# EXPLORING RACIAL DISPARITIES IN YOUTH VIOLENCE: CONNECTING NEIGHBORHOODS AND PSYCHOSOCIAL DEVELOPMENT

By

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#### ABSTRACT

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Despite overall reductions in youth violence, racial disparities in violent offending and victimization persist, such that racial minorities disproportionately shoulder the burden of both. It is proposed that the antecedents of youth violence are the same for all youth, regardless of race and ethnic background. Instead, racial disparities in youth violence and victimization result from sociopolitical structures of racial inequality, which historically isolate racial and ethnic minorities into underserved communities, where contact with risk is more likely. Youth violence scholarship has explored the ways community structures, such as physical disorder, social disorder, policing, and community violence, influence community perceptions, norms, and behaviors as well as individual youth behavior and development. However, many of these inquiries have occurred separately within siloed disciplines and are rarely integrated together. The purpose of this dissertation is to use a framework from human development, known as sociocultural development, to organize race-focused inquires regarding youth violence and test the relevance of several, multilevel risk factors on youth socioemotional development and violent behavior.

Using data from the Project on Human Development in Chicago Neighborhoods (PHDCN), this dissertation explores the relationships between neighborhood physical disorder, community perceptions of danger, community perceptions of policing, and frequency of violence exposure on youth internalizing symptoms, externalizing symptoms, and violent offending. A combination of hierarchical linear modeling and individual growth curve modeling were used to assess multi-level impacts on neighborhood perceptions and youth outcomes. Results indicate that higher levels of neighborhood physical disorder predict greater individual perceptions of neighborhood danger and less positive attitudes towards the police. However, these perceptions at the community level did not significantly influence individual youth violence. Individual growth curve models assessed between-and within-individual change in violence exposure, internalizing symptoms, externalizing symptoms, and violent offending. Results indicate that youth display fairly similar rates of change in all dependent variables, but that early exposure to violence and neighborhood physical disorder significantly predict where youth "start" in their trajectories. Consistent with race-invariance perspectives, Black youth, in particular, report higher frequencies of violence exposure, which places them above White and Hispanic/Latino youth in externalizing issues and violent offending. However, trajectories of violence exposure were unique for Hispanic/Latino youth, indicating the need to further explore sources of risk and resiliency for this diverse group of youth. In addition, more research should be conducted to explore the unique ways Black and Hispanic/Latino youth, families, and communities adapt to violence exposure and disorder in order to tailor youth violence prevention initiatives that are strengths-based and relevant.

Copyright by ROBERTA LIGGETT 2021 This dissertation is dedicated to the memory of my father, Robert G. Liggett Jr.

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#### CHAPTER 1: STATEMENT OF THE PROBLEM

# Introduction

Youth violence is a global public health and safety concern with significant human and financial costs (World Health Organization, 2020). In the United States, homicide is the third leading cause of death for young people ages 10-24 years old, and approximately 1,100 young people are treated in emergency departments for non-fatal injuries each day (Center for Disease Control, 2020). It is estimated that the United States spends over 20 billion dollars a year to cover financial costs associated with youth violence, such as medical expenses and loss of work (Center for Disease Control, 2020). Youth may also experience violence as an offender, leading them down a path of juvenile justice contact. In 2018, over 46,000 juveniles (i.e., minor children under the age of 18 years old) were arrested for violent crimes, such as homicide, robbery, and aggravated assault, and another 17,170 juveniles were arrested on weapons charges (Puzzanchera, 2020).

Early violence victimization and indirect exposure (e.g., witnessing violence) can reroute the course of a child's development, leading to a constellation of psychosocial challenges. For instance, youth violence exposure is associated with later psychopathology (W. Y. Chen, 2010; Heim & Nemeroff, 2001; Sumner et al., 2015; Turner & Lloyd, 1999), physical health problems (Campbell et al., 2016; L. K. Gilbert et al., 2015; Reuben et al., 2016), and reduced income (Macmillan, 2000). Most concerning, youth violence exposure is a strong predictor of future violent behavior (Farrell & Bruce, 1997; Gorman-Smith et al., 2010; Guerra et al., 2003; Jennings et al., 2018; Myers et al., 2018), leading to a cycle of behavior in which violence begets more violence (Maxfield & Widom, 1996).

Despite recent upticks in violent crime over the last three years (Tucker & Nickeas, 2021), the United States has experienced significant declines in violent crime since the 1990s (Zimring, 2007) and a gradual decline in youth violence from 2002-2014 (Salas-Wright et al., 2017). However, youth violence trends continue to exhibit strong racial disparities that have endured throughout this period of decline (Herrenkohl, 2017). Specifically, racial minorities are more likely to be both victims and perpetrators of violence (Salas-Wright et al., 2017; Sumner et al., 2015). Thus, the next step for youth violence prevention and scholarship rests on our ability to understand the mechanics underlying these racial disparities.

In this dissertation, I argue that a major barrier to this agenda is the fractured nature of violence scholarship. In addition, I argue that sociocultural perspectives of human development provide a uniquely useful framework in which to integrate and organize inter-disciplinary research on youth violence. In line with race-invariance perspectives (Wilson, 2012), I posit that racial disparities in violent offending endure due to structures of racial inequality, which place racial minorities in more frequent contact with significant risk factors, such as poverty and violence exposure. Congruent with sociocultural perspectives, I posit that these risk factors significantly impact youth psychological development (Spencer et al., 1997) and alter community perceptions of safety and police efficacy (Anderson, 1998), which together sustain youth violent behavior. As such, youth violence prevention efforts must consider the role of sociopolitical forces on the health of communities and youth, and integrate the sociopolitical and community systems into comprehensive violence prevention efforts.

# **Statement of the Problem**

The relationship between race and violence is one of criminology's "hard problems" (Sampson, 2013, p. 3). Racial minorities are more likely to be victimized by and engage in

violence (Fenimore et al., 2019; Krivo et al., 2009; Sheats et al., 2018), yet explaining these racial disparities remains a difficult endeavor.

Advancing our understanding of the race-violence overlap requires a theoretical framework that connects the sociopolitical landscape, the neighborhood, and the individual in a dynamic system of mutual influence. Theoretical perspectives from sociology, criminology, and developmental psychology argue that neighborhood structure, such as physical disorder, concentrated poverty, and community violence exposure, influence violent crime (Bursik & Grasmick, 1993; Peterson & Krivo, 1993, 2005; Sampson et al., 1997; Sampson & Wilson, 1995), youth development (Brooks-Gunn et al., 1993; McCoy et al., 2015; Raver & Blair, 2020; Spencer et al., 1997), and youth violent behavior (Allen & Javdani, 2016; Anderson, 1999). However, more research is needed that 1) links neighborhood- and individual-level predictors of youth violence to the sociopolitical landscape, and 2) outlines the developmental importance of these predictors on youth violent behavior over time.

Following the tradition of sociocultural theories of development (e.g., Bronfenbrenner, 1977; Rogoff, 2003; Vygotsky, 1978; Whiting, 1980), as well as Robert Sampson's (2012; 2013) contextual causality framework, this dissertation argues that individuals, youth, and communities respond and adapt to the sociopolitical context that surrounds them. The sociopolitical context is defined as the formal (e.g., political, legal, and educational systems) and informal (e.g., cultural norms, values, beliefs, and prejudices) "blueprints of society" (Bronfenbrenner, 1977, p.515). Formal and informal blueprints, though malleable across history (Rogoff, 2003), are powerful enough to influence a neighborhood's structure by impacting that neighborhood's access to valuable resources and investment (Bonilla-Silva, 1997; Massey, 2007; Rothstein, 2017). Neighborhoods subjected to resource deprivation experience both community- and individual-

level changes that endure spatially and temporally (Brooks-Gunn et al., 1997; Garcia Coll et al., 1996; McLoyd, 1998; Sharkey, 2008; Wilson, 2012). For instance, communities adapt their perceptions, values, and norms in response to the structural realities of their neighborhoods, such as high physical disorder and community violence (Anderson, 1999; Garcia Coll et al., 1996; Ross & Mirowsky, 2006, 2009). According to sociocultural perspectives, developing youth are similarly impacted by both the neighborhood and the adaptive community mindset, which guides their behavior and psychological functioning over time (Geronimus et al., 2006; McLoyd, 1998; Spencer et al., 1997). However, limited empirical research has explored the ways community mindsets specifically effect youth violent behavior. Thus, it is important to understand whether community perceptions impact youth behavior, and whether these perceptions are influenced by neighborhood structure and race. In addition, it is important to understand how early exposure to risk, such as poverty, disorder, and violence impact youth socioemotional development and violent behavior over time.

# **Dissertation Goals and Organization**

This dissertation is guided by three goals: 1) identify the key sociopolitical, neighborhood, and individual variables that predict youth violence; 2) describe sociocultural perspectives of human development and discuss their utility as a framework suited to connect risk factors existing at the sociopolitical, neighborhood, and youth levels together in order to predict youth violent offending; and 3) use multilevel and longitudinal analysis techniques to understand how these variables impact between-individual and within-individual differences in youth violent behavior in Black and Hispanic/Latino adolescents.

This dissertation is organized into six chapters. Chapter 2 provides a literature review outlining the important sociopolitical, neighborhood, individual, and developmental factors that

influence youth violence, violent crime in general, and racial disparities in violence. Chapter 3 summarizes the need for integrative violence research and presents a process-structure approach to integration. This integration strategy is extended to describe a theoretical framework— sociocultural developmental theory—which I argue is a useful framework for understanding violence and youth violence research, especially when considering the developmental impacts of neighborhoods and violence exposure on Black and Hispanic/Latino youth. Chapter 4 describes the methodology and analysis plan of this dissertation. Hierarchical linear modeling was used to understand between-neighborhood and within-neighborhood impacts on community perceptions of danger and police efficacy. Individual growth curve modeling was employed to understand how key neighborhood and individual factors predict changes in youth violent offending overtime. Chapter 5 presents the study results and Chapter 6 includes a discussion of the findings, study limitations, and implications for future research.

# CHAPTER 2: MULTILEVEL PREDICTORS OF YOUTH VIOLENCE

# Introduction

Despite overall reductions in violent crime over the last three decades (Morgan & Oudekerk, 2019), understanding the causes of youth violence is an ongoing challenge. Part of this challenge originates from the ecological<sup>1</sup> and disciplinary silos present in violence scholarship (Hamby, 2011; Hamby & Grych, 2013). Hamby and Grych (2013) argue that violence scholarship tends to either focus on specific topics (e.g., child maltreatment, gun violence, intimate partner violence, terrorism, sexual violence, etc.) or distinct levels of analyses, such as situational, environmental, developmental, or individual-level predictors of youth violence and aggression. Oftentimes, these research agendas are housed within disciplinary silos (e.g. psychology, sociology, criminal justice, and political science) which rarely cross-communicate and adhere to different, and sometimes conflicting, theoretical traditions (Bernard & Snipes, 1996; Hamby, 2011; Hamby & Grych, 2013).

One solution is to outline findings across disciplines to identify common environmental and individual risk factors predicting youth violence and aggression. This process would illuminate the different "structures" that increase violence risk. The goal of this chapter is to summarize a wide breadth of youth violence research existing across several scholarly disciplines, thus giving life to the challenge identified by Hamby and Grych (2013). For clarity, Chapter 2 will be organized by ecological level, starting with a summary of the sociopolitical context of violence and ending with a review of the individual antecedents of youth violence and

<sup>&</sup>lt;sup>1</sup> The term *ecological* is used to describe multilevel units of analyses and is compatible with Bronfenbrenner's (1977) usage of the term in his bioecological theory of development. In agreement with Hamby and Grych (2013) and Sampson (1989), I argue that research is often divided along ecological units of analysis (e.g. neighborhood level, family level, peer level, school level, individual level, and time). However, in reality, each individual is nested within all ecologies and each ecological level impacts development (Bronfenbrenner, 1977).

aggression. Each section will end with describing the main hypotheses to be tested in this study. In addition, Chapter 2 will end with a summary of the current gaps that prevent the integration of youth violence scholarship. Specifically, I argue that neighborhood-level and developmental research remain disconnected. As a result, it is difficult to understand how early exposure to neighborhood structures and community processes impact changes in youth violence behavior in adolescence. In addition, several disciplines focused on youth violence neglect the importance of ethnic culture and adaptive culture in their understanding of risk and resilience. Sociocultural perspectives, describe in Chapter 3, may be well suited to fill these gaps.

## The Sociopolitical Context of Violence: Understanding Racial Disparities

Racial minorities are disproportionately more exposed to community violence (Osofsky et al., 1993; Selner-O'Hagan et al., 1998; Sheats et al., 2018; Sumner et al., 2015), are more likely to die by homicide (Heron, 2019), and are more likely to participate in violent crime (D. F. Hawkins, 1983) than their White American counterparts. Yet, few social science theories fully investigate the sociopolitical context driving these racial disparities (Allen & Javdani, 2016; McLoyd & Randolph, 1985; Peterson, 2017; Raver & Blair, 2020; Russell, 1992).<sup>2</sup>

As previously stated, the sociopolitical context is comprised of the formal and informal systems that structure a community. According to Bronfenbrenner (1977), the sociopolitical context, which he refers to as the *macrosystem*, "refers not to the specific contexts affecting the life of a particular person but to general prototypes, existing in the culture or subculture, that set the pattern for the structures and activities occurring at the concrete level" (p. 515). Thus, neighborhood structure, institutions, and informal social structures manifest from the general

<sup>&</sup>lt;sup>2</sup> See Anderson's (1999) social ecology of youth violence, Unnever and Gabbion's (2011) theory of African American offending, Simons and Burt's (2011) social schematic theory, Garcia-Coll et al.'s (1996) integrative model for the study of developmental competencies in minority children, and Spencer, Dupree, and Hartmann's (1997) PVEST as some of the few notable exceptions.

"blueprints" (Bronfenbrenner, 1977, p.515) provided by the sociopolitical system.

Bronfenbrenner (1977) argues that while some elements of the sociopolitical context, or macrosystem is explicitly formalized through recorded laws, much of the sociopolitical context is informal and implicit, such that a shared ideology and attitude is sometimes unconsciously and "unwittingly" (p.515) carried between individuals. One goal of sociocultural perspectives of development is to outline how the sociopolitical-level creates patterns in concrete structures and daily activities, and how these structures and daily activities impact youth development and behavior (Rogoff, 2003).

Compatible with the conceptualization of the sociopolitical context as a set of blueprints, Bonilla-Silva (1997) argues that the United States operates as a racialized social system, which he defines as a society "in which economic, political, social, and ideological levels are partially structured by the placement of actors in racial categories or races" (p.469). In racialized social systems, placement into socially-constructed racial categories follows a hierarchy, which establishes relationships between racial categories (Bonilla-Silva, 1997) and organizes a group's access to scarce resources, such as income, prestige, or social standing (Massey, 2007). Racialized social systems may move from overt structures of racial inequality, exemplified by formalized rules that excluded racial minorities from participating in multiple spheres of social life (Rothstein, 2017), towards covert systems that morally reject racism and discrimination, but fail to correct for past, pervasive racial social structures, allowing them to endure in contemporary society (Bonilla-Silva, 1997). As a result, while individual racism and racist attitudes may dissipate overtime<sup>3</sup>, racial structures remain.

<sup>&</sup>lt;sup>3</sup> Bonilla-Silva's (1997) main argument is to reframe racism away from the individual level and towards the structural level. As a result, scholars and stakeholders are able to understand why racial inequality and disparities remain despite advancements in civil rights. However, it is important to note that moral rejection of racial and ethnic

For example, residential segregation is an enduring and visible form of racial stratification in America (Anderson, 2012; Massey, 1990; Rothstein, 2017; Sharkey, 2008). Formalized laws, rules, and regulations present in Southern and Northern U.S. states from 1886 through the1960s operated to formally segregate racial minorities, particularly Black Americans, into less desirable neighborhoods and prevent newly constructed residential neighborhoods from becoming racially integrated (Massey, 1990; Rothstein, 2017). In addition, Black Americans living in the South proceeded to migrate to Northern cities in order to escape the confines created by the Jim Crow laws, often settling in urban areas where they possessed kinship and friendship ties (Wilkerson, 2010).

It is theorized that a combination of historical racial segregation (Massey, 1990), the loss of manufacturing jobs, and rapid suburbanization from the 1950s-1970s (Wilson, 2012) facilitated the creation of a racial underclass, which primarily impacted Black and Puerto Rican Americans and isolated these groups within cities (Massey & Denton, 1988). As Massey (2007) writes, "spatial segregation renders stratification easy, convenient, and efficient because simply by investing or disinvesting in a place, one can invest or disinvest in a whole set of people" (p. 19).

The intersection between race and poverty in American neighborhoods overlaps with violent crime, such that underserved minority neighborhoods shoulder the load of both violent crime rates (Krivo et al., 2009) and chronic disinvestment (Anderson et al., 2012; Massey, 2007; Rothstein, 2017). Although this dissertation does not directly test the link between racial social

prejudice as well as the creation of new civil rights protections does not necessarily mean that individual racism disappears. Indeed, several scholars have studied the phenomenon of implicit racial bias on the minority experience in America (Fiske, 1998, 2004). In addition, narratives of overt and covert forms of racism has been shown to impact minority health (Paradies et al., 2015; Quintana, 2007). However, it is possible that many of these covert and implicit forms of individual racism stem from the continued presence of racialized structures and institutions (Hinton & Cook, 2020; Isom & Bullard, 2016; Krivo et al., 2009; Massey, 2007; Massey et al., 2009; Phillips & Bowling, 2003).

structures and poverty, it is hypothesized that a sociopolitical context of racial inequality will be manifested in residential segregation, such that racial minorities will live in more impoverished areas than their White American counterparts.

## **Neighborhoods and Youth Violence**

The race-invariance perspective argues that the causes of violence are racially invariant, meaning that they are the same for all individuals regardless of race (Gottfredson & Hirschi, 1990; Krivo & Peterson, 2000; Sampson & Wilson, 1995). Risk factors that support criminal offending and youth violence exist within multiple, nested ecologies, such as the neighborhood, school, family, peer, and individual levels (Catalano & Hawkins, 1996; Farrington, 2019; Farrington & West, 1990; Hamby, 2011; Moffitt, 1993; West, 2019). Thus, racial disparities in crime and youth violence originate from enduring patterns of residential segregation and economic disinvestment, both of which place racial minorities in close contact with these risk factors (Krivo & Peterson, 2000; Stewart & Simons, 2007).

This dissertation focuses specifically on risk factors occurring at the neighborhood and individual level. In this section, I will describe two neighborhood-level risk factors: physical disorder and community perceptions. As an extension of the previous section, I argue that racial minorities are more likely to be segregated into neighborhoods with high levels of physical disorder, a dimension of concentrated disadvantage. In addition, I argue that living in underserved neighborhoods shapes residents' perceptions of danger and policing, both of which may influence youth propensity to engage in violent behavior.

*Physical Disorder*. The physical condition of a neighborhood provides strong visual cues to residents and visitors. Physical disorder refers to the observable remnants of crime and poverty, such as abandoned buildings, graffiti, and litter (Sampson & Raudenbush, 1999).

Empirical research that directly links physical disorder with neighborhood crime is mixed (Braga et al., 2015; Welsh et al., 2015), however, physical disorder is strongly correlated with concentrated disadvantage (Sampson & Raudenbush, 1999). Concentrated disadvantage is composed of several structural features: unemployment, social disorder, family disruption (i.e., single-parent households), and household poverty (Sampson et al., 1997). Concentrated disadvantage overlaps with several epidemiological sources of stress, much of which reflects a chronic trend of economic and social disinvestment (Anderson, 2012; Anderson et al., 2012; Anderson & Massey, 2001).

Despite advancements in civil rights legislation over the last forty years, racial residential segregation persists today, especially in urban neighborhoods (Sharkey, 2013). Racial minorities are more likely than White Americans to live in the poorest quarter of neighborhoods and are less likely to successfully migrate out of poverty (Sharkey, 2013). Indeed, to separate racial segregation from concentrated disadvantage is virtually impossible, as statistical investigations find that hardly any White American families live in the most impoverished areas (Morenoff et al., 2001; Sampson et al., 1997; Sampson & Wilson, 1995).

Racial minorities living in poverty are disproportionately more likely to experience community-level violence (Richards et al., 2015; Selner-O'Hagan et al., 1998; Sheats et al., 2018), limited access to health care (Bustamante et al., 2012; Hacker et al., 2015), chronic disease (Ferraro & Shippee, 2009), food insecurity (Cheng et al., 2019; Coleman-Jensen et al., 2019), and financial strain (Abrego & Gonzales, 2010; Huston et al., 1994).

*Neighborhood Perceptions*. Neighborhoods, residents, and youth are not "empty vessels solely determined by external or global forces" (Sampson, 2013, p.4). Instead, neighborhood residents and youth actively adapt to the social conditions around them. These adaptations may

be positive, such as cultivating strong cultural customs (Garcia Coll et al., 1996; Quintana, 2007) and utilizing extended social networks for emotional, financial, and childcare assistance (Chatters et al., 2018; McAdoo, 1985). Other adaptations may be tied directly to the various sources of stress that overlap with being both a racial minority and living in poverty.

Neighborhood structures bleed into community consciousness and shape community members' orientations, attitudes, and perceptions (Ross & Mirowsky, 2006; Simons & Burt, 2011; Spencer et al., 1997). Community adaptation in the face of oppression and disadvantage is a developmental dimension unique to underserved populations (Garcia Coll et al., 1996; Garcia Coll & Szalacha, 2004; Jarrett, 1997). As active observers and meaning makers, community residents engage in processes that impact their perceptions of the neighborhood and how residents socially interact with each other (Arioli et al., 2018; Ross et al., 2001; Ross & Mirowsky, 2009; Sampson, 2013; Simons & Burt, 2011).

Previous research outlines three social mechanisms, perceptions of social disorder, legal cynicism (a distrust and disregard for legal norms and structures), and collective efficacy, as key mediators that link concentrated disadvantage with community crime and violence (Kirk & Papachristos, 2011; Sampson, 2012, 2013; Sampson & Bartusch, 1998, 1999). Specifically, residency in underserved neighborhoods increases perceptions of social disorder (Sampson, 2013), distrust in the law (Sampson & Bartusch, 1998), and distrust in neighbors (Ross & Mirowsky, 2006, 2009), which prevents collective efficacy, a social process that embodies both social cohesion and shared expectations among neighbors (Sampson, 2006). A lack of collective efficacy erodes the effective use of informal social control, resulting in higher rates of community violence (Kirk & Papachristos, 2011; Sampson & Bartusch, 1999). In addition, the presence of physical disorder, such as graffiti, litter, and drug paraphernalia provide strong visual

cues to community residents, which can increase their fear of victimization (Skogan, 1990; J. Q. Wilson & Kelling, 1987). Thus, the structural elements of racial inequality are closely coupled with the structural realities of neighborhoods, which inform community perceptions, social organization, and social action.

In addition, the high representation of Black and Hispanic/Latino Americans within all levels of the criminal justice system (Chauhan & Mulligan, 2020; Hinton & Cook, 2020; Piquero, 2008) promote deep-seated distrust in police (Carr et al., 2007; A. D. Fine et al., 2020) and other government institutions (Fong, 2019). Black inner-city youth are more likely to be stopped and frisked by police (J. Fagan & Geller, 2015; Jones, 2014; Piquero, 2008) and arrested for low-level offenses (Chauhan & Mulligan, 2020; Slocum et al., 2020; Unnever, 2014). Further, historical tension between Black Americans and police continue to influence community orientations towards the law and broader society (Walker et al., 2018). Negative encounters with police officers can lead to distrust in the criminal justice system (Carr et al., 2007; Hitchens et al., 2018; Lacoe & Sharkey, 2016; Rosenbaum et al., 2005), and an "air of injustice" in the community (Anderson, 1998; Isom, 2016), which leads to legal cynicism (Cavanagh et al., 2020; J. Fagan & Tyler, 2005). Perceptions of police bias and legal cynicism have been associated with greater community violence (Kirk & Papachristos, 2011; Sampson & Bartusch, 1998, 1999).

Aside from community-level attitudes and perceptions, violent offending may also manifest as an adaptive strategy in the face of dangerous environments (Anderson, 1999; Ness, 2004; Outland, 2019). Combining elements of spatial segregation, structural racism, and culture, Elijah Anderson (1998) suggests that violent victimization, social isolation, and historical tensions with law enforcement facilitate a communal sense that the urban, African American neighborhood is "on its own" (p. 67). Although individuals living in isolated, underserved areas

value conventions of safety, order, and peace, negative police encounters facilitate a skepticism about laws and the legal system (i.e. legal cynicism), which in turn increases law-violating behavior (Gifford & Reisig, 2019; J. M. Lee et al., 2010; Reisig et al., 2011).

Anderson (1999) proposed that communities adapt to their isolation and a milieu of racial discrimination through the creation of new attitudes and values, such as a "street code," which regulates and orders social encounters. The street code involves norms of give-and-take, reciprocity, and payback which normalizes the use of violence as a form of reputation management, mostly with the goal of minimizing one's personal victimization by acting tough (Anderson, 1999). As a result, being able to handle or avoid violence is an important, adaptive skill for inner city youth that must be developed (Anderson, 1999; Jarrett, 1997; Ness, 2004). Based on this literature, it is hypothesized that resident race and neighborhood physical disorder will predict greater perceptions of danger and less favorable perceptions of police.

In support, research has found that youth exposure to community violence was positively associated with greater police biases and greater adoption of street codes, which subsequently led to greater engagement in violent offending (A. Fine et al., 2020). In addition, adoption of norms in favor of a general "toughness" predicted greater, and more serious, levels of youth victimization in schools (Wilcox, 2020). Stewart and Simmons (2007) partial test of Anderson's (1999) code of the street thesis found that living in neighborhoods marred by concentrated disadvantage and growing up in "street" families significantly predicted youth adoption of a street code, which predicted higher use of violence, among Black American youth.

However, one gap in Anderson's (1999) social ecology of youth violence is the general neglect of individual youth development and psychology (Ness, 2004). For instance, Ness's (2004) ethnography of youth violence among racially-diverse, inner-city girls argues that

although girls and boys living in segregated, urban, and under-served communities share common norms about fighting and standing one's ground, there are important individual differences in girls' frequency of fighting and severity of violent offending. Ness (2004) argues that these individual differences are fueled by individual psychosocial development, such as one's capacity for emotional regulation, as well as unique life experiences, such as stressful family conditions and greater exposure to adversity.

# Neighborhood Impacts on Youth Development and Violent Behavior

Adolescence is a developmental period defined by affective, cognitive, and social changes that scaffold emerging identities (Spencer et al., 1997; Steinberg, 2005). Living in poverty has significant ameliorative impacts on youth development and behavior (Brooks-Gunn et al., 1993, 1997; Evans & Kim, 2012; McLoyd, 1998; Perry et al., 2019). However, not all youth living in the same neighborhood go on to offend or engage in violence (Tonry et al., 1991). Therefore, certain between-individual differences in environment and temperament must also help to explain violence. In this section, I will present scholarship on individual differences in violent offending, focusing on two socioemotional constructs: internalizing and externalizing symptoms. Next, I will summarize a large body of literature establishing community violence exposure as a key structural condition of underserved neighborhoods that has profound impacts on youth development and behavior.

*Internalizing and Externalizing Symptoms and Violence*. Individual-level research on aggression and violence point to several socioemotional and cognitive antecedents. For example, individual variability in emotional regulation (Kimonis et al., 2011), hostility bias (Chang et al., 2003), self-efficacy (Bandura, 1983, 1991), and impulsivity (Lovallo, 2013; Meldrum et al., 2019; Shin et al., 2018) all significantly predict youth violence and aggression (Crick & Dodge,

1994; Farrell & Bruce, 1997; Fix et al., 2018; Novaco, 2011). Internalizing and externalizing issues have emerged as two significant, broadband constructs used to identify anxiety/depressive symptoms and acting out behaviors, respectively (Achenbach, 1991; Ullsperger & Nikolas, 2017). Internalizing and externalizing symptoms are fairly stable from childhood through adolescence in samples of clinical youth (Mattison & Spitznagel, 1999) and predict several adjustment difficulties in adulthood, such as worse mental health (Holtmann et al., 2011; Kosterman et al., 2010), lower-occupational status, and reduced social mobility (Alatupa et al., 2013).

Internalizing and externalizing symptoms are also predictive of violence and aggression. Analysis of a large nationally representative sample of youth found high levels of internalizing and externalizing problems among a subsample of youth identified as highly antisocial (Vaughn, Salas-Wright, Delisi, et al., 2014). Externalizing, in particular, is associated with several overlapping psychosocial constructs, such as low self-control, impulsivity (Vaughn, Salas-Wright, Delisi, et al., 2014), and conduct disorder (Krueger et al., 2005).

*Community Violence.* Exposure to acute and chronic sources of adversity and stress are some of the most significant risk factors for childhood and adolescent psychopathology and later antisocial behavior (Brooks-Gunn et al., 1993, 1997; Compas et al., 2017; Gorman-Smith & Tolan, 1998; Gustafsson et al., 2014; Lorion & Saltzman, 1993; McLoyd, 1998; Shin et al., 2018).

Although community violence is considered a prominent feature of concentrated disadvantage, the frequency, chronicity, and severity of violence exposure is variable across children and associated with a range of consequences (Lorion & Saltzman, 1993; Martinez & Richters, 1993; Richters, 1993). For instance, research on justice involved youth find that every

additional adverse childhood event reported by a child increased the likelihood that they would be identified as a serious, chronic, violent offender by 35% in adolescence (Fox et al., 2015).

Empirical research has found a direct effect between community violence exposure and later violent offending (Gorman-Smith et al., 2010; Gorman-Smith & Tolan, 1998; Moffitt & The Klause-Grawe 2012 Think Tank, 2013; Myers et al., 2018; Salzinger et al., 2006; Wright & Fagan, 2013). This association most likely operates through an cumulative stress model in which compounding adversity interrupts and alters emotional development (Cauffman et al., 2005; Jaffee et al., 2007; Moffitt, 1993). Children exposed to community violence are more likely to be hypervigilant (Dusing et al., 2019; Heissel et al., 2018), impulsive (Meldrum et al., 2019; Shin et al., 2018), emotionally reactive (Kimonis et al., 2011; Lynam et al., 2000), and experience greater internalizing and externalizing symptoms (Ma et al., 2020; Schwab-Stone et al., 1999). Based off this literature, it is hypothesized that Black and Latino/a youth will report higher violence exposures than White participants, and that heightened levels of violence exposure will increase youth internalizing symptoms, externalizing symptoms, and violent offending.

*Time.* Antisocial behavior in adolescence is common and ephemeral, diminishing substantially by adulthood (Farrington, 1986; Moffitt, 1993; Steffensmeier et al., 1989). Thus, only a small number of youth contain substantial risk-factors that promote engagement in serious violence (Caspi et al., 1987; Cauffman et al., 2005; Loeber, 1982; Moffitt, 1993; Robins, 1978). Although not all violent children go one to become violent adolescents and young adults (Byrd et al., 2012; Hay et al., 2017; Jaffee, 2007; Stouthamer-Loeber et al., 2004), childhood antisocial behavior is a significant predictor of future violence (Loeber, 1982; Loeber & Farrington, 2000; Robins, 1978).

As a result, this dissertation focuses specifically on adolescent violence and utilizes longitudinal analyses to understand changes in youth violence and violence exposure overtime. It is hypothesized that youth will display a linear increase in violent offending across the three waves of data collection, since these collection waves represent movement into adolescence, which is characterized as the peak period of offending (Farrington, 1986). Consistent with developmental criminological perspectives, I also hypothesize that youth who report offending at Wave 1 will display an individual growth trajectory that signifies higher levels of violent offending than youth who did not engage in violence at Wave 1, and a steeper rate of increase in offending across the three waves.

# CHAPTER 3: CREATING AN INTEGRATIVE FRAMEWORK

# Introduction

Chapter 2 highlights a constellation of multilevel variables important in understanding violence and racial disparities in violent victimization and offending. Although summarized together, many of these findings continue to exist in the silos described by Hamby and Grych (2013), which hinder theoretical cultivation. For example, race-invariance research in criminology exists predominately at the neighborhood level. Macro-level research focuses on the connection between racial residential segregation, neighborhood structures (e.g., poverty, disorder, and financial disinvestment), and crime rates. However, these structural determinants provide little insight regarding *how* the neighborhood context impacts criminal behavior at the individual level (Sampson, 1989; Sampson & Wilson, 1995). In addition, research focused predominately at the individual-level tends to theoretically elaborate models of aggression and violence (e.g., Bandura, 1983; Dodge et al., 1990; Huesmann, 1988; Novaco, 2011), that are rarely anchored in the sociopolitical context (Allen & Javdani, 2016).

Answering this question involves synthesizing the structural predictors and social processes into a cohesive framework (Hamby, 2011). In this chapter, I describe a structure-process integration strategy and present a cohesive framework, sociocultural development, that I argue best allows scholars to integrate multiple multi-level variables together to account for racial disparities in violence.

## **Structure-Process Integration**

One solution is to take an integrative, multilevel approach to research and theory building. Despite the ecological, topical, and disciplinary silos, the collective body of violence and youth violence scholarship points to several common environmental and individual factors

that influence youth violence. For instance, research across disciplines highlights the role of poverty, exposure to violence, and emotional disposition (e.g., self-control, impulsivity, externalizing, and internalizing) on adolescent violent offending (Brooks-Gunn et al., 1997; Cicchetti & Lynch, 1993; Dodge et al., 1990; Farrell & Bruce, 1997; Morenoff et al., 2001; Schwab-Stone et al., 1999). Thus, although disciplines may operate under different theoretical orientations, these perspectives of youth violence may not be incompatible. Instead, they are parts of a coordinated mechanism of both structure and process (Bernard & Snipes, 1996).

Using Bottoms and colleagues' (2004) definition, structures are "social arrangements external to the individual which enable or limit action by that individual" (Bottoms et al., 2004, p.372-373). Following Farrall, Godfrey, and Cox (2009), this approach is extended to include larger structures associated with organizations and institutions that exist in society during a particular time. For the purpose of this dissertation, structures can also be present at the individual youth level, such that biological predispositions, temperament, and personality can structure individual decision making and behavior (Cicchetti & Rogosch, 1996; Gottfredson & Hirschi, 1990; Ness, 2004; Scarr & McCartney, 1983). Process, on the other hand, can be thought of as the "arrows" that connect structures. In other words, process describes the timesensitive forces that knit structures together and lead to a structure's continuity or change.

As a coordinated whole, the structural elements existing in the neighborhood and the child combine with the process of socioemotional development to promote adolescent violent behavior. However, a focus on race demands an extra specification because, for racial minorities, both structure and process are contextualized by social histories of racial inequality (Anderson, 1999; Garcia Coll et al., 1996; McLoyd & Randolph, 1985; Sampson & Wilson, 1995; Spencer et al., 1997).

# **Sociocultural Perspectives of Development**

Sociocultural models of development propose that children develop through their active participation in sociocultural activities, which are embedded in all aspects of daily living (LeVine, 1982; Rogoff, 2003; Rogoff et al., 1995; Vygotsky, 1978; Whiting, 1980). Cultural practices and activities facilitate the development of thinking, remembering, reasoning, and problem solving (C. D. Lee, 1995; Ornstein et al., 2004; Rogoff, 2003; Rogoff et al., 2007, 2011). In addition, cultural practices are historically embedded, meaning that although values, beliefs, goals, and daily activities may be transferred across generations—signifying important elements of continuity (Patterson, 2004), they also change across time (Elder, 1994; Rogoff, 2003).

# Sociocultural Perspectives Applied: Integrated Models of Minority Development

Structures of racism and neighborhood structures influence community and individual behavior through processes of adaptation. According to Cynthia Garcia Coll and colleagues' (1996) integrated model of minority development (Figure 1), racial oppression indirectly contributes to child development through residential segregation into communities with both promoting and inhibiting characteristics. Chronic exposure to poverty and the milieu of racial oppression lead to community adaptation, in which different values, beliefs, and traditions are created and sustained (Garcia Coll et al., 1996). Thus, the sociopolitical level, endows meaning into the daily activities and norms present at the community level, and these cultural perspectives, norms, and practices are transferred across generations (Ogbu & Simons, 1998; Rogoff, 2003; Rogoff et al., 1995). Since race, racism, and oppression play an omnipresent role in the lives of minorities, racial socialization (Phinney, 1990), in which parents teach their children to cope with racism and community danger while also fostering a positive racial

identity, serves as an important positive developmental competency for minority youth (Garcia Coll et al., 1996; Huguley et al., 2019; Spencer et al., 1997; Vélez-Agosto et al., 2017). This sociocultural framework is congruent with several sociological theories, which promote the importance of community adaptation to adversity (Anderson, 1998, 1999; Anderson & Massey, 2001; Sampson & Wilson, 1995). However, it fills the major gaps remaining in these theories by bringing in the connections to development and socioemotional functioning.

Another sociocultural perspective, Margaret Spencer and colleagues' (1997) phenomenological variant to ecological systems theory (PVEST; Figure 2), argues that meaningmaking processes connect community structures—which originate from sociopolitical levels of racial inequality—to individual adolescent development. Specifically, youth's personal experiences and perceptions of those experiences become integrated into their sense of self. Informed by psychological processes such as social learning, identity development, coping, and social information processing, Spencer and colleagues (1997) argue that youth engage in several context-linked problem solving and coping strategies, which overtime emerge as stable behavior patterns that are embedded into the youth's identity. For example, Black adolescents perceive stereotypes and biases from the broader society and will react to these stereotypes in positive or negative ways in the face of stress. Overtime, maladaptive coping mechanisms may promote a stable negative self-perception that impacts their self-efficacy, achievement, and behavior (Spencer et al., 1997; Spencer & Markstrom-Adams, 1990). Thus, socioemotional development, which involves complex social, emotional, and cognitive processes, serves as a developmental mechanism connecting individuals to their neighborhoods, families, and sociopolitical climate, and is congruent with psychological mechanisms underlying individual violent behavior, such a social learning (Bandura, 1983; Card, 2011), social information processing (Dodge & Crick,

1990; Huesmann, 1988), self-regulation (Dewall et al., 2007; Muraven & Baumeister, 2000), and emotional coping (Compas et al., 2017; Evans & Kim, 2012).

## The Advantages of Sociocultural Perspectives

Several advantages come from using sociocultural frameworks above others. First, sociocultural frameworks of development are well suited for empirical testing because they embed structures within key processes, such as community adaptation and adolescent development, in a coordinated framework. Second, this focus on adaptation and development moves research away from deficit-oriented frameworks that only describe racial differences in behavior and achievement outcomes, and towards an acknowledgment of individual variability and context-linked processes (Lee, 2010; McLoyd & Randolph, 1985; Raver & Blair, 2020; Rogoff, 2003; Velez & Spencer, 2018). Thus, the neighborhood is not deterministic (E. Chen & Miller, 2012), but a vital interlocking system. Third, sociocultural frameworks conceptualize the individual as an active participant directly and indirectly effected by and affecting multiple structures (Darling, 2007; Rogoff, 2003; Vélez-Agosto et al., 2017). Therefore, effects occur in both a top-down fashion (e.g., neighborhoods influencing individuals) and from the bottom up (individuals impacting neighborhoods). Finally, sociocultural frameworks explicitly place the needs of minority youth front and center of theory and analysis (Coll et al., 1996; Ferguson et al., 2014; McLoyd, 1998; Ogbu, 1990; Rogoff et al., 1995; Spencer et al., 1997) and are oriented towards intersectionality<sup>4</sup> (Crenshaw, 1991), such that race, neighborhood, adversity, and social mechanisms interlock to create unique patterns of risk or resilience.

<sup>&</sup>lt;sup>4</sup> Sociocultural theories, like PVEST, connect to Kimberle Crenshaw's (1991) original concept of intersectionality, which stresses the importance of interlocking systems of oppression and marginalization. Specifically, multiple levels of oppression, power, and marginalization intersect to create an experience and identity that is phenomenologically unique and cannot be explained by one level alone (Crenshaw, 1991).

#### **CHAPTER 4: METHODOLOGY**

# **Data and Sample**

Data come from the Project on Human Development in Chicago Neighborhoods (PHDCN), a multi-cohort, multi-level longitudinal study (Earls, Brooks-Gunn, Raudenbush, & Sampson, 1994). Data collection occurred in three stages. First, researchers divided the city of Chicago into 343 neighborhood clusters (Sampson et al., 1997). Sampson, Raudenbush, and Earls (1997) defined a neighborhood as "a collection of people and institutions occupying a subsection of a larger community" (p. 919) and describe in detail the creation of neighborhood clusters. In brief, neighborhood clusters were formed using U.S Census data, geographic boundaries (e.g., railroads, freeways, and parks), and local knowledge, so that each cluster was composed of geographically adjoining census tracts and was internally homogenous on key census indicators (Earls et al., 1994; Sampson et al., 1997).

Second, a cross-sectional survey of 8,872 adults (40.4% male, 58.8% female) was conducted from 1994-1995 and consisted of household interviews with adult Chicago residents from the 343 neighborhood clusters. This cross-section makes up the Community Survey portion of the PHDCN dataset. Participants in the Community Survey were racially diverse (40.7% Black American, 31.9% White, 23.5% Hispanic/Latino).

Third, a stratified random sample of 80 neighborhood clusters were selected from the 343 total neighborhood clusters used in the Community Survey. A longitudinal dataset was created by sampling 800-900 participants from seven age groups (ages 0, 3, 6, 9, 12, 15, and 18) from a random sample of households within the 80 neighborhood clusters. The response rate for screened eligible participants was 75%, resulting in a final sample of 6,228 total participants. The longitudinal sample was racially diverse (46.3% Hispanic/Latino, 34.1% Black American,

and 15.1% White) and included an even representation of gender (48% male, 47.2% female). Data were initially collected from 1995 until 1997. Two follow-up interviews were conducted from 1997-1999 (Wave 2) and 2000-2001 (Wave 3). This dissertation uses data from cohorts 9 and 12 (N=1,648). This decision was made in order to focus on the developmental period between childhood and early adolescence, as participants in the age 9 and 12 cohorts eventually turned ages 13 and 16, respectively by wave 3. Descriptive statistics of the youth participants in the Longitudinal Cohort Study (LCS) are summarized in Table 1. In addition, Community Survey responses from residents of the same 80 neighborhood clusters sampled to create the LCS were included for analyses. This decision was made to ensure that cross-level comparisons between individual-level and neighborhood-level predictors could be conducted. Descriptive statistics for respondents of the Community Survey are summarized in Table 2.

#### **Neighborhood-Level Measures**

*Perceived Neighborhood Danger*. Perceived neighborhood danger was measured using three items from the Community Survey, which was conducted in 1994 around the same time as Wave 1 data was collected from the longitudinal sample. Data come from 3,896 community members nested within 80 neighborhood clusters. Community residents were asked how much they agreed (1=strongly disagree and 5=strongly agree) with the following statements: "many people in this neighborhood are afraid to go out at night;" "There are areas of this neighborhood where everyone knowns trouble is expected;" and "You're taking a big chance if you walk in this neighborhood alone after dark." An individual-level composite measure was calculated by taking the mean score of all three items (alpha=0.806). A neighborhood-level composite variable used for individual growth curve modeling was created by taking the grand mean of scores per neighborhood cluster.

*Perceptions of Policing.* Perceptions of policing were measured using seven items from the Community Survey. Residents were asked how much they agreed (1=strongly disagree and 5=strongly agree) with the following statements about police: "police in neighborhood are responsive to local issues," "police are doing a good job in dealing with problems that really concern people in neighborhood," "police are doing a good job in responding to people in neighborhood after being victims of crime," "police are not doing a good job in preventing crime in neighborhood (reverse coded)," and "police are not able to maintain order on streets and sidewalks in neighborhood (reverse coded). A composite measure was calculated by taking the mean score of all items (alpha=0.789), such that higher values indicate more positive perceptions of police. A neighborhood-level composite variable used for mixed effect modeling was created by taking the grand mean of scores per NC.

*Physical Disorder.* Physical disorder was measured in Wave 1 using a modified version of the Home Observation for Measurement of the Environment (HOME) protocol (Bradley & Caldwell, 1984). The modified version of the HOME protocol included questions about the physical environment of the home and the neighborhood. Trained interviewers observed and recorded the presence of physical disorder items in the neighborhood block surrounding a subject's residence. Specifically, coders recorded the type of neighborhood (residential, commercial, mix, or other); volume of traffic (no traffic, light traffic, moderate traffic, or heavy traffic); physical condition of the street surrounding the residence (good, moderate, poor, or very poor); the presence of litter and garbage on the sidewalk; and the presence of drug, alcohol, and cigarette litter on the sidewalk. Although some of these items were initially measured on an ordinal scale, histograms of the data indicated that these variables essentially behaved as

dichotomous items and were subsequently recoded for analysis<sup>5</sup>. A composite variable for physical disorder was calculated by taking the sum of these binary measures, such that higher values indicate the presence of more physical disorder (alpha=0.878). Observations were collected for all participants in the LCS (N=9,787) and aggregated by neighborhood cluster.

#### **Longitudinal Cohort Survey Measures**

*Demographics. Participant race* is a categorical variable in which 1= Black; 2= White; 3= Hispanic; 4=Other. Only 4% (n=198) of the study sample identified as belonging to an Asian/Pacific Islander or different race/ethnicity. Due to the small sample size, these youth participants were removed from analyses. For analyses, race was recoded into dummy variables with White youth used as the reference group. *Participant Age* was measured as membership to either Cohort 9 or Cohort 12. Age was also measured as recorded age at wave 1. *Gender* was a dichotomous self-report variable in which 0= female and 1= male. *Family socioeconomic index (SEI)* was measured at wave 1 and is a composite variable measured by the primary caregiver's and their partner/spouse's maximum education and salary level.

*Exposure to Violence*. Exposure to violence was assessed using the My Exposure to Violence (My ETV) scale, a structured interview procedure that assesses a subject's past year exposure to several violent events (Selner-O'Hagan et al., 1998). Youth participants were asked how many times they witnessed the following four violent events during the last 12 months: minor assault (slapping, punching, or beating); the sound of gunfire; an attack with a weapon like a knife or bat; and a shooting. Due to the overdispersion of these frequency scores, answers were recoded such that 0= did not witness; 1=witnessed once; 2= witnessed 2 to 3 times; 3=witnessed

<sup>&</sup>lt;sup>5</sup> Type of neighborhood (0=residential; 1=commercial/mix/other); volume of traffic (0=no traffic to light traffic; 1=moderate to heavy traffic); physical condition of the street surrounding the residence (0=good to moderate; 1=poor to very poor); the presence of litter and garbage on the sidewalk (0=absent; 1=present); and the presence of drug, alcohol, and cigarette litter on the sidewalk (0=absent; 1=present).

4 to 9 times; and 4= witnessed 10 or more times in the last 12 months (Gardner & Brooks-Gunn, 2009). Frequency scores were then averaged across all four violent events to create a total score of violence exposure for youth, which was computed for all three waves of data collection. In addition, a grouping variable was created to categorize youth who did not witness any violence at wave 1 (coded as "0") from those who witnessed any form of violence at wave 1 (coded as "1").

Internalizing and Externalizing Symptoms. Childhood behavioral and emotional functioning were measured using the Child Behavioral Checklist (CBCL; Achenbach & Ruffle, 2000). The CBCL is a standardized form used to identify behavioral and emotional dysfunction in children and adolescents (Achenbach & Ruffle, 2000). Previous psychometric research has validated the presence of eight syndrome types: withdrawn, somatic complaints, anxious/depressed, social problems, thought problems, attention problems, delinquent behavior, and aggressive behavior (Achenbach, 1991; Achenbach & Ruffle, 2000; Crijnen et al., 1999). These eight syndrome types can be subsequently combined into two major factors: internalizing symptoms and externalizing symptoms (Achenbach, 1991).

Caregivers were asked to assess how true (2=often true, 1= sometimes true, 0=not true) a list of 66 behaviors and emotions described their child, the youth-participant. *Internalizing Symptoms* were assessed using 31 items associated with the withdrawn, anxious/depression, and somatic complaints syndrome types (see Appendix A). A composite measure was calculated as a sum score of these 31 items for each wave of data (alphaw1=0.765, alphaw2=0.886, alphaw3=0.898). *Externalizing Symptoms* were assessed using 21 items associated with the delinquency and aggressive behavior syndrome types (see Appendix A). A composite measure was calculated as a sum score of these 21 items for each wave of data (alphaw1=0.765, alphaw2=0.819, alphaw2=0.889, alphaw3=0.902).

*Violent Offending*. Violent offending in adolescence was assessed through the Self-Report of Offending Scale (Huizinga et al., 1991). Participants were asked if they had committed 24 different criminal acts (1=yes; 0=no) in the last six months. Violent offending was defined as engagement with the following crimes: set a fire; attacked someone with a weapon; thrown objects such as rocks or bottles at someone; been in a gang fight; carried a hidden weapon; hit someone you do not live with; hit someone you do live with; and threatened to physically hurt another person. Responses were summed to create a variety score of violent offending. Variety scores are advantageous because they are less subject to recall bias and are more normally distributed (Moffitt et al., 2001).

*Time*. Youth participants participated in three different waves of data collection. One advantage of using individual growth curve modeling (described below in the "Analysis Plan" section) is that it allows for irregularity in the time-spacing between data collections. *Linear Time* is a centered variable in which baseline (Wave 1) was recoded as 0, Wave 2 was recoded as 2.05, and Wave 3 was recoded as 4.60<sup>6</sup>. Since individual growth curves are usually non-linear overtime (Shek & Ma, 2011), it is suggested that higher-order polynomial models should also be included in analyses (Curran et al., 2010). The PHDCN data only includes three waves of data collection, so only a quadratic model was included. In contrast to a linear model, which assesses the within-individual linear rate of change, a quadradic model assesses whether the within-individual growth-rate accelerates or decelerates across time (Shek & Ma, 2011). *Time Squared* represents a quadradic conception of time and was calculated by squaring Linear Time. Linear Time and Time Squared were included as fixed effects in individual growth curve models. For

<sup>&</sup>lt;sup>6</sup> Following the centering scheme presented by Shek & Ma (2011), these recodes represent the average number of years since baseline.

random effects, wave, in its original coding construct (i.e. wave 1=1; wave 2=2; and wave 3=3) was included as repeating variable (Shek & Ma, 2011).

#### **Analysis Plan**

Analyses were conducted in multiple steps using data from the Community Survey and the Longitudinal Cohort Study (LCS). First, descriptive statistics were computed for Community Survey respondents and the main sample of youth from the LCS (Tables 1 and 2). Second, hierarchical linear modeling (HLM) with maximum likelihood estimation was used to test the effect of respondent race, gender, socioeconomic status, and neighborhood physical disorder on community perceptions of danger and policing. Third, individual growth curve modeling (IGC) was employed to assess the within- and between-individual change in violence exposure. Specifically, IGC was used to explore the role of participant race, family socioeconomic status, gender, age, and neighborhood disorder on youth changes in violence exposure over the three waves of data collection. IGC analyses were also conducted to assess the within- and betweenindividual changes in violent offending across the three waves. This set of analyses explore the role of race, gender, age, family socioeconomic status, neighborhood physical disorder, internalizing symptoms, externalizing symptoms, and neighborhood perceptions on youth violence overtime. Lastly, mediation analyses were conducted to assess whether psychological functioning (e.g., internalizing and externalizing) mediates the effect of exposure to violence on violent offending. All analyses were computed using SPSS 27.

#### **Hierarchical Linear Modeling**

HLM is an advanced regression technique that accounts for the hierarchical (i.e., multilevel, or nested) structure of data. The chief benefit of using HLM comes from one's ability to assess relationships between variables existing at different levels of analysis, such as the

individual and the neighborhood level (i.e., cross-level analyses; Bryk & Raudenbush, 1988; Woltman et al., 2012). HLM does this by taking into account both the within-group and betweengroup regression relationships between predictor and outcome variables (Woltman et al., 2012). In addition, HLM is advantageous because it requires fewer assumptions to be met than other inferential methods. For example, hierarchical data often violates assumptions of homoscedasticity, independence of observations, missing data, sphericity, and equal number of participants per group (Bryk & Raudenbush, 1992). By modeling both the between-group and within-group variance, HLM is able to yield more accurate effect sizes and estimation coefficients than methods that try to ignore nested data by aggregating groups (Bryk & Raudenbush, 1992).

All HLMs are conducted using a two-level model, such that individuals are nested within neighborhood clusters. Although the dependent variable may change between analyses, at the Level-1 individual model (Equation 1), the outcome, *Y*, for each individual *i* in neighborhood cluster *j* was modeled as a function of the Level 1 intercept,  $\beta_{0j}$ , which represents the mean outcome within neighborhood *j*, and a Level-1 error term,  $r_{ij}$ .

$$Y_{ij} = \beta_{0j} + r_{ij} (1)$$
$$\beta_{0j} = \gamma_{00} + u_{0j} (2)$$
$$Y_{ij} = \gamma_{00} + u_{0j} + r_{ij} (3)$$

At the Level-2 neighborhood model (Equation 2), the Level-1 intercept,  $\beta_{0j}$ , was modeled as a function of a Level-2 intercept  $\gamma_{00}$ , which represents the mean outcome across *j* neighborhoods, and a Level-2 error term,  $u_{0j}$ . Equation 4 represents the unconditional baseline model used to assess the presence of significant clustering at Level 2. When adding predictors, the Level-1

model is represented by (Equation 3), where a Level-1 predictor,  $W_{ij}$ , and its associated slope,  $\beta_{1j}$ , are added to the model.

$$Y_{ij} = \beta_{0j} + \beta_{1j}W_{ij} + r_{ij} (4)$$
$$\beta_{0j} = \gamma_{00} + \gamma_{01}W_j + u_{0j} (5)$$

At Level-2 (Equation 4), the Level-1 intercept,  $\beta_{0j}$ , is modeled as a function of the Level-2 intercept,  $\gamma_{00}$ , the slope,  $\gamma_{01}$ , of a Level-2 predictor,  $W_i$ , and a Level-2 error term.

#### **Individual Growth Curve Modeling**

Individual growth curve modeling (IGC) is a special application of HLM. Whereas previous HLMs used in this dissertation identify individuals nested within neighborhoods, IGC uses the same principles of HLM to nest time-varying responses (Level-1) within individuals (Level-2; Bryk & Raudenbush, 1992). As a result, IGC is able to model between-individual and within-individual changes in outcomes across different measurement waves over time (Shek & Ma, 2011). Similar to HLM, IGC requires fewer assumptions to be met as compared to other general linear models utilizing repeated measures, such as a repeated measures analysis of variance. For instance, IGC can handle the common reality of unbalanced data (e.g., unequal sample sizes, inconsistent time intervals, and missing data on some measures and waves) without losing statistical power (Shek & Ma, 2011). Another advantage to IGC is that it allows predictors of growth to be discrete or continuous as well as time-variant or time-invariant (Curran et al., 2010).

IGC and HLM are very similar, with the only difference between them being the inclusion of time. One is able to draw conclusions regarding the between-individual and within-individual changes in outcome over time by first fitting each individual trajectory to a common, specific parametric model. As a result, the researcher is able to discern interindividual

differences in growth trajectories, such as intercepts (conceptualized as the baseline measure of a variable at wave 1) and slopes (conceptualized as the rate of change, or growth, in a variable overtime). This specific parametric model can be linear or represented by other higher-order polynomial trends (i.e., quadradic and cubic slopes). Since this dissertation only uses three waves of data collection, only the linear and quadradic slopes were calculated in the IGC (see Equation 6). In IGC, the Level-1 model (Equation 6) refers to the outcome, *Y*, for person *i* at repeated measure *j* as a function of the Level-1 intercept,  $\beta_{0j}$ , the slope,  $\beta_{1j}$ , of a linear trajectory, (*Time*), the slope,  $\beta_{2j}$ , of a quadradic trajectory, (*Time*<sup>2</sup>), and the Level-1 error term,  $r_{ij}$ .

$$Y_{ij} = \beta_{0j} + \beta_{1j}(Time) + \beta_{2j}(Time^{2}) + r_{ij} (6)$$
$$Y_{ij} = \gamma_{0i} + \gamma_{1i}(Time) + \gamma_{2i}(Time^{2}) + \gamma_{3i}W_{j} + r_{ij} (7)$$

The Level-2 model (Equation 7) captures whether the rate of change varies across individuals in a systematic way (Shek & Ma, 2011). In the Level-2 model,  $Y_{ij}$  is the grand mean of the outcome for the full sample at Time t,  $\gamma_{0i}$  is the initial status of the outcome variable for the whole sample at the same time-point, t,  $\gamma_{1i}$  and  $\gamma_{2i}$  are the linear and quadradic slope of change, respectively, relating to the outcome for the whole sample at Time, t. In addition,  $\gamma_{3i}$  is used to assess whether the predictor,  $W_j$ , is associated with the growth parameters (initial status, linear growth, or quadradic growth), and  $r_{ij}$  represents the random effects that are explained by the predictor  $W_j$ . For all IGC models, the intercept and linear slope were allowed to vary across individuals.

Similar to HLM, an intraclass correlation coefficient (ICC) describes the proportion of total outcome variation that is related to the Level-2, or nesting, variable. In IGC, the ICC specifically describes the proportion of total outcome variation related to between-individual differences (Shek & Ma, 2011).

#### **Missing Data**

Missing data can bias results and harm generalizability (McKnight et al., 2007; Shadish et al., 2002). In longitudinal data, sources of missing data included attrition, where subjects drop out of study, and inconsistent response, where participants respond to some measures and data collection waves, but not all. Both HLM and IGC analysis are robust to missing data due to both these sources of missing and unbalanced data (Bryk & Raudenbush, 1992; Curran et al., 2010; Shek & Ma, 2011). Re-response rates for youth enrolled in cohorts 9 and 12 during the LCS were high for Wave 2 (Cohort 9=85.6%; Cohort 12=86.2%) and Wave 3 (Cohort 9=77.5%; Cohort 12=74.9%).

A binary logistic regression (Table 9) was run to assess whether or not youth who remained in the study at Wave 3 were significantly different than those who left the study. The dependent variable for this analysis was whether nor not a youth had left the study at Wave 3 (missing= 1; non-missing=0). The results indicated no significant differences between youth who remained in the study at Wave 3 and those who left on all study variables (race, age, cohort, family SEI, neighborhood physical disorder, Wave 1 internalizing, Wave 1 externalizing, Wave 1 violence exposure, and gender). As a result, pairwise deletion was used for all subsequent analyses.

#### **CHAPTER 5: RESULTS**

#### **Descriptive Statistics**

Tables 1 and 2 summarize the descriptive statistics of the longitudinal sample and community sample, respectively. Table 2 indicates a good representation of race (34.1% Black American; 32.6% Hispanic/Latino; 26.2% White) and gender (58.2% female; 41.8% males) in the community sample. Community survey respondents tended to mostly positive attitudes towards police (M=3.14; SD=0.63) and tended to rate their neighborhood as dangerous (M=3.17; SD=0.96). Table 1 indicates an equal representation of gender (51% male; 49% female) and an over-representation of Hispanic/Latino youth (48.4%).

#### **Distribution of Neighborhood Clusters**

Table 3 summarizes the distribution of Chicago neighborhood clusters, sorted by ethnic composition and socioeconomic class. The results replicate those compiled by Sampson and Raudenbush (1999 p. 615) and show that when one attempts to sort neighborhoods by ethnic composition the result is a distribution table with empty cells. Specifically, Table 3 indicates the total absence of neighborhood clusters that are both low SES and predominately composed of White residents. In addition, there are no high SES neighborhoods that are mostly composed of Hispanic/Latino/a residents or composed of a mixed composition of Hispanic/Latino/a and Black residents. Although descriptive, these results support the results of other studies, which identify racial segregation into underserved areas (Sharkey, 2008, 2013).

#### Individual and Neighborhood Effects on Community Perceptions

HLM was used to test the hypothesis that participant ethnicity/race and neighborhood physical disorder significantly increases community members' perception of neighborhood danger and significantly decreases positive attitudes towards the police. Data for these analyses

come from the Community Survey, in which community participants (level 1) are nested with neighborhoods (level 2).

Prior to assessing the direct effects of individual and neighborhood predictors on community perceptions of danger and policing, two unconditional (intercept only) models were conducted to assess if community perception of danger and policing varied across the 80 neighborhood clusters. Results revealed that the neighborhood-level variance in community perceptions of danger and community attitudes towards police was significantly different from zero ( $\chi^2_v$ = 5.86, *p* <0.001;  $\chi^2_v$ = 5.72, *p*<0.001, respectively), indicating that these community perceptions vary across neighborhood and should be analyzed using multilevel analysis. An intra-class correlation coefficient (ICC) revealed that 24% of the variability in community perceptions of neighborhood danger and 20% of the variability in community perceptions of policing can be explained at the neighborhood level.

Table 4 summarizes the results of four HLM models predicting community perceptions of neighborhood danger and community perceptions of policing. Results indicate that older residents and female residents are significantly more likely to perceive their neighborhoods as more dangerous. In addition, Black residents were significantly less likely to perceive their neighborhood as dangerous compared to White residents. The results also indicated that socioeconomic status negatively predicts perceptions of neighborhood danger, such that belonging to a lower SEI significantly predicted greater perceptions of neighborhood danger. The ICC indicated that for Model 1, after accounting for individual factors, 25% of the variability in perceptions of danger was due to the neighborhood level. Age, gender, Black American versus White American, and SEI continued to be significant predictors of perceptions of neighborhood danger in Model 2. In addition, neighborhood physical disorder was a

significant predictor of perceptions of danger, such that higher neighborhood disorder was associated with greater perceptions of neighborhood danger. The decrease in ICC from Model 1 to Model 2 indicates that after adding physical disorder into the Level-2 model, only 13% of the variability in perceptions of danger is unaccounted for at the neighborhood level.

Table 4 also illustrates the individual-level and neighborhood-level predictors of perceptions of policing. The results indicate that only age and SEI significantly predict perceptions of police, such that older residents and those with higher SEI exhibit more positive perceptions of policing. The ICC indicates that after accounting for individual differences, 18% of the variability in perceptions of police is due to the neighborhood level. In the Level-2 model, physical disorder significantly predicted perceptions of police, such that living in neighborhoods with higher levels of physical disorder led to more negative perceptions of the police.

#### Individual and Neighborhood Predictors of Exposure to Violence

Individual growth curve modeling (IGC) was used to investigate the individual and neighborhood factors that predict between-individual differences and within-individual change in violence exposure overtime. An unconditional means model indicated significant variation in violence exposure between participants ( $\chi^2_v = 17.74$ , p < 0.01). The ICC indicated that 44% of the variation in violence exposure is explained by between-individual differences, which necessitates the use of IGC to model the nested data structure. An unconditional linear growth model indicated an overall significant linear decrease in violence exposure (B= -0.06, *SE*= 0.02, p < 0.01). The correlation between the intercept and the linear growth model was significant and negative ( $\beta$ = -0.11, *SE*=0.02, p < 0.01), suggesting that youth who experienced more violence exposure at baseline exhibited a slower linear decrease in violence exposure, whereas those who experienced less violence exposure experienced a faster linear decrease in violence exposure overtime. An unconditional growth model including a quadradic growth parameter was not significant. As a result, only the linear growth term was retained for future analyses.

Table 5 summarizes the results of the IGC analyses predicting between- and withinindividual differences in violence exposure. I hypothesized that Black and Hispanic/Latino youth will experience higher levels of violence exposure than White youth and will experience more violence exposure than White youth as they move through early adolescence. In addition, I hypothesized that higher neighborhood physical disorder will significantly predict more violence exposure. The results indicated that males and older youth reported greater baseline violence exposure than females and younger youth. Gender and age also exhibited significant interactions with time, such that males and older youth experienced a slower decline in violence exposure than females and younger youth overtime.

Consistent with the dissertation hypotheses, race had a significant impact on betweenand within-individual differences in violence exposure (see Figure 3). Specifically, estimates of fixed effects indicated that Black youth experienced significantly more baseline violence exposure than White youth. However, Black youth did not differ from White youth in their rate of linear decrease. Unexpectedly, Hispanic youth did not differ from White youth in baseline violence exposure but did exhibit a significantly different linear trajectory. This suggests that race has a significant impact on where each individual "starts" their trajectory of violence exposure. Black youth are more likely to report more violence exposure than White and Hispanic youth.

Also consistent with the dissertation hypotheses, neighborhood physical disorder was a significant predictor of between-individual differences in violence exposure. However, family SEI did not significantly predict between-individual differences in violence exposure. These

findings suggest that youth living in neighborhoods characterized by higher levels of physical disorder are exposed to a greater number of violent incidents. Neighborhood disorder drives individual differences in violence exposure over individual family SEI. However, neighborhood disorder seems to only influence between-individual differences at baseline, and not within-individual changes in linear growth.

It is possible that youth exposed to violence at wave 1 may display a different trajectory to those who reported no violence exposure at wave 1. To assess this idea, Model 2 includes a binary variable in which youth who reported any violence exposure at wave 1 were coded as "1" and those who did not experience any violence exposure at wave 1 are coded as "0." The results show a significant interaction between wave 1 exposure to violence and time, such that youth who reported early violence exposure experienced a much slower rate of linear decline in exposure overtime. Adding this binary term to the model improved model fit.

#### **Predictors of Internalizing and Externalizing Symptoms**

Unconditional mean models were conducted to assess the variation in internalizing and externalizing mean outcomes across participants (i.e., the differences between the mean value of internalizing/externalizing score of each person and the true mean from the population). The results indicated significant variation in internalizing and externalizing scores between participants ( $\chi 2v = 20.23$ , p < 0.001;  $\chi 2v = 22.56$ , p < 0.001, respectively). In order to assess the individual differences in internalizing and externalizing overtime, unconditional linear and quadradic growth curve models were conducted. The results (Table 6) illustrate that internalizing and externalizing symptoms significantly vary over time.

*Between Individual and Within Individual Differences in Internalizing*. For internalizing symptoms, individual differences followed a quadratic trajectory (B=2.81, s.e=0.079, p<0.01),

showing that the rate of growth increased over time. The significant values in both the intercept (B=24.87, s.e=1.91, p<0.01) and linear slope (B=22.84, s.e=0.97, p<0.01) parameters indicate that baseline internalizing symptoms and the growth rate vary over time. However, the non-significant correlation between the intercept and growth parameter (B=3.04, s.e=1.89, p=0.11) indicates that the baseline level of internalizing score (e.g. where each individual "starts" on internalization score, meaning those with high, medium, and low internalizing scores at wave 1) did not significantly change the rate of growth. In other words, youth high, medium, or low in internalization scores at wave 1 all eventually shared the same growth pattern in internalizing scores over time.

Table 6 summarizes the results of IGC analyses testing the hypotheses that physical disorder and violence exposure significantly increase youth internalization. These analyses assessed the impact of time-invariant predictors of both baseline internalization score (i.e., the predictors that impact between-individual differences in baseline internalization score or where each participant "starts" in their growth curve model) and quadradic changes in internalization score over time (i.e., Time<sup>2</sup> \*Predictor). Results from Model 1 show that being Hispanic/Latino versus White was a significant predictor of baseline internalizing score, such that Hispanic/Latino participants had higher levels of internalizing symptoms than White participants (B=1.14, se=0.55, p=0.04; Figure 4). Further, family SEI significantly predicted baseline internalization scores, such that youth participants from families reporting lower SEIs were more likely to have higher internalizing scores. In addition, being male and being older at wave 1 significantly predicted increased quadradic growth over time. These results suggest that males tend to experience a greater rate of deceleration in internalizing symptoms from Wave 1 to Wave 2 as compared to females. In addition, older participants experience a greater rate of increase in

internalizing symptoms than younger participants. This may be because older youth in the age 12 cohort at wave 1 are transitioning to adolescence by wave 3, where pubertal factors may exacerbate the presence of internalizing symptoms, whereas younger youth are just approaching adolescence by wave 3 and may not experience the same pubertal effects on internalizing symptoms.

Model 2 summarizes the results of an IGC in which a grouping variable for wave 1 exposure to violence in included (0=no exposure at wave 1; 1=exposure to violence at wave 1). In this model, violence exposure at wave 1 significantly predicted baseline internalization such that youth exposed to violence had significantly higher internalization scores than youth who were not exposed to violence. However, wave 1 exposure to violence did not significantly predict the rate of growth in internalizing symptoms. Instead, being male and wave 1 age continued to be the only strong predictors of increased rate of growth in internalizing symptoms. When wave 1 exposure to violence was added to Model 2, being Hispanic/Latino versus White was no longer a significant predictor of baseline internalization score. This may be because Hispanic/Latino participants experienced more violence exposure than white participants, and violence exposure, not race, is the driver of between-individual differences in internalization symptoms.

*Between Individual and Within Individual Differences in Externalizing*. Individual Growth Curve analysis was also conducted to assess the change in externalizing scores over the three waves of data (Table 7). Similar to internalizing, the change in externalizing score was best represented by a quadradic trend. However, different to internalizing, externalizing score exhibited an increase from wave 1 to wave 2 and then exhibited a lower rate of increase from wave 2 until wave 3. Results indicated that being male versus female, being younger, being

Black versus White, and having a lower family SEI all significantly predicted higher externalization scores for participants. Being female and being older significantly predicted the slower rate of growth in externalizing symptoms. These results indicate that younger participants approaching early adolescence experience a significant increase in their expression of externalizing symptoms, but that this increased rate of externalizing scores eventually slows down as participants move through middle adolescence (see Figure 5).

In Model 2, violence exposure during wave 1 significantly predicted higher externalizing scores but did not significantly impact the rate of change in externalizing across the waves. In addition, adding violence exposure to the model decreased the predictive power of race on externalizing symptoms. In Model 3, living in neighborhoods with higher levels of physical disorder also significantly increased externalizing score between-subjects, compared to those who live in less-disordered neighborhoods. This finding supports past research highlighting the importance of neighborhood disorder on youth development (Brooks-Gunn et al., 1993; Sampson & Laub, 1994). However, physical disorder did not significantly predict within-individual changes in the growth rate of externalizing symptoms. In addition, community perceptions of danger and attitudes towards police did not significantly predict between-subjects differences in externalizing scores or within-individual differences in growth.

#### **Predictors of Youth Violence**

An unconditional means model suggested that study participants experienced a significant change in violent offending over time, and that approximately 42% of the variation in violent offending was due to interindividual differences ( $\chi 2v = 17.03$ , *p* <0.001, ICC=0.42). Unconditional linear and quadratic growth models were performed in order to assess whether each individual in the study experienced significant changes in violent offending overtime,

which led to inconsistent and non-significant results. These errors are most likely attributed to the existence of some latent group that was not directly observed but whose existence can be estimated from other characteristics of the data (Curran et al., 2010). For instance, violent offending, measured as a variety score, is highly dispersed and positively skewed. Developmental researchers have found the existence of several latent groups of individuals who exhibit between-group differences in offending trajectory overtime and can be initially grouped by measuring their early offending behavior (e.g., Moffitt, 1993). As such, it is possible that youth reporting no offending in wave 1 follow a different growth trajectory from youth who report violent offending in wave 1.

To test this proposition, a new grouping variable was created to identify youth who report no violent offending in wave 1 (coded as "0") from those who reported any violent offending (coded as "1"). Figure 8 illustrates the violent offending trajectory of these two groups and shows that youth who reported no violent offending at wave 1 exhibit a growth trajectory that is visually distinct from those who engaged in violence during wave 1. Unconditional linear and quadradic growth models were performed on each group, separately. The results indicate the presence of significant between-individual differences in baseline violent offending and significant linear and quadradic trajectories for violent offending over time. These findings hold for both groups, however, the direction of the trajectories are opposite. For instance, among those who reported no violent offending at wave 1, violent offending initially increased, in a linear fashion, but then eventually decelerated after wave 2, a scenario indicative of the simultaneous positive linear effect for violent offending (B=0.54, se=0.07, p<0.01) and significant, yet negative, quadradic effect for violent offending (B=-0.22, se= 0.07, p<0.01). This trajectory is virtually opposite from that displayed by subjects who reported engaging in violence during

wave 1. For these individuals, violent offending significantly decreased and then slowly accelerated after wave 2. Since both the linear and quadradic term were significant, both were included in subsequent analyses (Shek & Ma, 2011). In addition, the computed violence-grouping variable was included as a predictor in all subsequent analyses to account for the presence of a latent group trajectory.

Five IGC models (Table 8) were conducted to assess the impact of demographics, violence exposure, psychological functioning, and neighborhood perceptions on betweenindividual differences and within-individual changes in violent offending across the three waves of data collection. Variables were added in a hierarchical fashion in order to examine the unique variance explained by each new theoretical group of variables, as well as to assess model fit. Model fit was evaluated by observing the change in log likelihood, AIC, and BIC fit indices. These fit indices operate under a "less is better" principle. Model 1 included all time-invariant demographic predictors, Model 2 added youth violence exposure, Model 3 included time-varying psychological predictors (i.e., externalizing and internalizing score), Model 4 and Model 5 included neighborhood perceptions of policing and danger, respectively. Neighborhood perceptions of policing and danger were included separately in analysis due to their high correlation.

*Demographics and Youth Violence.* In all models, engaging in violence at wave 1 significantly predicted higher violent offending scores between individuals and an overall trajectory of violence characterized by an overall linear decrease in offending coupled with a slowly increasing quadradic change in offending over time. These findings indicate that youth who report engaging in violence at wave 1 are likely to exhibit a steep decline in offending, followed by slow acceleration in offending after wave 2. In Model 1, wave 1 age significantly

predicted between-individual differences in baseline violent offending, such that older youth exhibited higher levels of violent offending. However, these between-individual differences disappeared in subsequent models. Instead, wave 1 age continued to significantly predict withinindividual changes in violent offending overtime, such that older youth experienced a fast, linear increase in violent offending, which ultimately slowed down after wave 2. Interestingly, race (see Figure 7), family SEI, and physical disorder were not significant predictors of betweenindividual or within-individual changes in violent offending in any model.

Exposure to Violence and Socioemotional Functioning on Youth Violence. In Model 2, wave 1 exposure to violence did not significantly predict between-individual or within-individual changes in violent offending. However, in Model 3, wave 1 violence exposure predicted less violent offending between individuals but a faster increase in violent offending over time when several time-varying predictors were added. Exposure to violence, a construct measured by calculated the mean frequency of past-year exposure to four violent crimes; internalizing; and externalizing are all time-varying predictors (e.g., these variables were measured repeatedly at each wave) included in Model 3. The interpretation of these time-varying predictors assumes a pseudo "cross-sectional" relationship with the outcome variable. In other words, a significant estimate indicates a strong association between the predictor, measured at time t, and the outcome, measured at the same time t. Model 3 results indicated that higher frequencies of violent exposure were significantly associated with more violent offending at each wave. In addition, Model 3 results showed that higher internalizing scores were significantly associated with less violent offending at each wave, but higher externalizing scores were associated with more violent offending at each wave.

*Neighborhood Perceptions and Youth Violence.* The results of Models 4 and 5 indicated that community perceptions of neighborhood danger and community attitudes towards the police had no significant impact on between-individual violent offending or within-individual changes in violent offending.

#### **CHAPTER 6: DISCUSSION**

#### Discussion

Similar to other studies (Merrick et al., 2018; Sumner et al., 2015), this dissertation reestablishes the strong racial disparities in violence exposure in a stratified sample of Chicago youth. Specifically, Black youth were more likely than both Hispanic/Latino and White youth to experience higher frequencies of violence exposure. In addition, descriptive statistics indicate a significant overlap between racial and ethnic neighborhood composition on neighborhood socioeconomic status. In alignment with other research, the most impoverished Chicago neighborhoods are also those with higher concentrations of Black and Hispanic/Latino residents. Although this dissertation does not empirically explore the mechanisms of residential segregation, these descriptive results lend support to other criminological and sociocultural perspectives, which argue that economic and social disinvestment overlap with residential segregation by race (Bursik & Grasmick, 1993; Garcia Coll et al., 1996).

Results from the community survey reveal that Black respondents are significantly less likely than White residents to perceive their neighborhood as dangerous. Consistent with my hypotheses, neighborhood level physical disorder significantly predicted perceptions of greater neighborhood danger and less favorable attitudes of the police. The results also indicate that neighborhood level physical disorder is a stronger predictor of attitudes towards police than race, which was not significant in analyses. These results partially support a main contention of both sociocultural perspectives and neighborhood, macro-level criminological theories: that community perceptions are influenced by neighborhood structural conditions (Garcia Coll et al., 1996; Rogoff, 2003; Ross & Mirowsky, 2009; Sampson & Bartusch, 1998).

However, in opposition to my hypothesis, IGC models revealed that community perceptions of danger and policing had no significant influence on youth violent offending. Several possible conclusions can be drawn from these null findings. First, it is possible that community perceptions of danger and police efficacy are generally poor predictors of individual violence. One explanation is that community perceptions may be too distal to individuals to have a significant impact on their individual behavior. Instead, it may be more likely that individual perceptions of policing and danger impact individual behavior. For example, one research study found that youths' individual level of legal cynicism significantly predicted criminal recidivism (A. Fine et al., 2020). In addition, it is possible that community perceptions, such as neighborhood danger, influence similar perceptions in youth.

In support of my hypothesis, an IGC model indicated that Black youth experienced significantly greater frequencies of violence exposure at baseline than White youth. Contrary to my hypothesis, Hispanic youth did not differ from White participants in baseline violence exposure. Interestingly, Black and Hispanic youth experienced faster growth rates in violence exposure than White youth. Therefore, although Hispanic and White youth reported similar baseline exposures to violence, Hispanic youth experienced a greater rate of increase in violence exposure overtime. It is possible that movement towards adolescence introduces new risk factors not explored in this research. For instance, research has found that engaging in unstructured activities outside of the home and associating with deviant peers significant risk factors for violence and victimization for adolescents (Farrington, 2005; Maimon & Browning, 2012; Warr, 2002) and Hispanic/Latino youth (Fenimore et al., 2019; Kennedy & Ceballo, 2013). However, Hispanic/Latino youth often navigate additional cultural norms specific to different Hispanic/Latino subgroups, which influence the developmental landscape (Fuller & Garcia Coll,

2010). For instance, Antunes and Ahlin (2021) found substantial differences in parenting strategies and management techniques among different subgroups of Hispanic/Latino families. In aggregate, their findings suggest that Hispanic/Latino families mobilize parenting strategies within the home to protect younger children from community violence exposure, unstructured play time, and association with deviant peers (Antunes & Ahlin, 2021). However, processes of assimilation and acculturation for Hispanic/Latino youth strongly influence development through adolescence (Fuller & Garcia Coll, 2010; Suárez-Orozco et al., 2009; Suárez-Orozco & Suárez-Orozco, 2002). Especially for second- and third-generation Hispanic/Latino youth (Garcia Coll & Marks, 2012), assimilation into lower-income neighborhoods and school systems may introduce a new risk for adolescents, such as association with deviant peers (Antunes & Ahlin, 2015, 2021). Thus, parental management techniques that protect younger children from violence exposure may no longer be as effective once youth enter adolescence, where more activity outside the home due to school and peer-group activities may increase one's risk for community violence exposure (Antunes & Ahlin, 2021).

Furthermore, it is important to couch parental strategies within context. In alignment with sociocultural perspectives of development, parenting practices adapt in response to community conditions and cultural norms (Garcia Coll et al., 1996). Qualitative and ethnographic research on Black American families indicate strong cultural norms supportive of independence for both girls and boys (Ness, 2004), which may lead to less physical monitoring and more chance of violence exposure in the community. In contrast, Hispanic/Latino norms of *familismo*, or responsibility to the family, has been found to protect Hispanic/Latino children from violence exposure (Kennedy & Ceballo, 2013). A combined focus on culture, development, and caregiving points to a possible integration between sociocultural perspectives of development

and traditional criminological theories, such as routine activities theory (Cohen & Felson, 1979), peer-focused perspectives (Warr, 2002), and control theories that specify the importance of parenting (Gottfredson & Hirschi, 1990; Hirschi, 1969; Patterson, 1982).

However, it is possible that aggregating Hispanic/Latino youth into one race/ethnicity category masks substantial variation present within the Hispanic community. For instance, research finds large variation in violent offending and violence exposure based on immigration status, such that second-and third-generation immigrant youth are more likely than firstgeneration youth to engage in violence and experience victimization (Coll & Marks, 2012; Gibson & Miller, 2010). In addition, the different ethnic groups that make up the Hispanic/Latino community experience different trends in violence exposure and offending (Estrada-Martínez et al., 2017). Therefore, more research should investigate the relationships between adolescent development, race/ethnicity, neighborhoods, and violence exposure. In particular, more research should be conducted to outline the experience of Hispanic/Latino youth living in the United States. Hispanic and Latino communities are not a monolith, but instead show substantial differences in school achievement, assimilation, home environments, parenting strategies, cultural norms, and patterns of violence exposure (Bradley et al., 2001; Estrada-Martínez et al., 2017; Fuller & Garcia Coll, 2010).

The dissertation results indicate that a large driver of between-individual and withinindividual differences in violent offending are other individual-level variables, such as baseline violent behavior, externalizing symptoms, and exposure to violence. The results also indicated that higher scores of internalizing and externalizing symptoms trended together with more varied violent offending. While growth rates in internalizing symptoms and violence was not significantly different between racial-groups, individuals who displayed high levels of early

externalizing, violence, and violence exposure were significant disadvantaged across time, maintaining prolonged differences between those who did not experience such early adversity. Most troubling, early adversity was most substantially felt by Black youth in this study.

In addition, physical disorder significantly predicted baseline differences in externalizing scores, such that youth living in more disorder neighborhoods had higher baseline externalizing scores. Although physical disorder did not significantly predict baseline or growth in internalizing symptoms, early wave 1 exposure to community violence significantly predicted greater baseline internalizing and externalizing symptoms. As such, socioemotional development operating at the individual level is an important consideration for violence scholarship, and are influenced by the community context (Brooks-Gunn et al., 1993; Gorman-Smith et al., 2000, 2010; Harding, 2009; Tolan & Grant, 2009). Thus, it seems likely that a substantial driver of racial disparities in violent offending may stem from racial disparities in violence exposure, a phenomenon that is more likely when one lives in impoverished, physically disordered neighborhoods. As a result, it is important to understand how youth adapt and cope to violence exposure and ensure that youth programing is trauma-informed.

#### Limitations

One limitation of this study is the use of older data. The PHDCN data were collected from 1994-2001, which may no longer be representative of Chicago today. Indeed, Chicago has experienced significant changes since the 1990s. Notably, crime in Chicago, as well as most major cities, experienced a substantial decline after 1991 (Zimring, 2007). Steadily declining violent crime through the 1990s may partially explain the substantial decreases in reported violence exposure and violent offending for all youth participants from Wave 1 to Wave 2. However, Chicago recently experienced a 59% increase in homicide rates in 2016 (Bosman &

Smith, 2016), marking the beginning of an alarming national increase in violent crime (Tucker & Nickeas, 2021). In addition, high-profile news coverage of several police shootings of unarmed Black men and women have increased national conversations about race and the criminal justice system. Currently, national surveys indicate low levels of confidence in policing (Ortiz, 2020). In addition, the Chicago Police Department and ELUCID (2021) own community surveys indicate that perceptions of trust in police vary substantially by neighborhood such that individuals living in impoverished neighborhoods with high percentages of Black residents are more distrustful of law enforcement. Therefore, it is possible that community survey respondents may have had different perceptions of policing and neighborhood danger during the 1994-1995 data collection years than they would today. As a result, it is important to replicate this study's results with more recent longitudinal data.

Another limitation is the use of physical disorder as a proxy for concentrated disadvantage. Although closely related (Sampson & Raudenbush, 1999), concentrated disadvantage is a latent variable composed of several other structural neighborhood features, such as unemployment, welfare receipt, and single-parent households (Sampson et al., 1997). In addition, it had been argued that physical disorder and crime originate from the same explanatory process (Gottfredson & Hirschi, 1990). For instance, the remnants of physical disorder, such as litter, graffiti, and vandalism, are also remnants of property and ordinance violations. Thus, including physical disorder as a predictive variable of violent offending may be theoretically tautological. In this study, physical disorder was moderately correlated with violent offending (r=0.18) but was not found to violate assumptions of multicollinearity. However, the theoretical argument against using physical disorder as a predictor variable of other types of crime is valid, and future research should utilize a more nuanced measurement of concentrated disadvantage.

Another limitation is the use of only three time points for the individual growth curve analysis. Individual growth curve modeling generates more power and accuracy when multiple time points are included (Curran et al., 2010; Shek & Ma, 2011). As a result, future research should strive to collect and analyze multiple waves of data to generate a more accurate portrayal of violent behavior changes overtime.

Another limitation of this research is that immigration status was included as a variable. This may be particularly relevant to the Hispanic/Latino/a sample used in this study. The minority experience in America and the criminal justice system is not a monolith. For instance, immigrants tend to be less antisocial (Vaughn, Salas-Wright, DeLisi, et al., 2014), less likely to engage in crime (Sampson, 2008), and experience less violence exposure (MacDonald & Saunders, 2012) despite living in low-income, disadvantaged communities. Nearly 47% of Chicago's Hispanic and Latino/a community are immigrants (Paral et al., 2004). Understanding how the so-called immigration paradox contributes to violent offending would be a worthwhile research endeavor.

#### **Implications and Future Studies**

The results of this dissertation partially support the core premise of sociocultural frameworks of development. Specifically, child development and behavior are impacted by the sociopolitical context, neighborhood features, and individual exposure to violence and socioemotional development, however, these findings are also supportive of several additional criminological theories. However, sociocultural perspectives are useful to the advancement of violence scholarship because they point to coordinated mechanisms between structures, such as poverty, and social process, such as emotional development, that connect ecologies together.

Furthermore, they are well equipped to explore racial and ethnic differences in development and behavior that explicitly place the experience of minorities front and center within empiricism.

Future research should identify and test additional structures and social processes critical for our understanding of violence. For example, future research should investigate how racial inequality, poverty, and violence exposure impact caregiving. Originating from a developmental perspective, scholars contend that concentrated disadvantage disrupts youth social-emotional development both directly (Alvarado, 2016; Brooks-Gunn et al., 1993, 1997; Harding, 2009; McCoy et al., 2018; Overstreet, 2000) and indirectly through caregiving quality (Finegood et al., 2017; Gorman-Smith et al., 2000; Lorion & Saltzman, 1993; Margolin & Gordis, 2000; McLoyd, 1990, 1998; Sampson & Laub, 1994). As a proximal setting for child development, caregiver quality has the power to direct youth socio-emotional competencies (Bandura, 1991; Baumrind, 1967) and protect against adversity (Armstrong et al., 2005; Hay et al., 2017; Jaffee, 2007; Rutter, 2007). Further, it is important to place parenting in context, such that research aims to understand how parents adapt to concentrated disadvantage and oppression in ways that are both promoting and inhibiting (Jarrett, 1997; Raver & Blair, 2020; Williams et al., 2012).

In addition, future research on race and violence should investigate individual-level mechanisms of resilience. Not all children exposed to community violence—or other sources of acute and chronic adversity— go on to develop psychopathologies or display aggression. Sources of resilience, such as emotional regulation (Compas, 2009) and emotional coping (Compas et al., 2017) are other important mechanisms worth exploring. Integrating measurements of resiliency into race and violence research also protects against the proliferation of deficit-oriented research on racial minorities (Raver & Blair, 2020). Deficit-oriented research tends to compare children across race and income, showing a distinct preference for the

privileges afforded to more affluent youth. Although deficit approaches highlight the stark inequalities faced by low-income minority youth, not acknowledging sources of resilience perpetuates a false narrative that views all minority and/or low-income youth as equally disadvantaged with little to no hope of achieving the milestones available to more advantaged youth (C. D. Lee, 2010; McLoyd & Randolph, 1985; Raver & Blair, 2020; Rogoff, 2003; Velez & Spencer, 2018).

#### Conclusion

Although youth violence is declining, racial disparities in violence victimization and perpetration remain unchanged (Herrenkohl, 2017). Thus, the new priority for youth violence scholarship and prevention must focus on reducing racial disparities in violence. A comprehensive initiative to tackle both youth violence and racial disparities begins by conceptualizing the sociopolitical system as a critical domain for influence. Just as youth violent prevention programming advocates a multisystem approach where multiple systems—individual, family, peer, and school—are targeted for intervention (A. A. Fagan & Catalano, 2012), attention needs to be given to how the sociopolitical environment shapes these systems. Instead of conceptualizing the sociopolitical factors weave through the fabric of developmental environments and understand how youth and communities actively respond, adapt, and adjust (Darling, 2007; Rogoff, 2003; Vélez-Agosto et al., 2017). Cracking these codes will allow for the development of much need prevention strategies that are culturally competent, strengths-based, and represent the youth most burdened by violence.

APPENDIX

Modified CBCL Internalizing Symptom Items

complains of loneliness cries a lot fears might think or do something bad feels he/she has to be perfect feels that no one loves him/her feels others are out to get him/her feels worthless or inferior would rather be alone than with others nervous, high strung, or tense too fearful or anxious feels dizzy feels too guilty overtired aches/pains w/out medical cause headaches w/out medical cause nausea/feels sick w/out medical cause problems with eyes w/out medical cause rashes/skin problems w/out medical cause stomach aches w/out medical cause vomiting w/out medical cause refuses to talk secretive, keeps things to self self-conscious or easily embarrassed shy or timid stares blankly sulks a lot suspicious

underactive/slow moving/lacks energy unhappy, sad, or depressed withdrawn/doesn't get involved with others worries

## Modified CBCL Externalizing Symptom Items

argues a lot cruelty/bullying/meanness to others demands a lot of attention destroys things belonging to others disobedient at home disobedient at school doesn't feel guilty after misbehaving gets in many fights hangs out w/others who get in trouble lying or cheating prefers being with older kids runs away from home screams a lot sets fires stubborn, sullen, or irritable sudden changes in mood/feelings swearing or obscene language teases a lot temper tantrums or hot temper threatens people truancy, skips school

				Wave 1		Wave 2			Wave 3					
Variable	Ν	%	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD
Cohort 9	793	50.30												
Cohort 12	785	49.70												
Male	804	51.00												
Black	587	37.20												
Hispanic	763	48.40												
White	228	14.40												
Family SEI			0	9	41.72	17.19								
ETV			0	4	0.74	0.73	0	4	0.71	0.71	0	3	0.68	0.57
Internalizing			0	49	7.26	8.81	0	46	8.33	7.64	0	43	9.49	8.20
Externalizing			0	41	7.26	6.21	0	39	7.60	6.67	0	40	7.75	6.92
Violence			0	14	0.91	1.58	0	8	0.54	1.13	0	10	0.53	1.11

Table 1. Descriptive Statistics for Longitudinal Cohorts 9 and 12 (N=1,578).

 Table 2. Descriptive statistics of Community Survey Respondents (N=3,869)

	Ν	%	Min.	Max.	Mean	SD
Female	1918	58.2				
Male	1418	41.8				
Black	1157	34.1				
Hispanic	1105	32.6				
White	890	26.2				
Age			18.00	95.00	42.04	16.42
SEI			17.00	97.00	43.84	18.42
Perceptions of Policing			1.00	5.00	3.41	0.77
Perceptions of Danger			1.00	5.00	3.17	0.96

	Neighborhood Cluster SES			
Race/Ethnicity	Low	Medium	High	Total
75% Black or more	9	4	4	17
75% White or more	0	4	8	12
75% Latinx or more	4	4	0	8
20% Latinx or more/20% White or more	4	5	4	13
20% Latinx or more/20% Black or more	4	4	0	8
20% Black or more/20% White or more	2	4	4	10
Other heterogenous	4	5	3	12
Total	27	30	23	80

# Table 3. Distribution of Neighborhood Cluster (N=80) by ethnic composition and Socioeconomic Status.

SES was measured using a six-item index that summed standardized census-based measures of

median income, % college educated, % with household income over \$50,000, % families below the poverty line, % on public assistance, and % with household income less than \$5,000.

Table 4. Two-Level HLM Predicting Perceptions of Neighborhood Danger and Policing asa Function of Neighborhood Physical Disorder.

	U	leighborhood nger	Predicting Perceptions of Police		
	Model 1	Model 2	Model 1	Model 2	
Individual Level					
Age	<b>0.00</b> (0.00)	<b>0.00</b> (0.00)	<b>0.00</b> (0.00)	<b>0.00</b> (0.00)	
Female	<b>0.16</b> (0.03)	<b>0.16</b> (0.03)	-0.02 (0.02)	-0.02 (0.02)	
Black	<b>-0.12</b> (0.05)	<b>-0.14</b> (0.05)	0.02 (0.03)	0.04 (0.03)	
Hispanic	0.08 (0.04)	0.08 (0.04)	-0.06 (0.03)	-0.06 (0.03)	
SEI	<b>-0.00</b> (0.00)	<b>-0.00</b> (0.00)	<b>0.00</b> (0.00)	<b>0.00</b> (0.00)	
Neighborhood Level					
Intercept	<b>3.07</b> (0.06)	<b>3.07</b> (0.05)	<b>3.18</b> (0.04)	<b>3.17 (</b> 0.03)	
Physical Disorder		<b>0.30</b> (0.03)		<b>-0.16</b> (0.02)	
s <sup>2</sup> Residual	0.70	0.70	0.31	0.31	
s <sup>2</sup> Intercepts	0.23	0.1	0.07	0.03	
ICC	0.25	0.13	0.18	0.09	

### Table 5. Individual Growth Curve Models for Exposure to Violence

	В	s.e
Intercept	-0.61	0.11
Time	0.12	0.14
Male	0.08	0.02
W1 Age	0.05	0.01
Black	0.17	0.04
Hispanic/Latinx	-0.05	0.04
Family SEI	0.00	0.00
Physical Disorder	0.05	0.01
W1 ETV	1.01	0.03
Time*Male	0.03	0.03
Time*W1 Age	0.02	0.01
Time*Black	0.15	0.05
Time* Hispanic/Latinx	0.23	0.05
Time* Family SEI	0.00	0.00
Time* Physical Disorder	0.02	0.02
Time*W1 ETV	-0.89	0.04
Estimates of Covariance		
Parameters		
W1 Variance	0.15	0.01
W2 Variance	0.31	0.01
W3 Variance	0.19	0.01
Residual Variance	0.08	0.01
Model Fit Indices		
-2Log Likelihood	6025.71	
AIC	6065.71	
BIC	6191.31	
n<0.01		

p<0.01

	Model 1		Mode	el 2	Model 3		
	В	s.e	В	s.e	В	s.e	
Intercept	7.25	1.45	8.07	1.44	7.74	1.49	
Male	0.49	0.35	0.27	0.35	0.26	0.35	
W1 Age	0.09	0.11	-0.04	0.12	-0.04	0.12	
Black	0.16	0.55	-0.31	0.55	-0.52	0.58	
Hispanic/Latinx	1.14	0.55	1.04	0.54	0.89	0.56	
Family SEI	-0.03	0.01	-0.03	0.01	-0.03	0.01	
Time Sqr	-3.45	1.80	-3.73	1.81	-4.15	1.88	
Time Sqr*Male	-1.57	0.43	-1.50	0.43	-1.53	0.43	
Time Sqr*W1 Age	0.56	0.14	0.60	0.14	0.60	0.14	
Time Sqr* Black	0.52	0.68	0.72	0.69	0.55	0.73	
Time Sqr* Hispanic/Latinx	0.11	0.69	0.13	0.69	0.03	0.71	
Time Sqr*Family SEI	-0.01	0.01	-0.01	0.01	0.00	0.01	
W1 ETV			1.22	0.38	1.15	0.39	
Time Sqr*W1 ETV			-0.39	0.48	-0.42	0.48	
Physical Disorder					0.19	0.16	
Time Sqr*Physical Disorder					0.19	0.20	
Estimates of Covariance Parameter	ers						
W1 Variance	20.38	1.20	20.11	1.19	20.16	1.19	
W2 Variance	23.81	1.37	24.08	1.38	24.03	1.38	
W3 Variance	35.07	1.88	35.17	1.88	35.20	1.88	
Residual Variance	28.90	1.43	27.60	1.38	27.49	1.38	

## Table 6. Individual Growth Curve Model predicting Internalizing Symptoms.

p<0.01

	Mode	Model 1		el 2	Model 3		
	В	s.e	В	s.e	В	s.e	
Intercept	7.08	1.30	7.79	1.29	6.88	1.34	
Male	1.41	0.31	1.19	0.31	1.18	0.31	
W1 Age	0.03	0.10	-0.10	0.10	-0.10	0.10	
Black	1.47	0.49	1.00	0.50	0.54	0.52	
Hispanic/Latinx	-0.62	0.49	-0.70	0.49	-1.02	0.50	
Family SEI	-0.03	0.01	-0.03	0.01	-0.02	0.01	
Time Sqr	-3.32	1.41	-3.54	1.41	-3.78	1.46	
Time Sqr*Male	-1.16	0.33	-1.12	0.34	-1.13	0.34	
Time Sqr*W1 Age	0.40	0.11	0.43	0.11	0.42	0.11	
Time Sqr* Black	0.63	0.53	0.71	0.54	0.61	0.57	
Time Sqr* Hispanic/Latinx	-0.02	0.54	-0.01	0.54	-0.07	0.55	
Time Sqr*Family SEI	0.00	0.01	0.00	0.01	0.00	0.01	
W1 ETV			1.54	0.35	1.44	0.35	
Time Sqr*W1 ETV			-0.06	0.37	-0.07	0.37	
Physical Disorder					0.41	0.15	
Time Sqr*Physical Disorder					0.10	0.16	
Estimates of Covariance Parameter	5						
W1 Variance	13.12	0.80	12.95	0.80	12.95	0.80	
W2 Variance	14.22	0.85	14.41	0.86	14.38	0.86	
W3 Variance	20.16	1.12	20.17	1.12	20.19	1.12	
Residual Variance	26.28	1.19	25.52	1.16	25.33	1.16	

## Table 7. Individual Growth Curve Model predicting Externalizing Symptoms.

p<0.01

	Model 1		Model 2		Model 3		Model 4		Model 5	
	В	s.e	В	s.e	В	s.e	В	s.e	В	s.e
Intercept	-0.18	0.12	-0.17	0.12	-0.07	0.12	-0.30	0.27	-0.06	0.16
W1 Violence	1.72	0.03	1.71	0.03	1.59	0.03	1.59	0.03	1.59	0.03
Time	-1.74	0.99	-1.67	0.99	-1.72	0.95	-1.21	2.14	-1.68	1.30
Time Sqr	1.85	1.09	1.82	1.09	1.91	1.04	0.74	2.36	2.08	1.43
Male	0.01	0.03	0.01	0.03	-0.02	0.03	-0.02	0.03	-0.02	0.03
W1 Age	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Black	0.02	0.05	0.01	0.05	-0.04	0.05	-0.04	0.05	-0.04	0.05
Hispanic/Latinx	-0.01	0.05	-0.01	0.05	0.01	0.04	0.02	0.05	0.01	0.05
Family SEI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Physical Dx	0.01	0.01	0.01	0.01	-0.01	0.01	0.00	0.02	-0.01	0.02
Time* W1 Violence	-2.63	0.27	-2.66	0.28	-2.65	0.27	-2.65	0.27	-2.65	0.27
Time*Male	0.17	0.23	0.16	0.23	0.09	0.22	0.09	0.22	0.08	0.22
Time*W1 Age	0.23	0.08	0.22	0.08	0.22	0.07	0.22	0.07	0.22	0.07
Time*Black	0.46	0.38	0.44	0.38	0.22	0.37	0.19	0.37	0.22	0.38
Time* Hispanic/Latinx	0.01	0.37	0.01	0.37	-0.15	0.35	-0.18	0.37	-0.15	0.37
Time* Family SEI	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
Time* Physical Dx	-0.07	0.11	-0.07	0.11	-0.13	0.10	-0.15	0.14	-0.12	0.14
Time Sqr*W1 Violence	1.39	0.30	1.40	0.31	1.46	0.29	1.46	0.29	1.46	0.29
Time Sqr*Male	0.00	0.25	0.00	0.25	0.03	0.24	0.04	0.24	0.04	0.24
Time Sqr*W1 Age	-0.23	0.08	-0.23	0.09	-0.24	0.08	-0.24	0.08	-0.24	0.08
Time Sqr* Black	-0.20	0.42	-0.19	0.42	0.01	0.41	0.06	0.41	0.04	0.42
Time Sqr*				<b>A</b> 4 <b>A</b>				o 11		
Hispanic/Latinx	0.01	0.40	0.01	0.40	0.14	0.39	0.22	0.41	0.17	0.41
Time Sqr*Family SEI	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
Time Sqr*Physical Dx	0.09	0.12	0.09	0.12	0.13	0.11	0.18	0.15	0.15	0.16
W1 ETV			0.04	0.03	-0.32	0.04	-0.32	0.04	-0.32	0.04
Time*W1 ETV			0.14	0.26	0.63	0.25	0.63	0.25	0.63	0.25
Time Sqr*W1 ETV			-0.04	0.29	-0.23	0.27	-0.23	0.27	-0.23	0.27

 Table 8. Individual Growth Curve Models Predicting Violence Offending.

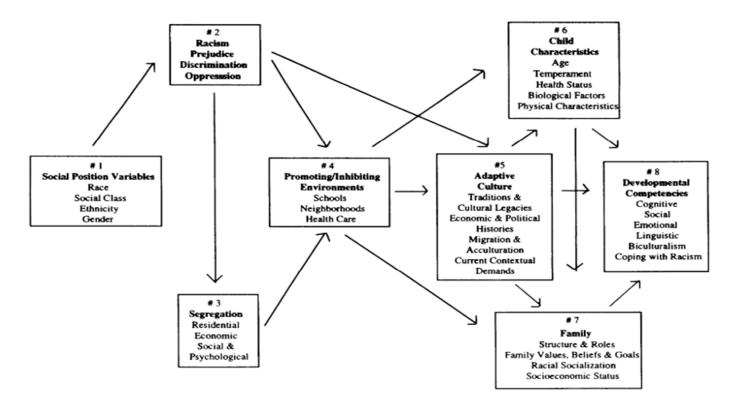
## Table 8 (cont'd)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	В	s.e								
Internalizing					0.00	0.00	0.00	0.00	0.00	0.00
Externalizing					0.01	0.00	0.01	0.00	0.01	0.00
Police Perception							0.06	0.06		
Time*Police Perception							-0.13	0.50		
Time Sq* Police Perception							0.30	0.55		
Nghbrhd Danger									0.00	0.04
Time* Nghbrhd Danger									-0.01	0.36
Time Sq*Nghbrhd Danger									-0.08	0.40
Estimates of Covariance Parameters										
W1 Variance	0.16	0.01	0.16	0.01	0.16	0.01	0.16	0.01	0.16	0.01
W2 Variance	0.60	0.03	0.60	0.03	0.53	0.02	0.53	0.02	0.53	0.02
W3 Variance	0.67	0.03	0.67	0.03	0.58	0.03	0.58	0.03	0.58	0.03
Residual Variance	0.15	0.01	0.15	0.01	0.12	0.01	0.12	0.01	0.12	0.01
Model Fit Indices										
-2Log Likelihood	8493.64		8485.36		7864.39		7859.81		7863.10	
AIC	8549.64		8547.36		7932.39		7933.81		7937.10	
BIC	8725.36		8741.90		8145.02		8165.20		8168.49	

p<0.01

	В	s.e.	<i>p</i> -value
Intercept	-1.31	0.51	0.01
W1 Age	0.28	0.18	0.11
Male	0.12	0.12	0.31
Cohort	-0.29	0.18	0.11
Black	0.17	0.20	0.41
Hispanic	0.17	0.19	0.38
Family SEI	0.00	0.00	0.27
W1 ETV Comp	0.16	0.09	0.05
W1 Internalizing	0.00	0.01	0.84
W1 Externalizing	0.02	0.01	0.12
Nbrhd Physical			
Disorder	0.05	0.05	0.38
-2 Loglikelihood	1827.60		
Nagelkerke R-Square	0.02		

 Table 9. Binary Logistic Regression Model Predicting Missing at Wave 3.



*Figure 1. Integrated model of minority youth development copied from Coll, C. G., Lamberty, G., Jenkins, R., McAdoo, H. P., Crnic, K., Wasik, B. H., & Garcia, H. V. (1996). An Integrative Model for the Study of Developmental Competencies in Minority Children. Child Development, 67, 1891–1914.* 

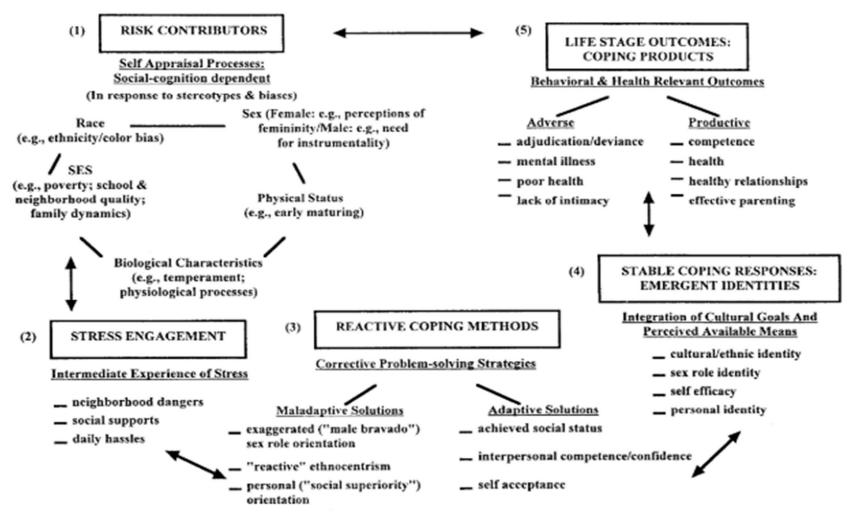


Figure 2. Phenomenological Variant to Ecological Systems Theory (PVEST) copied from Spencer, M. B., Dupree, D., & Hartmann, T. (1997). A Phenomenological Variant of Ecological Systems Theory (PVEST): A self-organization perspective in context. Development and Psychopathology, 9, 817–833.

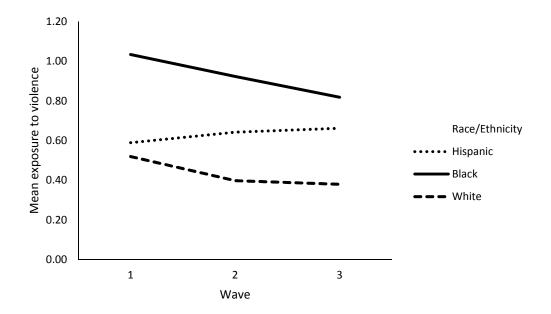


Figure 3. Line graph illustrating mean change in exposure to violence across three ways of data collection between Black, Hispanic, and White participants.

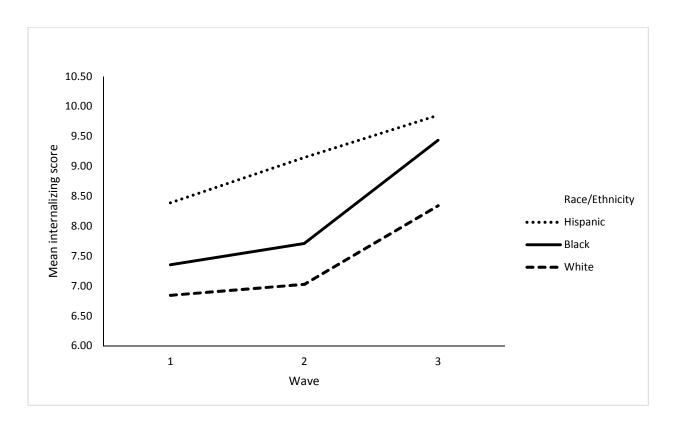
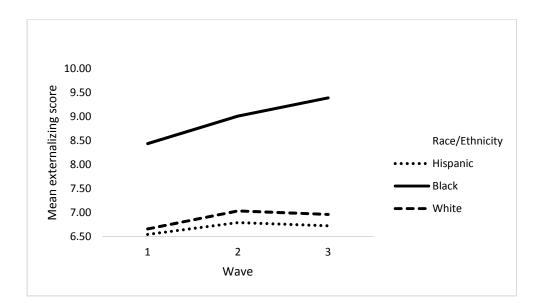
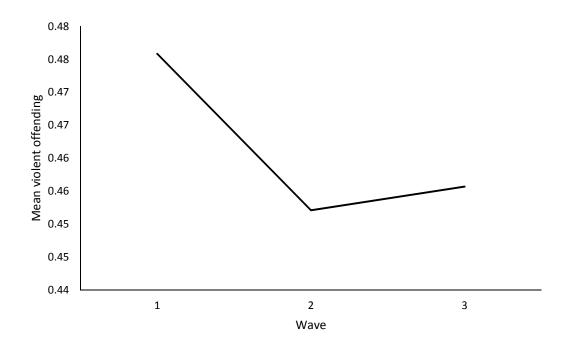


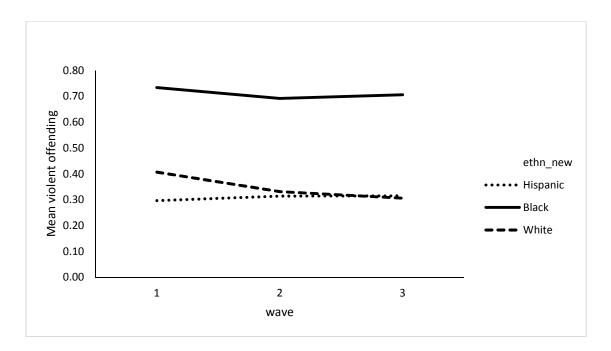
Figure 4. Line graph illustrating mean change in internalizing score across three ways of data collection between Black, Hispanic, and White participants.



*Figure 5. Line graph illustrating mean change in externalizing score across three ways of data collection between Black, Hispanic, and White participants.* 



*Figure 6. Line graph illustrating change in mean violent offending for youth across three waves of data collection.* 



*Figure 7. Line graph illustrating mean change in violent offending across three ways of data collection between Black, Hispanic, and White participants.* 

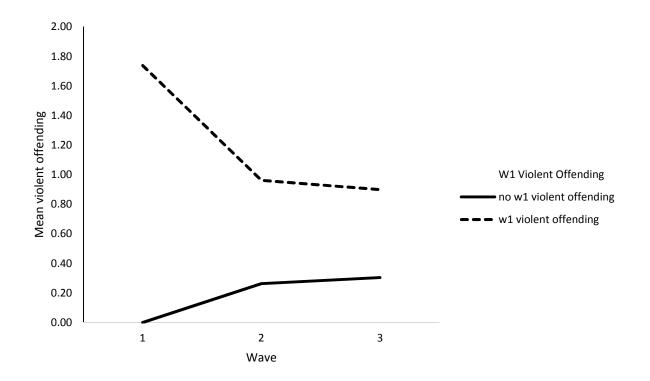


Figure 8. Line graph comparing change in mean violent offending across three waves of data collection between youth reporting no violent offending at baseline and those who did engage in violence at baseline.

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