No significant interactions emerged.

Collective efficacy as moderator between associations between adolescents' activity participation and their antisocial behaviors. Greater collective efficacy was associated with adolescents' transitioning between profiles from Wave 1 to Wave 3 ($\beta = 1.05$, $p = 0.003$; odds ratio = 2.55). This association held among girls ($\beta = 1.29$, $p = 0.013$; odds ratio = 3.19), but not among boys. This association also was significant among Cohort 9 participants ($\beta = 1.10$, $p =$

0.021; odds ratio = 2.67), Cohort 12 ($\beta = 0.96$, $p = 0.023$; odds ratio = 2.35). The models testing the moderating role of collective efficacy in the association between adolescents' activity participation and profile change—with and without covariates, for the full sample, then for gender and cohort subgroups, and for specific transitions—were all non-significant.

Favorable transitions. Main effects models testing associations between activity participation and favorable profile change were significant both for the full sample ($\beta = 0.75$, $p = 0.024$; odds ratio = 2.11) and for Cohort 9 ($\beta = 0.84$, $p = 0.043$; odds ratio = 2.31) such that greater collective efficacy was associated with higher likelihood of favorable transitions. No significant interactions emerged.

Unfavorable transitions. Main effects models performed on the association between collective efficacy and unfavorable profile transitions all were non-significant. However, interaction models were significant for the full sample ($\beta = -2.63$, $p = 0.045$; odds ratio = 0.07) girls ($\beta = -4.86$, $p = 0.003$; odds ratio = 0.008) and Cohort 12 ($\beta = -2.77$, $p = 0.029$; odds ratio = 0.06) and for girls in Cohort 12 ($\beta = -4.81$, $p = 0.000$; odds ratio = 0.006). In other words, adolescents who participated in activities were less likely to have an unfavorable profile transition, but only in the context of greater collective efficacy.

Follow-up Analyses

Because the proposed analyses did not yield particularly robust results due to small cell sizes, I performed follow-up analyses to explore whether the predictors and moderators of interest were associated with change in any of the measures of antisocial behaviors over the three waves of PHDCN. Three-level (time points within individuals within neighborhoods) regression models were tested with each outcome used in the LPAs. As with the previous analyses, subgroup analyses were performed by cohort and gender.

Associations between adolescents' activity participation and their antisocial behaviors. Main effects analyses tested associations between adolescents' activity participation and the four aspects of antisocial behaviors included in the LPAs run.

Violent offenses. Adolescents' activity participation at Wave 1 was associated with decreasing numbers of violent offenses over time, but only for the full sample (β = -0.19, p = 0.03; d = 0.13) and for Cohort 12 (β = -.36, p = 0.004; d = 0.17).

Property offenses. No main effects for adolescents' property offenses emerged in the full sample or any of the subgroups.

Delinquency. There were no significant associations between adolescents' activity participation and change in their property offenses over time.

Aggression. There were no significant main effects for adolescents' activity participation and their aggression, either in the full sample or any of the subgroups.

Family dynamics as moderators of associations between adolescents' activity participation and their antisocial behaviors. Next, family dynamics (parental monitoring and family conflict) were tested as moderators of the association between adolescents' activity participation and the four antisocial behaviors used in the LPAs conducted.

Violent offenses. Results of main effects models run between parental monitoring and adolescents' patterns of violent offenses revealed a significant association such that greater parental monitoring was associated with fewer violent offenses over time (β = -0.12, p = 0.05; d = 0.21). This association held for boys (β = -0.24, p = 0.01; d = 0.29) and for Cohort 12 (β = -0.12, p = 0.05; d = 0.10). No significant interactions between activity participation and parental monitoring emerged among the full sample or the subgroups.

In addition, main effects models testing the association between family conflict and violent offenses were significant; specifically, greater family conflict was associated with increasing numbers of violent offenses over time ($\beta = 0.01$, $p = 0.04$; $d = 0.06$). Multigroup models suggested that this association was significant only for females ($\beta = 0.01$, $p = 0.002$; $d = 0.16$). No significant interactions between activity participation and family conflict emerged.

Property offenses. There were no significant main effects for parental monitoring and adolescents' property offenses, nor were there significant interactions with activity participation. There also were no significant results regarding family conflict as a predictor of adolescents' property offenses or as a moderator of the association between activity participation and property offenses.

Delinquency. Main effects models emerged as significant such that lower levels of parental monitoring were associated with increasing delinquency over time ($\beta = -0.39$, $p = 0.000$; $d = 0.27$). This association remained significant for most subgroups during multigroup models: girls ($\beta = -0.22$, $p = 0.02$; $d = 0.33$), boys ($\beta = -0.54$, $p = 0.000$; $d = 0.21$), and Cohort 12 ($\beta = -0.39$, $p = 0.000$; $d = 0.11$),. No significant interactions emerged.

In terms of family conflict, greater conflict was associated with increasing levels of delinquency over time ($\beta = 0.05$, $p = 0.000$; $d = 0.30$). This association was significant for all subgroups: girls ($\beta = 0.05$, $p = 0.000$; $d = 0.44$), boys ($\beta = 0.06$, $p = 0.000$; $d = 0.25$), Cohort 9 ($\beta = 0.04$, $p = 0.000$; $d = 0.47$), and Cohort 12 ($\beta = 0.06$, $p = 0.000$; $d = 0.21$). Models testing family conflict as a moderator of the association between adolescents' activity participation and their delinquency were non-significant.

Aggression. Lower levels of parental monitoring were associated with adolescents' increasing aggression over time ($\beta = -0.70$, $p = 0.001$; $d = 0.19$). Multigroup models showed that

this association was significant for Cohort 12 (β = -0.71, p = 0.001; d = 0.17). Interaction models were non-significant.

Moreover, main effects between family conflict and adolescents' aggression emerged such that greater family conflict was associated with increasing aggression over time for the full model (β = 0.19, p = 0.000; d = 0.36) and for all subgroups: girls (β = 0.20, p = 0.000; d = 0.43), boys (β = 0.17, p = 0.000; d = 0.36), Cohort 9 (β = 0.18, p = 0.000; d = 0.49), and Cohort 12 (β = 0.19, p = 0.000; d = 0.30). Interaction models were non-significant.

Collective efficacy as moderator between associations between adolescents' activity participation and their antisocial behaviors. Finally, interactions between activity participation and collective efficacy on adolescents' antisocial behaviors over time were tested.

Violent offenses. No main effects emerged in models testing the association between collective efficacy and adolescents' patterns of violent offenses. Interaction models suggested that among girls, adolescents' activity participation was associated with fewer violent offenses, but only in the context of greater collective efficacy (+1SD; β = -1.32, p = 0.001).

Property offenses. Greater neighborhood collective efficacy was associated with adolescents' decreasing property offenses for the full sample (β = -0.33, p = 0.002; d = 0.12). This association held for girls (β = -0.38, p = 0.02; d = 0.12), Cohort 9 (β = -0.29, p = 0.02; d = 0.21), and Cohort 12 (β = -0.37, p = 0.04; d = 0.05). Interactions with adolescents' activity participation were non-significant.

Delinquency. There were no significant associations between neighborhood collective efficacy and adolescents' delinquency over time. However, a significant interaction emerged for boys (but not girls) such that activity participation was associated with lower delinquency, but only in higher collective efficacy neighborhoods (+1SD; β = -1.55, p = 0.01).

Aggression. Main effects models testing associations between collective efficacy and adolescents' aggression were non-significant. Interaction models testing collective efficacy as a moderator of the association between adolescents' activity participation and aggression were significant, such that activity participation predicted lower aggression, but only when collective efficacy was greater (+1SD; $\beta = -4.35$, $p = 0.01$). This interaction remained significant for Cohort 9 ($\beta = -3.97$, $p = 0.03$) and males ($\beta = -4.35$, $p = 0.01$).

CHAPTER 4: DISCUSSION

The primary objective of this dissertation was to explore how the neighborhood and family contexts shape the development of antisocial behavior in adolescence. My aim in this study, informed by relational developmental systems theories (Overton, 2015) and Bronfenbrenner's (2006) bioecological model, was to understand the extent to which availability and use of youth-serving organizations works together in their association with adolescents' behavior with parental monitoring, family conflict, and neighborhood collective efficacy, rather than to isolate their independent contributions from one another. Findings from the dissertation may help inform understanding, from a developmental science perspective, of how families and communities work in tandem to shape adolescents' development. This Discussion summarizes the key findings of this dissertation, followed by a description of its strengths and limitations, and finally, offers implications for future policy, practice, and research.

Summary of Key Findings

Overall, in line with previous research (e.g., Bongers, Koot, Van Der Ende, & Verhulst, 2004; Huizinga et al., 1991), results from the analyses performed in this dissertation reveal that the overwhelming majority of adolescents engage in very low levels of antisocial behaviors, and that they tend to continue to act conventionally over time. Because of the small sample size of some of the antisocial behavior profiles, analyses examining the association between activity participation and profile membership did not have adequate power to be interpretable. As a result, follow-up three-level analyses were performed looking separately at trajectories of each measure of antisocial behaviors over the three waves of PHDCN. Findings from both the original and the supplemental analyses indicate that adolescents' activity participation may protect against their antisocial behaviors, particularly for boys and for older adolescents.

Research Question 1: Is the availability of youth-serving organizations associated with adolescents' differential activity involvement as a function of their behavior profiles?

My first hypothesis associated with Research Question 1—that girls and younger adolescents living in neighborhoods with more youth-serving organizations would have a greater likelihood of activity involvement than their respective peers—was confirmed for nine-year-old cohort, but not for girls. Rather, *boys* were more likely to participate in activities in neighborhoods with more youth-serving organizations than were girls. It may be that when resources are plentiful, parents are more likely to have knowledge about nearby organizations and to send their children to participate in those organizations, whereas when they are scarce, it is less likely that parents will know about the few organizations available. It also is possible that in neighborhoods with limited resources, the demand outweighs the supply and youth do not have the opportunity to participate in activities due to greater competition for the few resources available (Jencks & Mayer, 1990).

In terms of gender differences, perhaps boys are more susceptible to opportunity in the form of institutional resources. Research demonstrates that boys are more sensitive than girls to low neighborhood SES (e.g., Kroneman, Loeber, & Hipwell, 2004; Leventhal et al., 2015), and parents may strive to protect them from the unfavorable characteristics associated with low neighborhood SES. Specifically, boys are less likely to become involved in certain types of activities in general (and particularly ones that are not gender-congruent; Jacobs, Vernon, & Eccles, 2005; McHale, Crouter, & Tucker, 2001), but parents might encourage their boys to participate in neighborhoods—especially those with more resources—available to minimize their exposure to unfavorable and dangerous influences, such as gangs. In this sample, boys and girls were equally likely to participate in activities, even when controlling for mother- and family-

level variables, but parenting strategies that I was unable to consider, such as connecting adolescents to programming, may be of particular importance for boys in neighborhoods where such programming is available.

With regard to age differences, 12-year-olds have more autonomy than younger adolescents to choose to participate in neighborhood activities (Steinberg & Morris, 2001). Along these lines, non-school-based activity participation tends to decrease with age, suggesting that the younger cohort of nine-year-olds may have been more likely to be guided into available programming by their parents than the older cohort of 12-year-olds (Mahoney et al., 2009).

The moderating influence of antisocial behavior profile membership in the relationship between availability of youth-serving organizations and activity participation. I anticipated that adolescents with different behavior profiles would engage with resources in different ways, and again, my hypothesis was partially met. In general, adolescents in the NA profile (i.e., non-antisocial youth) were more likely than adolescents in any of the other profiles to participate in activities, but only in neighborhoods with high YSO availability. Non-antisocial youth may have a propensity for activity participation that is related to their behavior profiles—low on all antisocial measures—or their behavior profiles may be due in part to their participation in activities from earlier in childhood. Because activity participation was assessed only at Wave 2, it is not possible to determine the direction or precise nature of the correlation. Similarly, the measure of availability of youth-serving organizations came from the Community Survey, administered around Wave 1 of the Longitudinal Cohort Study. It is less likely that children's participation in activities prior to Wave 1 influenced the number of youth-serving organizations in their neighborhood (at least directly) than it is that their participation influenced their behaviors, but the bioecological model and empirical work on child care availability (e.g.,

Edwards, Fuller, & Liang, 1996; Meyers & Jordan, 2006) suggests that this bidirectional influence—supply meeting demand—is possible.

Research Question 2: How is adolescents' participation in structured activities associated with stability or change in their antisocial behavior profiles?

Consistent with my expectations, boys who participated in activities were more likely than girls to develop less antisocial behavior profiles from Wave 1 to Wave 3. As noted previously, boys may be more sensitive to the protective effects of activity participation, particularly because it keeps them "off the streets" (Roth & Brooks-Gunn, 2000). In particular, time spent in programming may deter boys from antisocial behaviors at a developmental period during which they are more vulnerable to an increase in such behaviors; this structured free time, versus unstructured time spent in the neighborhood, provides less opportunity for delinquency (Osgood & Anderson, 2004).

In contrast to my hypothesis that Cohort 12 would be more likely to improve behaviorally over time, younger adolescents (Cohort 9) were more likely to transition from a more antisocial behavior profile to a less antisocial profile than Cohort 12. In general, I expected adolescents who displayed antisocial behaviors in very early or pre-adolescence to persist into later adolescence, whereas those with later onset of antisocial behaviors might be limited in those behaviors only to adolescence (Moffitt, 1993). Because I was unable to measure Cohort 12's ASBs before the onset of data collection, however, I have no way of knowing which of those youth already were displaying ASBs prior to Wave 1.

Perhaps activity participation is more protective around age 12, the average age of Cohort 9 participants when Wave 2 data (including data on activity participation) were collected, versus age 15, the mean age of Cohort 12 at Wave 2. Antisocial behavior typically begins to develop in

earlier adolescence (Steinberg & Morris, 2001) and it may be that adolescents' activity participation around age 12 helped to temper those behaviors (Mahoney et al., 2009; Steinberg & Morris, 2001). It also is possible that adolescents in Cohort 9 who participated in activities were more likely to continue participating later into adolescence, and sustained participation is more protective than brief or temporary participation, which might have been the case among Cohort 12 youth.

Research Question 3: Are the associations between adolescents' activity participation and stability or change in their behavior profiles further modified by family dynamics or collective efficacy?

As with the Wave 1 ASB profiles, the majority of youth were in the non-antisocial group at Wave 3 (88%), and most (71%) were stable in their profile over time. It is not surprising that most adolescents remained low on all ASBs; indeed, various studies examining trajectories of antisocial behaviors find the same patterns over time (Bongers et al., 2004; Huizinga et al., 1991). In addition to the fact that adolescents were generally not very antisocial, mothers may have had a different sense of their adolescents' behavior at Wave 3 than they did at Wave 1, after several years of observing other youth's behaviors and exchanging information with other parents (Verhulst & Van Der Ende, 2006). It also is possible that some of the more antisocial youth were not entirely honest when responding to questions on the self-report measures: Although the validity of self-report delinquency measures is generally accepted, dishonesty is itself a characteristic of some constellations of antisocial behaviors and thus responses must be interpreted with caution (e.g., Thornberry & Krohn, 2000).

In terms of family dynamics, greater parental monitoring was associated with a lower likelihood of transitioning from a less antisocial profile to a more antisocial one, but was not

related to youths' activity participation. As expected, parental monitoring was found to be important for boys and for Cohort 12. Supplemental findings from growth curve analyses generally aligned with my primary findings reported here in that greater parental monitoring was associated with boys' and older adolescents' decreases in violent offending, delinquency, and aggression (Cohort 12 only). In terms of gender differences, as noted previously, parents may be more proactive in their monitoring of boys because they tend to be more likely than girls to engage in antisocial behaviors (e.g., Leventhal et al., 2009). Similarly, older adolescents who are monitored more closely by their parents likely have fewer opportunities to engage with deviant peers and other neighborhood risk factors (Fagan et al., 2011). Monitoring may serve a purpose similar to activity participation—in accordance with routine activities theories (Cohen & Felson, 1979), if there is no opportunity for adolescents to engage in antisocial behaviors, they will not engage in such behaviors. In other words, as long as *someone* is able to supervise adolescents, they will likely stay out of trouble.

Greater family conflict was associated with youth transitioning to a more antisocial profile, but only among Cohort 9 participants. Similarly, supplemental analyses revealed that greater family conflict was associated with all youth's increasing delinquency and aggression over time, and less family conflict was associated with girls' decreasing violent offenses over time. These findings are in line with research suggesting that parents' use of coercion in the family environment may be learned and reproduced by adolescents as an adaptive strategy, leading to their deviant behavior in other settings over time (e.g., Kiesner, Dishion, & Poulin, 2001).

It was surprising that no interactions between activity participation and family conflict emerged, given expectations that activity participation would play a protective role against

family conflict. Perhaps family conflict is so pervasive that even time spent participating in activities does not buffer against its adverse consequences. It also is possible that the cell sizes were simply too small for any interaction effect to materialize.

In terms of neighborhood collective efficacy, greater collective efficacy was associated with girls' positive profile change (i.e., into the NA profile). Again, results of supplemental analyses were in line with these findings, wherein greater collective efficacy was associated with girls' decreasing property offenses. These supplemental analyses also suggested that greater collective efficacy had a moderating role in the relationship between activity participation and girls' decreasing violent and property offending. Collective efficacy may be protective against antisocial behaviors among adolescent girls who participate in activities because they must travel through their neighborhoods to get to YSOs, and the positive neighborhood environment (e.g., neighbors who know them and their families, and who would intervene if they were misbehaving) may contribute favorably to their behaviors (Sampson, 1999). Collective efficacy may be particularly protective for girls who participate in neighborhood-based programming because they would otherwise be less likely to spend time in the neighborhood than would boys (e.g., Leventhal et al., 2015). Fauth and colleagues (2007) suggest that institutional resources are stronger in neighborhoods with greater collective efficacy—it may be that adolescent girls who participate in activities in neighborhoods with high collective efficacy are getting the double benefit of high-quality institutions and favorable neighborhood social processes.

Study Strengths

Although some of the findings in this dissertation were unexpected, the study has a number of strengths, particularly regarding the nature of the data used. PHDCN has a multitude of advantages over other existing studies or new data collection in terms of addressing the

questions central to the conceptual model outlined in the Introduction. The multilevel, longitudinal nature of the data allowed me to conduct mixture modeling to address my research questions. The analytic techniques employed provided a novel way to measure intraindividual change and interindividual differences simultaneously. Latent profile analysis permits exploration of how individuals differ on a number of characteristics—in this case, measures of adolescents' antisocial behaviors—rather than simply the extent to which people differ. This strength is particularly helpful for examining profiles of antisocial behaviors, because there are different implications for different types of behaviors. For instance, an adolescent who displays high levels of aggression, but lower levels of, say, property offenses, may have greater emotion dysregulation than a youth who is higher in more instrumental crimes and who may be more proactive in his/her delinquency.

It may be that type of aggression has differential implications for selection into activities and for consequences of participation in such activities (Blais et al., 2015). For example, parents might be more likely to encourage an adolescent with obvious emotion regulation challenges to participate in some programming than they would be an adolescent who acts "normal" at home. Some literature indicates that adolescents who display proactive rather than reactive aggression are more likely to develop antisocial personality disorder and have greater involvement in the criminal justice system as adults (e.g., Dodge, Lochman, Harnish, Bates, & Pettit, 1997), although a recent meta-analysis suggests that the relationship between instrumental and reactive aggression and persistence of ASBs may be more complex than originally thought (i.e., youth who display reactive aggression sometimes maintain antisocial behavior profiles into adulthood; Blais, Solodukhin, & Forth, 2015). Although the measures available in PHDCN did not get precisely at this question of which youth might turn out to be a greater threat to public safety and

how activity participation may mitigate this threat, the technique of establishing profiles of antisocial behaviors through latent profile analysis and examining how adolescents' behaviors change over time through latent profile transition analysis has the potential to be a strong analytic tool for answering these types of questions.

In addition, PHDCN provided information on individual and family background characteristics allowing for consideration of endogeneity. The issue of endogeneity is of great concern, particularly in neighborhoods research (*see* Chapter 2), but the extensive examination of the neighborhood context in PHDCN's Community Survey made it possible to account for a number of variables that have the potential for omitted variable bias in less comprehensive data (Sampson & Sharkey, 2008). Moreover, because data were collected over time on multiple cohorts, I had the opportunity to examine trajectories of ASBs across three waves (approximately six years) from two starting points (around age nine and age 12).

Study Limitations

Despite the strengths of the data and analytic approaches used, this dissertation has a number of limitations that must be acknowledged. The most significant limitation to confidence in the findings of this study relate to the small sample size of the more antisocial profiles. Latent profile analyses revealed that the study sample of nine- and 12-year-olds was largely non-antisocial. It was not unexpected that higher-ASB groups would be small, especially among the nine-year-old cohort, but it is unfortunate that the profiles were too small to produce meaningful results. I re-ran LPAs using other scale combinations, including the CBCL Anxious/Depressed subscale and the Emotionality, Activity, Sociability, and Impulsivity (EASI) Temperament Survey (Buss & Plomin, 1984) due to the frequent comorbidity—especially among girls—between these types of symptoms and ASBs, but the majority of profiles remained extremely

small. Accordingly, I chose to use the profiles calculated using the measures of most theoretical relevance to my research questions.

First, as noted earlier, latent profile analyses revealed that the sample of nine- and 12-year-olds was largely non-antisocial, limiting confidence in some of my findings regarding adolescents with antisocial behavior profiles. It was not unexpected that higher-ASB groups were small, especially among the nine-year-old cohort, but it is unfortunate that the profiles were too small to produce meaningful results.

All profiles were rather low on the maternal report measures (CBCL), delinquency and aggression, and higher on violent and property offenses, which were youth self-report (SRO). These differences may be due to the well-established observation that adolescents self-report antisocial and delinquent behavior at higher rates than do their parents, likely because they behave differently in front of their parents than they do with their peers or on their own (Achenbach, McConaughy, & Howell, 1987; Rescoria et al., 2012). The disparities also may be an artifact of the measures themselves. Although both the CBCL and SRO assess antisocial behaviors, they tap relatively different constructs: The CBCL asks parents about the frequency ("sometimes" or "often") of somewhat vague behaviors (e.g., "demands a lot of attention"), which is open to greater interpretation than the SRO items asking if the adolescent has *ever* (or in the past year, in the case of Wave 3) done any of the behaviors in the questionnaire. It is also likely that mothers know less about their adolescents' behaviors as they get older and spend more time outside of the home (Verhulst & Van Der Ende, 2006).

In addition to the limitations of the results themselves, PHDCN's generalizability is historically and geographically restricted, given that investigators began data collection more than 20 years ago and focused on a single city with a unique local context. As Sampson (2012)

detailed in his book documenting PHDCN within a local and historical perspective, Chicago in the mid-1990s was plagued by gang violence and other serious crime, but the crime wave was primarily isolated to lower-income neighborhoods (Sampson, 2012). Indeed, Chicago was extremely segregated racially, ethnically, and socioeconomically, meaning that residents of the same city could have vastly different experiences, particularly with regard to resource allocation (Sampson, 2012).

Despite the two decades that have passed since PHDCN was initiated, many of the challenges faced by children and families—low-income children and families, in particular—in Chicago continue to afflict the city and others like it around the country. Police shootings of unarmed African American men and boys, from Laquan McDonald in Chicago to Michael Brown in a suburb of St. Louis, MO, to Walter Scott in North Charleston, SC, illustrate ongoing tensions that arise in part from racial-ethnic and socioeconomic segregation. The Chicago Public Schools in 2013 began shuttering schools due to budget constraints (de la Torre, Gordon, Moore, & Cowhy, 2015) with similar closures occuring across the US as localities with limited income tax must choose among investments in public services, at the expense of others (National Center for Education Statistics, 2015). In short, many of the issues central to the Chicago studied in PHDCN continue to exist today in Chicago and beyond.

Further, I could not fully explore some of my research aims as I intended given constraints of the data. I was unable to examine peer influence because the relevant measure (peer deviance) in PHDCN was not reliable enough to use for the present purposes. I also was unable to look at the extent or type of adolescents' activity participation. Although PHDCN asked adolescents about the number of hours per week they participated in activities, there was too much missing data to use this measure. A similar issue precluded use of data on participation

in specific activities. It may be that certain activities, such as organized sports versus youth group, are more strongly linked with the development of antisocial behaviors (Mahoney, Vandell, Simpkins, & Zarrett, 2009). Activity participation also was only assessed at Wave 2, and it would have been informative to have a measure of adolescents' participation in activities at all waves. As noted previously, assessing activity participation at Wave 1 would have provided more information about the direction of the association between activity participation and antisocial behavior profiles.

In addition, PHDCN is limited in the extent to which the full conceptual model could be examined. For example, as noted, the conceptual model calls for consideration of three dimensions of institutional resources: availability, access, and quality. PHDCN has data on availability of particular youth-serving organizations in study neighborhoods at the time of data collection, but there is no way to determine how accessible these resources were to each individual family (e.g., how close the organizations were to their homes, how knowledgeable study families were of the organizations, or whether eligibility requirements were inclusive of participants). Moreover, information on the quality of available organizations was not available. PHDCN also does not have a qualitative component, which could have helped elucidate some of the processes underlying adolescents' developmental trajectories and the relative importance of various contexts for those trajectories.

Finally, I attempted to frame the discussion of adolescents' behavior trajectories in terms of their contextual assets rather than focusing on deficits. However, it was difficult to present adolescents' antisocial behaviors, which are inherently "negative", without using deficit-based language throughout much of the dissertation. In future work, I plan to broaden the focus of

adolescents' behavior trajectories to be more inclusive of characteristics that may be considered assets, such as prosociality or other adaptive behaviors (e.g., emotion regulation skills).

Policy and Practice Implications

Despite the limitations referenced previously, the research questions addressed in this dissertation have the potential to inform both policy and practice using neighborhood-based youth-serving organizations as the point of intervention for young people who show antisocial tendencies. Research shows that community-based intervention is more effective for reducing adolescents' antisocial behaviors than is institutional placement (e.g., Holman & Zeidenberg, 2006), and there has been a policy and programmatic effort in recent years to rely on neighborhood-based resources rather than institutionalization to address adolescent delinquency (Mihalic, Fagan, Irwin, Ballard, & Elliott, 2004; Greenwood & Turner, 2011). As such, this conceptual model and accompanying findings may help various stakeholders, from frontline service providers to local, state, and federal policymakers, determine the most appropriate allocation of resources, for whom they are most effective, and how to maximize adolescent engagement with these resources.

The results of this study imply that there are complex interactive and bidirectional relationships among multiple levels of a given adolescent's ecology (e.g., individual, family, and neighborhood**)**, and highlight the need to pay attention to each of these contexts when developing policies and programs for "at-risk" youth in more disadvantaged neighborhoods. Although the analyses regarding changes in adolescents' behavior profiles were not as robust as I anticipated, follow-up models helped boost confidence in the associations that did emerge—namely, that activity participation can protect adolescents against the development of antisocial behavior trajectories. Specifically, examining the associations between availability of resources and

differential use by adolescents with different behavior profiles can help policymakers and practitioners focus resources on programming that provides youth who are prone to antisocial behaviors with alternative activities during their free time.

This dissertation adds to the literature suggesting that not all youth who display antisocial behaviors are created equal (e.g., Gorman-Smith, Tolan, & Henry, 2000), and thus should not be treated as such. Many juvenile justice agencies across the country use risk and needs assessments (Vincent, Guy, & Grisso, 2012) to determine individual adolescents' greatest challenges, needs, and assets or protective factors that can be capitalized upon to optimize positive development. The findings from this study imply that risk and needs assessments employed prior to the point of juvenile justice system contact would help decision makers place youth with specific characteristics in the most suitable programming while making every effort to protect the public by assessing their risk to public safety. Risk and needs assessments might be administered in schools to place youth in special in-school or extracurricular programming as needed, or may be used at clearinghouse-type organizations to determine how adolescents could best take advantage of the resources available in their communities.

Risk and needs assessments can identify some of the ways in which youth who display antisocial behaviors are different from one another. The current study also points to gender and age differences in the prevalence and presentation of antisocial behaviors. For instance, antisocial behaviors are more normative among boys, but they may have different implications in girls. Although both boys and girls with antisocial tendencies are more likely than their conventional peers to have been exposed to violence in or outside of the home (e.g., Baker, Cunningham, & Harris, 2011), girls who display antisocial behaviors are much more likely to be victims of trauma and abuse that may need to be addressed using more intensive interventions

than simple after-school programming or recreational activities (e.g., Chauhan & Reppucci, 2009; Sherman & Greenstone, 2011).

In terms of age differences, youth who develop these behaviors later are less likely to persist as criminal offenders (i.e., it is fairly normative for adolescents to engage in some ASBs, particularly with their peers), whereas those who start younger and are antisocial on their own may need more intensive intervention. Despite research suggesting that earlier onset of ASBs is predictive of life-course persistence, others assert that even adolescents who show a propensity for more serious and persistent ASBs have the potential to change their trajectories from more antisocial to more normative or prosocial (Aiyer et al., 2013; Laub & Sampson, 2001). Some (later-onset) adolescents may need simply to be "kept off the street" during the periods when they might engage in ASBs, whereas earlier-onset adolescents may need more intensive treatment related to family influences (e.g., family conflict) and other contextual characteristics that may covary with earlier onset of ASBs (Wertz et al., 2015).

The results from this dissertation also suggest that family and neighborhood characteristics can modify associations between activity participation and antisocial behaviors. Because greater parental monitoring and lower family conflict are generally associated with fewer antisocial behaviors, programs that aim to reduce delinquency may choose to focus on these aspects of the family environment. Specifically, an organization might work with parents to teach them how best to supervise their youth, either directly (through parental control) or indirectly through open communication and encouragement of youth disclosure (e.g., Stattin & Kerr, 2000). Similarly, community based organizations may engage families in problem-solving and communications strategies that reduce family conflict, thereby decreasing the likelihood that youth will develop antisocial behaviors. Youth-serving organizations also should be well-

attuned to the community climate, taking advantage of social cohesion and social control when possible to teach youth about respect for community and fellow residents. In neighborhoods with lower collective efficacy, programs might focus on creating welcoming and nurturing environments within the physical space of the organization to minimize the appeal of spending time with deviant peers and groups such as gangs.

Programming that focuses on improving family dynamics and working within the parameters of the neighborhood to leverage resources are well-positioned to change adolescents' behavior trajectories for the better. For example, multisystemic therapy (MST) employs a cross-systems approach to addressing youth's needs at multiple levels organization, from the family to the peer group to the greater neighborhood milieu. MST trains local therapists to intervene with adolescents with serious behavioral problems, and is often (but not exclusively) used as diversion or probation for juvenile justice system-involved youth (Henggeler & Schoenwald, 2011). MST was designed with the bioecological model as an orienting framework (Bronfenbrenner & Morris, 2006), and provides treatment at multiple levels of the adolescent's ecology. Evaluations of MST suggest it is effective in preventing recidivism and reducing mental health symptoms across types of offenders (e.g., violent versus property offenders) and geographically diverse settings (e.g., the South and the Northeast; there is less research on the effectiveness of MST in urban versus rural settings; Henggeler & Schoenwald, 2011). However, MST is very expensive—training and licensure cost upwards of $22,000 (Blueprints for Healthy Youth Development, 2012-2013)—and poorer communities often cannot afford such pricey interventions.

MST is considered an evidence-based program (EBP), one of several programs that have met a number of evaluation criteria and are viewed widely as appropriate for communities

nationally, and in fact, some states are required to fund only EBPs (e.g., Lipsey, Howell, Kelly, Chapman, & Carver, 2009; Office of Juvenile Justice and Delinquency Prevention, 2014; U.S. Department of Health and Human Services, 2012). However, there is concern regarding overreliance on EBPs in recent years, because, as noted above, they can be extremely expensive; they are typically "one-size-fits-all," or highly manualized; and they are often implemented without regard to their fit within the community (e.g., Lipsey, 2009). As the findings from this dissertation imply, programming aimed at reducing adolescents' antisocial behaviors and promoting their positive development should be tailored to the particular landscape of each neighborhood. For example, disadvantaged neighborhoods in more urban areas may struggle primarily with neighborhood violence and thus prefer to focus on enhancing neighborhood safety (or at least minimizing adolescents' exposure to violence), whereas the isolation and geographical spread common to more rural neighborhoods may warrant more focus on accessibility of programming with regard to inexpensive transportation or colocation of services.

Program and policy efforts likely are more easily implemented at the neighborhood level than within families because it can be difficult to change individual families' behaviors, which occur largely in private. As such, examining the relative contributions of neighborhood-level influences on adolescents' activity participation and behavior can provide crucial information for leveraging resources most effectively. Zaff and colleagues (2016) highlight the importance to comprehensive community initiatives (CCIs) addressing multiple aspects of the "youth system" (i.e., the various contexts that may influence their development) within the unique parameters of their target neighborhoods. Harlem Children's Zone (HCZ) is perhaps the most well-known and extensive CCI. HCZ provides support for all children in a disadvantaged 99 square block radius in Harlem using a "cradle to college pipeline" approach (Tough, 2009). Although not explicitly

targeting adolescents, HCZ provides youth development programming, including tutoring, skill building, and cultural enrichment activities for adolescents, in addition to rigorous and comprehensive educational curricula with wraparound services in their charter middle and high schools (Our Programs, hcz.org, 2014).

In the wake of the generally positive findings (e.g., Dobbie & Fryer, 2011) for HCZ's comprehensive model, the U.S. government is providing funding through the Fund for the Improvement of Education Program to neighborhoods to develop comprehensive community initiatives ("Promise Neighborhoods") with the goal of promoting positive development among children and youth. Although it remains to be seen how successful HCZ and the Promise Neighborhoods will be in the long term, the holistic approach to addressing well-being with attention to multiple contexts within which children and adolescent develop is in line with existing research.

In addition to "off-the-shelf" programs such as MST and CCIs such as HCZ, other policy and programmatic efforts to divert children and adolescents from the juvenile justice system use a selection of evidence-based principals and practice to optimize youth functioning. For instance, Lipsey and colleagues advocate for a set of "best practice guidelines" for interventions working with juvenile offenders and youth at high risk for delinquency (Lipsey, 2009; Lipsey et al., 2012). In a meta-analysis of successful juvenile justice programs, Lipsey (2009) found evidence for the effectiveness not just of certain name-brand or manualized interventions, but also of more flexible programs that used particular approaches to addressing adolescents' needs and assets. Specifically, programs that employ monitoring or surveillance techniques, restorative justice practices, skill building, and counseling (or any combination of them) are most likely to see behavioral improvement among adolescent clients. Moreover, interventions that involve

positive adult role models, such as mentoring, and cognitive-behavioral skills have the greatest effect sizes in terms of preventing recidivism. Peer-based interventions, however, tend to have small—or even negative—effects, given youth's greater exposure in these programs to deviant peers (i.e., deviancy training). Different types of interventions also may differentially shape adolescents' developmental trajectories depending on their behavior profiles. For instance, as noted previously, youth who demonstrate fewer antisocial behaviors may continue on this path if simply kept out of risky situations, whereas those who display a propensity for more serious antisocial behaviors may require more intensive interventions. This type of research can be applied in developing programs to address adolescents' problem behaviors and optimize their strengths.

Policies and practices that address behaviors that often lead to juvenile justice system involvement and channel adolescents' energies into more productive developmental trajectories have the potential to produce a generation of healthy young adults whose personal strengths are optimized by experiences with supportive neighborhood resources, rather than having been harmed by institutionalization. In order for these policies and practices to be effective, however, it is imperative that they be informed by high-quality research (Butts & Roman, 2011). The final section of this Discussion outlines possible directions for future research in the vein of this dissertation so that such research may continue to influence policy and practice for promoting optimal adolescent development.

Future Research Directions

As elucidated in the Limitations section, this study had a number of factors that constrained me from to fully addressing my conceptual model. Future research has the potential to delve more deeply into some of the aspects of this conceptual model and to attend to the

limitations of the current study. First, additional research should take advantage of mixture modeling approaches—this time, on a sample of adolescents who display more antisocial behaviors on the whole—in order to determine if it is possible to truly differentiate typologies of ASBs and how the trajectories of different profiles are shaped by activity participation and by other contextual influences.

Activity participation. Future research should expand on existing literature (e.g., Mahoney et al., 2015; Fauth et al., 2007) to continue to explore the extent to which it is activity participation in general or certain activities specifically that protect against adolescents' development of ASBs, and at what points in adolescence activity participation can provide the greatest benefits. What types of activities—recreational, therapeutic, or other—are most likely to promote conventional or prosocial behaviors in adolescents displaying antisocial tendencies? Do these types of activities differ by behavior profile? What about by gender? If activity participation is initiated prior to or early in adolescence, does it have a more profound impact on behavior trajectories than activities later in adolescence? The direction of the association between activity participation and behavior also should be explicated—in other words, do less antisocial youth have a higher propensity to participate in activities to begin with, or is it activity participation itself that encourages more conventional or prosocial behaviors? Existing literature (e.g., Fauth et al., 2007) begins to get at some of these questions—specifically, what types of activities are linked with specific adolescent outcomes—but more research is needed to examine how certain types of activities are associated with antisocial behavior trajectories in particular, and at what point in development they are most important. It also is crucial to examine additional moderators of this relationship to determine how contextual factors might enhance, diminish, or buffer against the effects of activity participation.

Future research should look beyond availability of youth-serving organizations. For instance, how do accessibility and quality of available resources matter for adolescents' behavioral trajectories (Mahoney et al., 2015)? Do parents and youth know about all that is available in their communities (Meyers & Jordan, 2006)? What are the eligibility requirements? As noted in the Introduction, some programs that may intervene with antisocial youth are available only as diversion or re-entry from the juvenile justice system in some communities (e.g., MST, Henggeler & Schoenwald, 2011).

This dissertation accounted for some potential contextual moderators—parental monitoring, family conflict, and neighborhood collective efficacy—of the association between activity participation and adolescents' behavior trajectories. However, many other characteristics must be considered to develop a comprehensive picture of the what aspects of the "youth system" (Zaff et al., 2016) may modify the associations between activity participation and youth's behavior. For example, I was unable to examine the role of peer interactions, but it is likely—particularly in adolescence—that peers influence both how youth behave and how they spend their free time (e.g., Brown & Larson, 2009). Even in structured programming, deviant peers may learn antisocial behaviors from one another (i.e., deviancy training), resulting in greater likelihood of delinquency rather than having the intended effect of preventing and promoting such behaviors (e.g., Dishion et al., 1999).

Other parenting strategies and family dynamics should be considered. As alluded to previously, parents may work to connect their youth with specific activities or organizations, which is more likely to be effective if they have expansive social networks with information about all available, accessible, and high-quality resources in their neighborhoods (Meyers & Jordan, 2006). Exposure to violence in the home—not just family conflict, as I measured, but

witnessing or being the victim of abuse—can have a profound impact on adolescent behavior, and could diminish the positive effects of activity participation (alternatively, engaging with out-of-home resources may buffer against the harmful influence of exposure to violence at home; e.g., Chauhan & Reppucci, 2009).

Finally, interactions between neighborhood, family, and peer characteristics in relation to activity participation and antisocial behavioral trajectories should be tested. Ample research exists that examines how such contexts interact with one another to influence typologies of juvenile delinquency (e.g., Chung & Steinberg, 2006; Gorman-Smith, Tolan, & Henry, 2000; Ingoldsby, Shaw, Winslow, Schonberg, Gillion, & Criss, 2006), but less has been done to integrate the roles of each of these contexts into empirical work on the relationship between activity participation and youth's trajectories of antisocial behavior.

In conclusion, despite its methodological and conceptual limitations, the results from this dissertation provide insight into the potential protective role of activity participation, and the ways in which various contextual characteristics may modify that relationship. Although several findings were not as hypothesized, in general, this study adds to the research suggesting that adolescent participation in activities as a means to structure their free time can contribute favorably to their development. The findings discussed here suggest that even adolescents who may have been labeled as "bad", "damaged", or otherwise deficient can benefit from both family- and community-based assets. From a developmental perspective, the interaction between these contextual assets and adolescents' activity participation may, over the course of adolescence, both protect against individual and contextual risk factors and promote personal strengths. These strengths may include aptitude related to the content areas of activities in which youth participate; they also may include the development of skills such as persistence or emotion

regulation, which, like talent, can improve over time with practice (e.g., Zaff et al., 2016). Future research that comes out of the groundwork laid by this dissertation has the potential to inform policy and practice aimed at minimizing delinquency and juvenile justice involvement, and point to opportunities for future research.

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Table 1

Descriptive Statistics for Total Sample and for Cohort 9 Sample vs. Cohort 12 Sample

	Cohort 9 *n* = 826	Cohort 12 *n* = 820	Total *N* = 1,646
Individual/family characteristics			
Male gender	53%	49%	51%
Black	34%	37%	36%
Hispanic	48%	45%	46%
White or other	18%	18%	18%
PC age at Wave 1	35.97*(0.25)***	39.31*(0.27)*	37.6
PC is biological mother	65%***	63%	64%
PC depressed	18%	17%	17%
PC immigrant	43%	40%	42%
PC education: Less than HS diploma	41%	45%	43%
PC education: HS diploma	13%	13%	13%
PC education: At least some college	42%	39%	41%
PC marital status: Married	59%	55%	57%
PC marital status: Single	29%*	33%	31%
PC marital status: Partnered	12%	10%	11%
PC employed	57%	61%	59%
Public assistance	33%*	28%	31%
Neighborhood characteristics			
Concentrated poverty W1	1.83*(0.78)*	1.84*(0.75)*	1.84*(0.77)*
Social disorder W1	1.87*(0.34)*	1.86*(0.34)*	1.86*(0.34)*
Social cohesion W1	3.33*(0.29)*	3.34*(0.29)*	3.34*(0.29)*
Social control W1	3.86*(0.35)*	3.87*(0.34)*	3.86*(0.34)*
Collective efficacy W1	3.97*(0.28)*	3.88*(0.28)*	3.87*(0.28)*
Variables of interest			
Youth-serving organizations W1	1.84*(0.90)*	1.82*(0.87)*	1.83*(0.88)*
Activity participation W2	28%*	33%	30%
Parental monitoring W1	5.78*(1.69)*	5.83*(1.61)*	5.80*(1.65)*
FES Conflict W1	2.58*(1.99)*	2.65*(1.97)*	2.61*(1.98)*
SRO Violent W1	-0.74*(1.79)***	-1.87*(2.31)*	-1.11*(2.10)*
SRO Property W1	-0.46*(1.28)***	1.11*(1.85)*	-0.78*(1.62)*
SRO Violent W3	-0.59*(1.23)*	-0.65*(1.25)*	-0.62*(1.24)*
SRO Property W3	-0.05*(0.25)**	-0.003*(0.40)*	-0.03*(0.33)*
CBCL Aggression W1	9.12*(6.95)*	8.68*(6.82)*	8.90(6.88)
CBCL Delinquency W1	1.71*(2.05)**	1.99*(2.49)*	1.85*(2.29)*
CBCL Aggression W3	5.37*(4.79)**	5.85*(5.13)*	5.60*(4.96)*
CBCL Delinquency W3	1.76*(1.98)***	2.49*(2.73)*	2.11*(2.40)*

Note. Difference tests performed on count variables; t-tests performed on continuous measures. ***p<.001; **p<.01; *p<.05.

Table 2

Correlations between Individual- and Family-level Background Characteristics

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Gender (male)	1													
2. Black	-0.02	1												
3. Hispanic	0.02	-0.69***	1											
4. White	0.01	-0.35***	-0.44***	1										
5. PC age	0.003	0.01	-0.07**	0.08**	1									
6. Bio mother	-0.04	-0.06**	0.03	0.04	-0.14***	1								
7. Less than HS grad	0.001	-0.21***	0.35***	-0.19***	-0.02	-0.07**	1							
8. HS diploma	0.001	-0.01	-0.04*	0.06*	0.002	0.01	-0.33***	1						
9. Some college	-0.001	0.25***	-0.36**	0.16***	0.02	0.06*	-0.72***	-0.32***	1					
10. Married	0.003	-0.32***	0.23***	0.11***	0.05*	0.06*	0.01	0.02	-0.02	1				
11. Single	0.01	0.33***	-0.25***	-0.09***	0.03	-0.04	-0.03	-0.01	0.07**	-0.77***	1			
12. Partnered	-0.01	0.02	0.02	-0.05*	-0.13***	-0.03	0.05*	-0.02	-0.04	-0.40***	-0.24***	1		
13. Employed	0.06*	0.01	-0.07**	0.08**	0.06*	0.04	-0.27***	0.003	0.30***	0.04	-0.03	-0.02	1	
14. Public asst	0.01	0.24***	-0.12***	-0.13***	-0.11***	-0.05*	0.15***	-0.01	-0.15***	-0.42***	0.36***	0.13***	-0.34***	1

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

Table 3

Correlations between Neighborhood-level Background Characteristics

	1	2	3	4	5	6
1. Collective efficacy	1					
2. Youth services	0.18***	1				
3. Concentrated poverty	-0.50***	-0.09***	1			
4. Immigrant concentration	-0.30***	-0.22***	-0.03	1		
6. Residential stability	0.58***	-0.21***	-0.11***	-0.36***	1	
7. Disorder	-0.73***	-0.06*	0.73***	0.32***	-0.44***	1

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

Table 4

Correlations between Variables of Interest

	1	2	3	4	5	6	7	8
1. Activity participation	1							
2. Parental monitoring	0.09**	1						
3. FES Conflict	0.04	0.15***	1					
4. SRO Violent	-0.08**	-0.10***	-0.08***	1				
5. SRO Property	-0.02	-0.06*	-0.08**	0.38***	1			
6. CBCL Delinquency	-0.02	0.12***	0.31***	-0.17***	-0.14***	1		
7. CBCL Aggression	-0.04	0.12***	0.35***	-0.14***	-0.11***	0.69***	1	
8. Collective efficacy	0.18	0.03	0.22***	0.48***	0.51***	0.00***	0.64***	1

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

Table 5

Regression Coefficients with Robust Standard Errors for Availability of Youth-serving Organizations Associated with Activity Participation

	Total Sample	Males	Females	Cohort 9	Cohort 12
YSOs	0.29**	0.43**	0.16	0.34*	0.25
	(0.11)	(0.16)	(0.13)	(0.17)	(0.14)
Age	0.06	0.05	0.08	-0.03	-0.36
	(0.04)	(0.06)	(0.06)	(0.31)	(0.26)
Male gender	0.07	-	-	0.12	0.04
	(0.11)	-	-	(0.18)	(0.16)
Black	-0.61**	-0.46*	-0.70**	-0.65*	-0.56*
	(0.19)	(0.25)	(0.27)	(0.27)	(0.26)
Latino	-0.72***	-0.53*	-0.92***	-0.91***	-0.52*
	(0.17)	(0.22)	(0.24)	(0.21)	(0.23)
Mother age	0.02	0.01	0.02	0.02	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Less than HS diploma	0.01	0.40	-0.40	-0.06	0.04
	(0.22)	(0.26)	(0.28)	(0.28)	(0.28)
Some college	0.66***	1.11***	0.23	0.75***	0.57*
	(0.18)	(0.20)	(0.26)	(0.23)	(0.25)
Married	0.002	-0.13	0.14	0.002	0.01
	(0.11)	(0.13)	(0.16)	(0.14)	(0.12)
Welfare	-0.10	-0.24	0.03	-0.13	-0.08
	(0.16)	(0.18)	(0.22)	(0.22)	(0.18)
Intercept	-1.84	-2.02**	-1.72*	-0.95	3.25
	(0.55)	(0.74)	(0.75)	(2.88)	(3.16)

Table 6

Model Fit Statistics for Latent Profile Models with Two to Five Profiles for Wave 1 Sample

# Profiles	Entropy	AIC	BIC	SaBIC	LMR	BLRT
Two	0.96	15818.9	15921.6	15861.3	0.0133	0.000
Three	0.99	13505.1	13634.8	13558.6	0.0297	0.000
Four	0.99	12012	12168.8	12076.7	0.0001	0.0001
Five*	0.99	11160.4	11355.2	11236.2	0.2094	0.000

Note. AIC = Akaike Information Criteria; BIC = Bayesian Information Criteria; SaBIC = Sample Size Adjusted Bayesian Information Criteria; LRT = Lo-Mendell-Rubin Likelihood Ratio Test; BLRT = Boostrapped Likelihood Ratio Test. *The five-profile solution did not replicate the best loglikelihood value, even with a high number of random starts. This solution was not considered.

Table 8

Descriptive Statistics and Pairwise Test Results for Wave 1 Profiles

	Overt Offenders	Out-of-home Antisocial	Non-antisocial	Semi-delinquent	Total
	n = 72	*n* = 17	*n* = 1,287	*n* = 270	*N* = 1,646
Individual/family characteristics					
Male gender	56.9%	47.1%	49.9%	55.2%	51.0%
Wave 1 age	11.11*(1.50)***	11.87*(1.07)****	10.48*(1.52)****	11.26*(1.40)****	10.65*(1.53)*
Black	38.9%	47.1%	33.6%**	43.3%**	35.5%
Hispanic	45.8%	32.3%	48.3%**	37.8%**	46.3%
White or other	15.3%	17.7%	18.2%	18.9%	18.2%
Age at Wave 1	37.86*(7.70)*	37.57*(5.62)*	37.36*(7.57)***	38.91*(8.06)*	37.62*(7.65)*
Biological mother	61.1%	64.7%	64.7%	62.6%	64.2%
Depressed	24%	18%	15%***	25%***	17%
Immigrant	34%	41%**	44%**	31%	42%
Education: Less than HS	47.2%	29.4%	43.4%	38.9%	42.7%
Education: HS diploma	13.9%	5.9%	12.9%	14.1%	13.1%
Education: Some college	36.1%	64.7%*	40.3%	43.3%	40.9%
Marital status: Married	48.6%	41.2%	59.8%***	46.3%***	56.9%
Marital status: Single	37.5%	47.1%	29.1***	37.8%**	31.0%
Marital status: Partnered	12.5%	11.8%	10.3%	13.3%	10.9%
Employed	62.5%	75.0%	58.4%	60.1%	59.0%
Public assistance	38.9%	17.7%	29.5%*	36.1%*	30.9%
Neighborhood characteristics					
Concentrated poverty W1	0.11*(0.76)*	-0.22*(0.79)*	-0.01*(0.78)**	-0.03*(0.70)*	1.87*(0.79)*
Disorder W1	1.88*(0.34)*	1.76*(0.34)*	1.87*(0.33)**	1.82*(0.35)**	1.86*(0.34)*
Collective efficacy W1	3.88*(0.27)*	3.93*(0.22)*	3.86*(0.25)***	3.91*(0.25)***	3.87*(0.25)*
Variables of interest					
Youth-serving organizations	-1.65*(0.92)*	-1.82*(0.76)*	-1.74*(0.88)*	-1.72*(0.89)*	-1.74*(0.88)*
Activity participation	35.70%	29.40%	29.60%	32.70%	30.30%
FES Conflict W1	2.99*(1.93)**	2.29*(1.90)*	2.51*(1.95)****	3.06*(2.05)****	2.61*(1.98)*
SRO Violent W1	-3.37*(3.01)****	-4.28*(2.98)****	-0.69*(1.66)****	-2.24*(2.55)****	-1.11*(2.10)*
SRO Property W1	-5.34*(0.39)****	-7.80*(0.39)****	0.01*(0.09)****	-2.81*(0.32)****	-0.78*(1.62)*
SRO Violent W3	-1.08*(1.39)***	-1.41*(1.40)**	-0.50*(1.17)****	-1.01*(1.42)****	-0.62*(1.24)*
SRO Property W3	-0.03*(0.047)*	-0.05*(0.44)*	-0.03*(0.29)*	-0.01*(0.45)*	-0.03*(0.33)*
CBCL Aggression W1	11.74*(8.42)****	10.06*(6.23)*	8.51*(6.63)****	9.97*(7.36)***	8.90*(6.88)*
CBCL Delinquency W1	2.83*(3.28)****	2.24*(1.82)*	1.68*(2.09)****	2.39*(2.72)****	1.85*(2.29)*
CBCL Aggression W3	6.62*(5.08)*	4.69*(3.54)*	5.43*(4.91)***	6.26*(5.20)**	5.60*(4.96)*
CBCL Delinquency W3	2.77*(3.04)**	1.77*(2.49)*	1.98*(2.27)****	2.63*(2.73)****	2.11*(2.40)*

Note. Difference tests compare members of each profile with rest of sample. ***p<.001; **p<.01; *p<.05

Table 8

Regression Coefficients with Robust Standard Errors Examining Antisocial Behavior Profile Membership as Moderator of Association between Availability of YSOs and Activity Participation (NA Profile is Referent)

	Total Sample	Cohort 9	Cohort 12	Males	Females
OO x YSOs	-0.36	-0.10	-0.58	-0.24	-0.60
	(0.34)	(0.49)	(0.52)	(0.37)	(0.81)
OA x YSOs	-2.68	-	-2.72	-4.47**	-2.58
	(1.53)	-	(1.68)	(1.46)	(2.12)
SD x YSOs	-0.60*	-0.00	-0.93**	-0.51	-0.77*
	(0.23)	(0.35)	(0.28)	(0.35)	(0.31)
OO Profile	0.26	1.22*	-0.25	0.83*	-0.48
	(0.30)	(0.52)	(0.38)	(0.37)	(0.61)
OA Profile	-1.61	-	-1.34	-1.90	-1.58
	(0.90)	-	(0.81)	(1.01)	(1.52)
SD Profile	0.12	0.11	-0.34	0.07	-0.36
	(0.19)	(0.30)	(0.22)	(0.25)	(0.31)
YSOs	0.43***	0.34*	0.50**	0.56**	0.32*
	(0.12)	(0.17)	(0.17)	(0.18)	(0.15)
Age	0.05	-0.05	-0.34	0.04	0.07
	(0.05)	(0.32)	(0.26)	(0.06)	(0.06)
Male gender	0.08	0.09	0.06	-	-
	(0.12)	(0.18)	(0.17)	-	-
Black	-0.63**	-0.68*	-0.62*	-0.52*	-0.68*
	(0.16)	(0.27)	(0.27)	(0.25)	(0.27)
Latino	-0.73***	-0.94***	-0.56*	-0.55**	0.92**
	(0.16)	(0.21)	(0.23)	(0.21)	(0.24)
Mother age	0.02	0.02	0.01	0.02	0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Less than HS diploma	0.03	0.07	0.06	0.42	-0.39
	(0.22)	(0.29)	(0.29)	(0.27)	(0.28)
Some college	0.69***	0.78**	0.59*	1.15***	0.23
	(0.18)	(0.24)	(0.25)	(0.21)	(0.26)
Married	0.001	-0.02	0.01	-0.13	0.15
	(0.11)	0.14	(0.12)	(0.13)	(0.23)
Welfare	-0.10	-0.11	-0.05	-0.26	0.07
	(0.16)	(0.2)	(0.19)	(0.19)	(0.23)
Intercept	-1.62**	-0.77	3.23	-1.76*	-1.66*
	(0.53)	(2.93)	(3.20)	(0.72)	(0.75)

Table 9

Model Fit Statistics for Latent Profile Models with Two to Five Profiles for Wave 3 Sample

# Profiles	Entropy	AIC	BIC	SaBIC	LMR	BLRT
Two	0.96	11275.8	11372.6	11312.3	0.000	0.000
Three	0.98	10808.7	10931.1	10854.8	0.6921	0.000
Four	0.99	9975.0	10122.8	10030.7	0.0001	0.0001
Five	0.99	9396.8	9570.1	9462.1	0.7303	0.000

Note. AIC = Akaike Information Criteria; BIC = Bayesian Information Criteria; SaBIC = Sample Size Adjusted Bayesian Information Criteria; LRT = Lo-Mendell-Rubin Likelihood Ratio Test; BLRT = Boostrapped Likelihood Ratio Test.

Table 10

Descriptive Statistics and Pairwise Comparison Results for Wave 3 Profiles

	Property Only	Nonviolent Antisocial	Non-Antisocial	Semi-Delinquents	Total
	n = 35	*n* = 13	*n* = 1,450	*n* = 146	*N* = 1,646
Individual characteristics					
Male gender	80.8%**	49.1%*	100%***	55.6%	51.0%
Wave 1 age	11.2*(1.43)**	12.12*(0.30)***	10.60*(1.53)**	10.7*(1.6)*	10.65
Black	34.6%**	60.0%	33.6%*	44.4%*	35.5%
Hispanic	38.5%	20.0%	47.7%	38.9%	46.3%
White or other	26.9%	20.0%*	18.7%	16.7%	18.2%
Maternal characteristics					
PC age at Wave 1	37.40*(7.42)*	37.70*(8.00)*	38.00*(7.42)**	41.94*(9.08)**	37.61*(7.64)*
PC is biological mother	84.3%***	65.4%	80.8%***	50.0%	64.2%
PC depressed	27%**	12%	17%	20%	40%
PC immigrant	35%	35%	44%*	10%	43%
PC education: Less than HS	41.7%	57.7%	40.4%**	30.0%	42.7%
PC education: HS diploma	12.0%	3.9%	14.0%	30.0%	13.1%
PC education: Some college	43.5%	38.5%	42.1%	40.0%	40.9%
PC marital status: Married	50.9%	46.2%	60.1%***	10.0%**	56.9%
PC marital status: Single	30.6%	42.3%	29.0*	80.0%**	31.0%
PC marital status: Partnered	17.6%*	11.5%	10.1%	10.0%	10.9%
PC employed	61.3%	53.9%	60.4%	70.0%	59.0%
Public assistance	37.8%	42.3%	27.8%***	30.0%	30.9%
Neighborhood characteristics					
Concentrated poverty W1	0.06*(0.67)*	0.15*(0.81)*	-0.02*(0.71)*	0.23*(0.70)*	-0.003*(0.70)*
Disorder W1	1.85*(0.32)*	1.89*(0.36)*	1.86*(0.34)*	1.97*(0.27)*	1.86*(0.34)*
Collective efficacy W1	3.91*(0.27)*	3.96*(0.33)**	3.87*(0.28)*	3.76*(0.24)*	3.87*(0.28)*
Variables of interest					
Youth-serving organizations	-1.65*(0.89)*	-1.79*(0.92)*	-1.76*(0.88)*	-1.87*(1.12)*	-1.74*(0.88)*
Activity participation	30.2%	36.0%	31.2%	10.0%	30.3%
FES Conflict W1	2.77*(1.95)*	2.72*(1.77)*	2.55*(1.94)**	3.44*(2.51)*	2.61*(2.52)*
SRO Violent W1	-2.08*(2.88)*	-2.11*(1.95)*	-0.94*(1.94)****	-2.57*(2.00)**	-1.10*(2.10)*
SRO Property W1	-1.23*(2.02)***	-1.92*(2.25)****	-0.71*(1.57)**	-1.60*(1.83)*	-0.78*(1.62)*
SRO Violent W3	-1.95*(1.83)****	-1.31*(1.62)***	-0.45*(1.04)****	-1.35*(1.72)**	-0.62*(1.24)*
SRO Property W3	-0.71*(0.18)****	1.03*(0.13)****	0.0004*(0.04)****	2.23*(0.53)****	-2.28*(0.33)*
CBCL Aggression W1	10.93*(6.80)****	8.00*(4.28)*	8.41*(6.45)****	17.80*(3.81)****	8.90*(6.88)*
CBCL Delinquency W1	2.08*(2.01)*	2.25*(1.67)*	1.66*(2.08)****	6.30*(4.95)****	1.85*(2.29)*
CBCL Aggression W3	7.43*(5.78)****	6.31*(4.33)*	5.33*(4.74)****	14.63*(9.09)****	5.60*(4.96)*
CBCL Delinquency W3	2.96*(2.83)****	3.04*(3.03)**	1.96*(2.22)***	8.38*(5.10)****	2.11*(2.40)*

Note. Difference tests compare members of each profile with rest of sample. ***p<.001; **p<.01; *p<.05

Table 11

Adolescents' Changes in Antisocial Behavior Profile Membership, Wave 1 to Wave 3

	Wave 1 Profile			
Wave 3 Profile	Overt Offenders	Out-of-home Antisocial	Non-antisocial	Semi-Delinquent
Property Only				
n	5	2	15	0
% of total	0.3%	0.1%	0.9%	0.0%
% of transitioners	0.9%	0.3%	3.2%	0.0%
Nonviolent Antisocial				
n	35	13	207	4
% of total	2.1%	0.8%	12.6%	0.3%
% of transitioners	7.2%	2.9%	43.7%	1.2%
Non-antisocial 3				
n	99	16	1175	7
% of total	6.0%	1.0%	71.4%	0.4%
% of transitioners	20.7%	3.5%	-	1.4%
Semi-Delinquent 3				
n	12	5	56	2
% of total	0.7%	0.3%	3.4%	0.1%
% of transitioners	2.3%	0.9%	11.8%	-

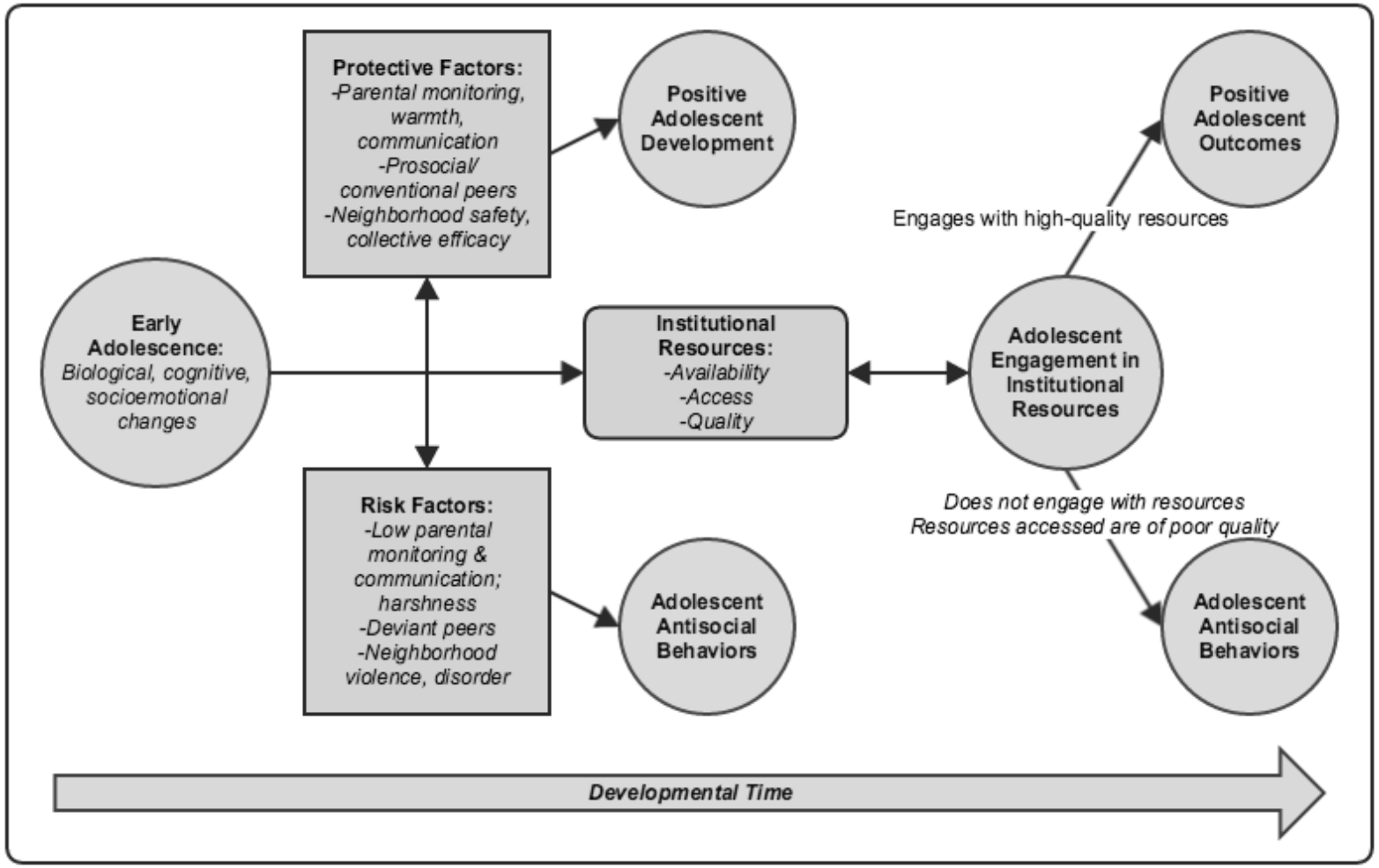

Figure 1. Conceptual model illustrating an integrative framework for influences on adolescents' behavioral trajectories in the context of institutional resource use

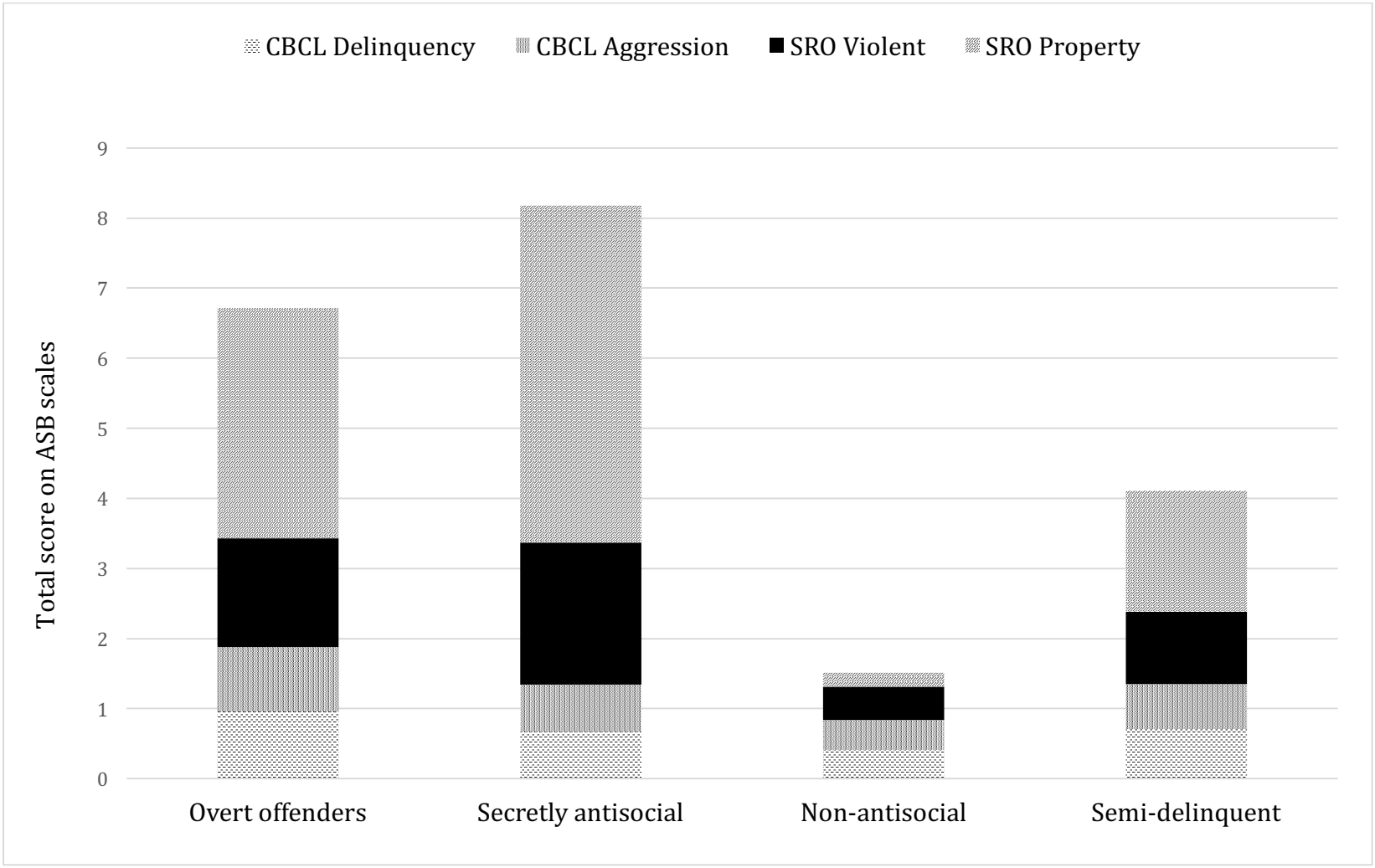

Figure 2. Four-profile solution for latent profile mixture model of antisocial behaviors at Wave 1

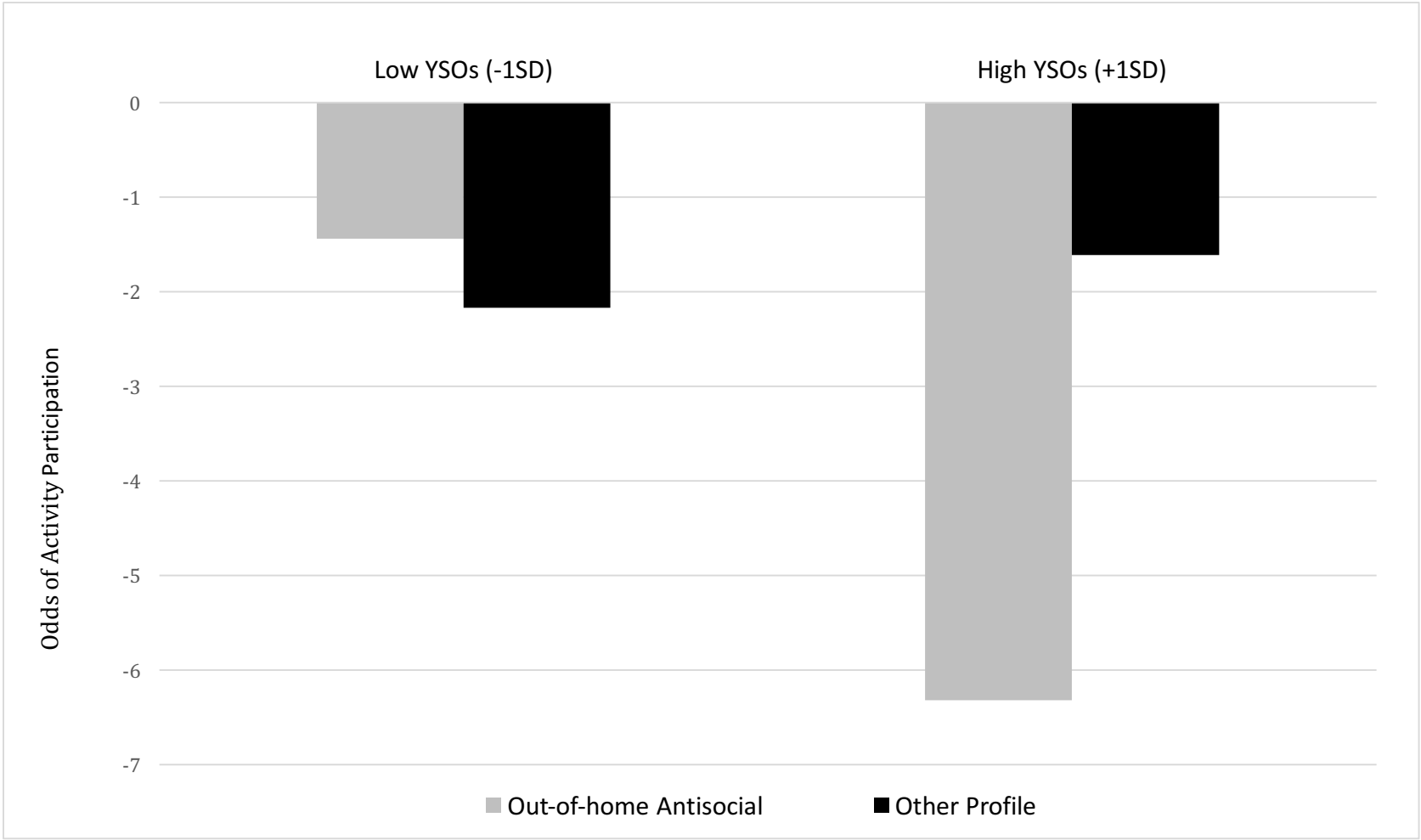

Figure 3. Membership in Profile 2 as moderator of association between availability of neighborhood institutional resources and adolescent boys' activity participation

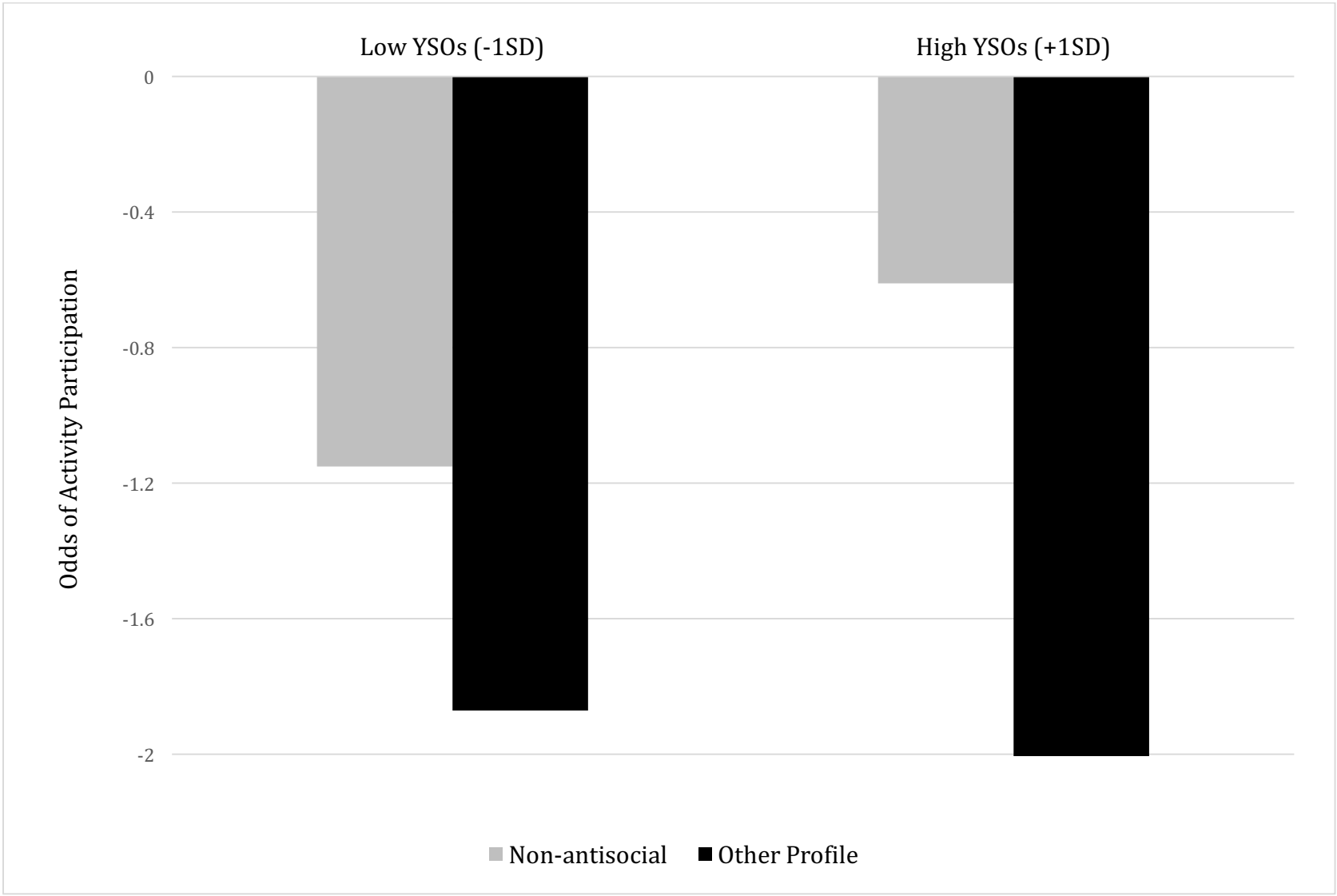

Figure 4. Membership in Profile 3 as moderator in association between availability of neighborhood institutional resources and adolescen activity participation

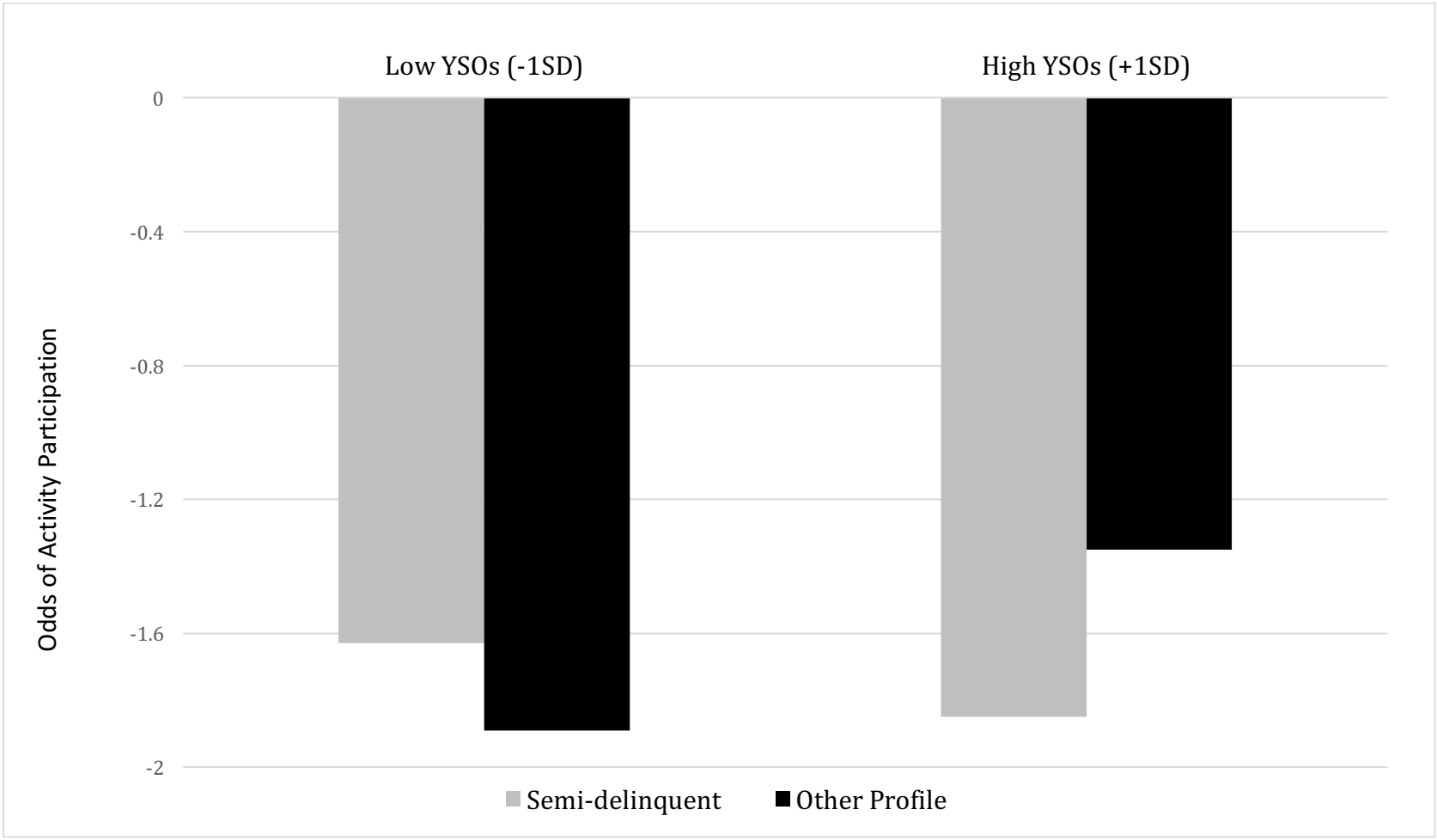

Figure 5. Membership in Profile 4 as moderator in association between availability of neighborhood institutional resources and adolescen activity participation

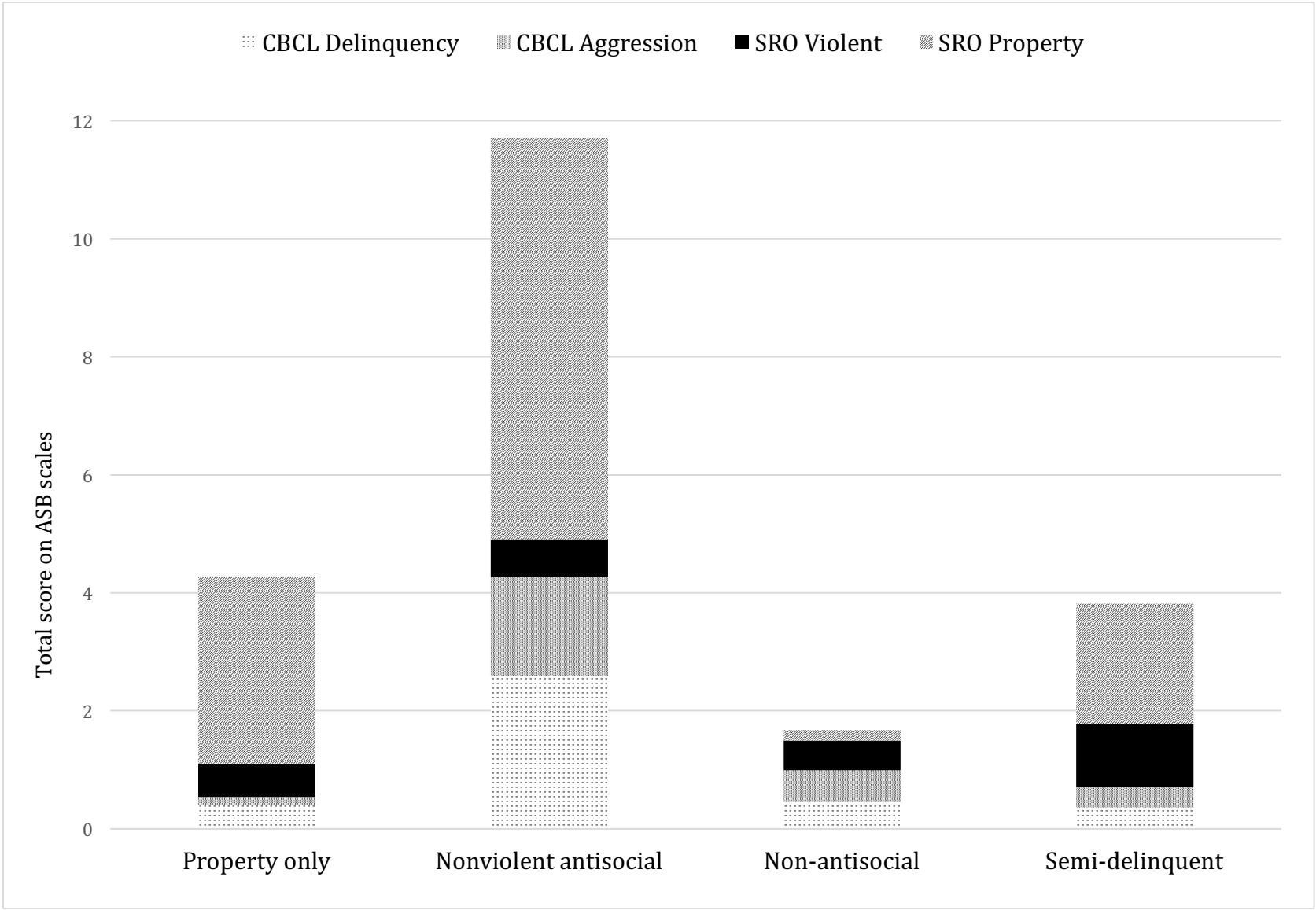

Figure 6. Four-profile solution for latent profile mixture model of antisocial behaviors at Wave 3

APPENDICES

APPENDIX A: Child Behavior Checklist Items

For each item that describes ***** now or within the past 2 months, please say "2" if the item is very true or often true of *****. Say "1" if the item is somewhat or sometimes true of *****. If the item is not true of *****, say "0".

Aggressive Behavior Subscale

- Cruelty, bullying, or meanness to others
- Demands a lot of attention
- Destroys things belonging to his/her family or others
- Disobedient at home
- Disobedient at school
- Gets in many fights
- Screams a lot
- Stubborn, sullen, or irritable
- Teases others a lot
- Temper tantrums or hot temper
- Threatens people

Delinquent Behavior Subscale

- Doesn't seem to feel guilty after misbehaving
- Hangs around with others who get in trouble
- Lies or cheats
- Prefers being with older kids
- Runs away from home
- Sets fires
- Swears or obscene language
- Truant, skips school

APPENDIX B: Self Report of Offending Items

I am going to describe some things that people do. First, tell me if you have ever done any of these things. Then I will ask you how many times you have done these things in the last year or last 12 months.

Violent Crime Subscale

- Hit someone with whom you lived in the past year with the idea of hurting them
- Hit someone with whom you did not live in the past year with the idea of hurting them
- Thrown objects such as bottles or rocks at people in the past year
- Ever carried a hidden weapon in the last year
- Ever maliciously set a fire in the last year
- Ever snatched a purse/picked a pocket in the last year
- Ever attacked with a weapon in the last year
- Ever used a weapon to rob someone in the last year
- Ever been in a gang fight in the last year

Property Crime Subscale

- Ever purposely damaged property in the last year
- Ever broke into a building to steal in the last year
- Ever stolen from a store in the last year
- Ever stolen from a household member in the last year
- Ever stolen from a car in the last year
- Ever knowingly bought/sold stolen goods in the last year

APPENDIX C: HOME Inventory Parental Monitoring Subscale

- Subject has a set time [curfew] to be home on school nights. Does ***** have a certain time he/she has to be home on school nights?
- Does ***** usually obey that rule?
- Does ***** have a certain time to be home on weekend nights?
- Does ***** usually obey that rule?
- Do you have any specific rules about homework? Do you check to see if it is done?
- Do you ever help ***** with his/her homework? (About how often?)
- Does ***** have to sleep at home on school nights or can he/she stay with friends?
- When you aren't at home, does ***** check in with you or anyone else?
- Where does ***** go after school? Are there any adults there?
- Do you have any rules about what ***** does with his/her friends?
- Do you talk to ***** about what he/she is doing?
- How much time can ***** spend in public places? (More than an hour?)
- Do you ever get to talk with *****Is friends? (About how often?)
- Do you get to talk with ***** every day about &/her day?
- Do you ever go to *****Is school or talk with the teacher or counselor there? When was the last time?
- Do you generally keep the TV on or do you turn it on for specific programs? Do you talk with ***** about different programs?
- Do you ever get to talk with ***** about what he/she sees on the news, or in newspapers or magazines? When was the last time?
- During the past year have you spoken with ***** about the dangers of alcohol and drug abuse?
- Is ***** allowed to drink beer, wine, or or alcohol at home?
- Do you feel familiar with the signs of drug use and keep an eye out for them?
- Has ***** been to a doctor or clinic for a check-up during the past year?
- Are things like bedtimes, mealtimes, daycare done about the same time everyday?
- Do you have rules for *****'s behavior? (Do you usually try to get him/her to follow them?)
- Do you have rules for the other members of the family? (Do you usually try to get them to follow them?)

APPENDIX D: Family Environment Conflict Subscale

You are to decide which of these statements are true of your current family and which are false.

- We fight a lot in our family
- Family members rarely become openly angry (reverse coded)
- Family members sometimes get so angry they throw things
- Family members hardly ever lose their tempers (reverse coded)
- Family members often criticize each other
- Family members sometimes hit each other
- If there's a disagreement in our family, we try hard to smooth things over and keep the peace (reverse coded)
- Family members often try to one-up or out-do each other
- In our family, we believe you don't ever get anywhere by raising your voice (reverse coded)

APPENDIX E: Structured Activities

In the last 12 months, <u>at school</u> have you been involved in:

- Orchestra, band, theater, drama, dance, or choir?
- Organized sports teams or athletics?
- Cheerleader, pom-pom, dance squad or pep club?
- Student government or student council?
- Have you been involved in any other school clubs? (Specify)

Now, I want you to think about things you have done OUTSIDE school. In the last 12 months have you been involved in:

- Church groups or religious organizations?
- Community activities, like the YMCA or Boys or [sic] Girls Club?
- Volunteer work?
- Organized sports teams?
- Music, singing, art, theater, or dance?
- Have you been involved in any other activities outside school?

APPENDIX F: Youth-Based Organizations

I am going to read you a list of services for children and adolescents. For each, please tell me if it is offered in your neighborhood. (Yes/No/Don't Know/Refuse)

- First, is there a youth center for children or adolescents in your neighborhood?
- How about recreation programs other than those offered at school (are these offered in your neighborhood)?
- Do the neighborhood schools offer after-school programs—academic and/or recreational?
- Are mentoring or counseling services offered, like a Big Brothers or Big Sisters program?
- Are mental health services offered for children and adolescents in your neighborhood?
- Are there any crisis intervention services offered to children and adolescents in your neighborhood?

APPENDIX G: Neighborhood Collective Efficacy

Social Cohesion
For each of these statements, please tell me whether you strongly agree, agree, disagree, or strongly disagree.

- This is a close-knit neighborhood
- People around here are willing to help their neighbors
- People in this neighborhood generally don't get along with each other (reverse coded)
- People in this neighborhood do not share the same values (reverse coded)
- People in this neighborhood can be trusted

Social Control
For each of the following, please tell me if it is very likely, likely, unlikely, or very unlikely that people in your neighborhood would act in the following manner:

- If a group of neighborhood children were skipping school and hanging out on a street corner, how likely is it that your neighbors would do something about it?
- If some children were spray-painting graffiti on a local building, how likely is it that your neighbors would do something about it?
- If a child was showing disrespect to an adult, how likely is it that people in your neighborhood would scold that child?
- If there was a fight in front of your house and someone was being beaten or threatened, how likely is it that your neighbors would break it up?
- Suppose that because of budget cuts the fire station closest to your home was going to be closed down by the city. How likely is it that neighborhood residents would organize to try to do something to keep the fire station open?