FAMILY DISADVANTAGE, SCHOOL CONTEXT, AND THE EDUCATIONAL ATTAINMENT OF AFRICAN AMERICAN MALES

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ABSTRACT

Cheryl Ann Roberts: Family Disadvantage, School Context, and the Educational Attainment of African American Males
(Under the direction of Kathleen M. Harris and Glen H. Elder, Jr.)

Black boys and men face multifaceted and well-documented barriers to equality. Taking a life-course and ecological approach, this dissertation uses the National Longitudinal Study of Adolescent Health to investigate how the concentration of disadvantages in home and school environments in early to middle adolescence relates to the educational attainment of black males in young adulthood. This study makes strategic comparisons to black females and white youth. It finds that accumulating disadvantages in the home and school environments show a particularly negative relationship to college entry for black males relative to black females and white youth. School disadvantages also accentuate the negative effects of family disadvantage on educational attainment.

Chapter 2 investigates how multiple family disadvantages individually and cumulatively relate to high school completion and college entry. The cumulative family disadvantage index includes: low parental education, poverty status, non-intact family structure, and being born to a teenage mother. High levels of family disadvantage show a more negative relationship to college entry among black males than among black females and white youth. This chapter demonstrates how the intersection of multiple status configurations in early adolescence—race, gender and family disadvantage—relates to educational attainment.

Chapters 3 and 4 focus on the student composition at school. Among black males, concentrated schoolmate disadvantage sharply reduces the likelihood of high school completion and especially college entry (after accounting for individual, family, school, and neighborhood covariates). Chapter 4 investigates the male climate at the school level, finding that exposure to a higher prevalence of aggressive and violent boys negatively relates to the educational attainment of black and white males. This negative risk is multiplied in the presence of other disadvantages: individual family disadvantage and school environments with high concentration of disadvantaged peers. This

chapter highlights how disadvantages tend to cluster to amplify risk among African American boys. This dissertation contributes to our understanding of how interdependent ecological contexts in adolescence relate to educational attainment and how these relationships vary according to individuals' overlapping social statuses and identities (race, gender, and family background).

This dissertation is dedicated to my husband Keith, my daughter Claire, and my mother Marie-Paule.

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CHAPTER 1. INTRODUCTION

Overview

Black boys and men face multifaceted and well-documented barriers to equality. On average, African American males are the most disadvantaged race-gender group in terms of education, labor market participation, incarceration rates, and mortality—outcomes all strongly associated with family socioeconomic background as well as race/ethnicity and gender. [1] In this dissertation, I investigate how the concentration of disadvantages in the home and school environments relates to the educational attainment of black males in comparison to black females and white youth. Children's immediate environments, such as the family and school, have the largest effect on their development, with a particularly strong role in their education. As a result of systemic racial inequalities, African American children are disproportionately likely to experience multiple family disadvantages, such as poverty and single-parent family structure, and to attend schools with high concentrations of disadvantaged children. These environmental conditions have important consequences for their educational attainment and life chances. This study finds that accumulating disadvantages in the home and school environments show a particularly negative relationship to college entry for black males relative to black females and white youth. School disadvantages also accentuate the negative effects of family disadvantage on educational attainment.

Although African Americans have experienced tremendous upward mobility in the second half of the 20th century, a substantial proportion of African Americans have been left behind, with growing inequality related to education and gender (Wilson 2011; Katz, Stern, and Fader 2005). In *The Declining Significance of Race: Revisited & Revised* (2011), William Julius Wilson argues that since his original publication 30 years ago, "…the black class structure increasingly reflects gender differences, especially among younger [and low-income] blacks, as males have fallen behind females

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[1] Non-Hispanic black men, with life expectancy at birth of 71.4 years, have the shortest average life span relative to whites, Hispanics, and black females (National Center for Health Statistics 2014).

on a number of socioeconomic indicators", including educational attainment, employment rates, and income (p. 63).

In the post–civil rights period, education has become the central source of economic and life course differentiation among African Americans, as it has for all Americans in the modern economy (Katz, Stern, and Fader 2005; Wilson 2011). A gender gap in educational attainment has been growing among all race-ethnic groups over several decades, and the gap in educational attainment is largest among blacks (McDaniel, DiPrete, Buchmann, and Shwed 2011). Over the past 30 years, men without college degrees have seen their earnings and employment rates decline (Autor and Wasserman 2013); less educated black men have fared the worst (Mincy, Lewis, and Han 2006; Holzer and Offner 2006). During this same time period, incarceration rates among less educated black males have soared (Alexander 2010).

Black males experience relatively high marginalization and discrimination in American society (Ferguson 2000; Wacquant 2001; Noguera 2003). Although African Americans in general continue to encounter discrimination in various domains of life, black males also face some distinct negative stereotyping and discrimination, which affects them in schools, the criminal justice system, and the labor market (Pager 2003; Ferguson 2000; Alexander 2010). These challenges have intergenerational implications. The precarious economic prospects of black men with low education or a criminal record significantly increases poverty among black families and contributes to lower marriage rates and higher prevalence of single-parent families (Edin and Kefalas 2005; Schneider 2011).

Scholars have studied the black-white achievement gap for decades, yet we know much less about how gender and race interact with family and school disadvantage to influence educational attainment. Family socioeconomic status generally has the largest influence on children's education because of its influence on the home environment as well as the quality of neighborhoods, schools, and peer settings to which children are exposed (McLoyd, Kaplan, Purtell et al. 2009; Wigfield et al. 2006). Black children are more likely than other racial and ethnic groups to experience both family and neighborhood poverty (National Center for Children in Poverty 2010; Shonkoff and Phillips 2000). In addition, a majority of black (and Latino) children attend low-performing, high-poverty schools

(Orfield and Lee 2005; Logan, Minca, and Adar 2012). Disadvantages tend to cluster and having more disadvantages is associated with worse developmental outcomes (Rutter 1979; Furstenberg et al. 1999). In the same disadvantaged contexts, boys and girls may experience different environments, risks, and expectations (e.g., Ehrmann and Massey 2008) or they may respond differently to the same conditions (e.g., Kistner 2009). For example, in high-poverty settings, boys are more likely than girls to be exposed to violence (Ehrmann and Massey 2008). Boys raised in low-income families or dangerous neighborhoods tend to have more problems with externalizing than do girls (Aneshensel and Sucoff 1996; Kupersmidt et al. 1995).[2] In addition, in environments with concentrated disadvantage, boys may be exposed to masculine peer cultures that reward behaviors that hamper success in school (e.g., toughness and street smarts over achievement striving), leading to disinvestment in school (Morris 2012; Carter 2005). In some disadvantaged settings, significant adults such as teachers and parents also have lower educational expectations of boys than girls (Wood, Kaplan, and McLoyd 2007). These factors are all associated with decreased educational achievement and attainment (Becker and Luthar 2002; Ehrmann and Massey 2008; McLeod and Kaiser 2004).

The challenges experienced by many minority males have been recognized at the highest levels of American government. In February 2014, President Barack Obama launched a new White House initiative, My Brother's Keeper, a $200 million public and private collaboration to "help break down barriers, clear pathways to opportunity, and reverse troubling trends which show too many of our boys and young men of color slipping through the cracks in our society" (Jarrett and Johnson 2014). Noting that children of color experience relatively high rates of family poverty and single-parent families, the White House reports that the My Brother's Keeper initiative aims to help the substantial proportion of black and Hispanic males who are increasingly falling behind their female counterparts and white males on a number of important developmental outcomes, including school achievement, educational attainment, and employment. Black males, in particular, also face challenges posed by disproportionate school suspension, racial profiling by law enforcement and disproportionate arrest and detention as juveniles, and high risk for violent victimization over the life course (Jarrett and

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[2]There are also gender, race, and socioeconomic gaps in learning-related behaviors, based on teacher ratings. Learning-related behaviors affect mastery of coursework and course grades; teachers evaluate both mastery and classroom behavior when assigning grades (Farkas 2011, using data from the National Education Longitudinal Study [NELS]).

Johnson 2014). Acknowledging the considerable progress that has been made in expanding

opportunities for people of color, President Obama called for urgent attention to the distinct

challenges faced by minority boys:

> "…(T)he plain fact is there are some Americans who, in the aggregate, are consistently doing worse in our society -- groups that have had the odds stacked against them in unique ways that require unique solutions; groups who've seen fewer opportunities that have spanned generations. And by almost every measure, the group that is facing some of the most severe challenges in the 21st century in this country are boys and young men of color….That's why, in the aftermath of the Trayvon Martin verdict, with all the emotions and controversy that it sparked, I spoke about the need to bolster and reinforce our young men, and give them the sense that their country cares about them and values them and is willing to invest in them." (President Obama, 2/27/14).[3]

Building on issues of race and gender, this dissertation uses the National Longitudinal Study

of Adolescent Health to investigate the relationships among family disadvantage, concentration of

schoolmate disadvantage, and the educational attainment of African American males, with

comparisons to black females and white youth. Taking a life-course (Elder 1974/1999) and ecological

approach (Bronfenbrenner 1979, 1994), this research follows a nationally representative sample of

7th–8th grade African American males into young adulthood to investigate how multiple family

disadvantages and schoolmate context predict their educational attainment and how school and

family disadvantages interact. This work incorporates the concept of cumulative risk (Rutter 1979)

and contributes to the literature on how individual status configurations and contextual factors interact

in development. The dissertation specifically addresses the following questions:

- How does having multiple family disadvantages (sociodemographic risk factors)
  cumulatively relate to the educational attainment (high school completion and
  college entry) of African American males compared with black females and white
  youth? The cumulative family disadvantage index includes low parental
  education, poverty status, non-intact family structure, and being born to a
  teenage mother.

- In the school environment, how does the concentration of schoolmate
  disadvantage (median cumulative family disadvantage index at the school level)
  relate to the educational attainment of black males compared with other groups?

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[3] Retrieved September 27, 2014 (http://www.whitehouse.gov/the-press-office/2014/02/27/remarks-president-my-brothers-keeper-initiative).

- Considering the male climate at the school level, how does the prevalence of boys with aggressive and violent behavior relate to the educational attainment of black (and white) males? Does attending school with more aggressive boys amplify negative effects of individual family disadvantage? At the school level, does a more aggressive male climate accentuate negative effects of concentrated schoolmate disadvantage—is there a synergistic relationship?

This dissertation is organized by five chapters, including Chapter 1—the introduction, Chapters 2 through 4—the three empirical chapters, and Chapter 5, the conclusion. This introductory chapter: places this project in the broader historical and institutional context shaping pathways of African American males; discusses the rationale for focusing on educational attainment, comparative trends in educational attainment for African American males, and specific educational challenges experienced by black males; and describes the theoretical framework, analytic models, and data source for the dissertation.

Broader Social and Historical Context Shaping Pathways of African American Males

To understand processes of social inequality affecting the life chances of children, it is important to consider overlapping social identities and status positions—race/ethnicity, gender, and family socioeconomic position—within a broader social and historical context. Historical processes structure current circumstances, opportunities, and inter-group relations. Two hundred years of slavery in the United States were followed by 100 years of apartheid policies of the Jim Crow era, which disenfranchised blacks and enforced segregation and discrimination in all domains of life.[4] The Jim Crow system and legal discrimination formally ended with the Civil Rights Act of 1964 and the Voting Rights Act of 1965. With the removal of legal and formal social, economic, and political barriers, poverty rates sharply declined among African Americans over the latter half of the 20th century as African Americans have had more access to education and opportunities (Katz, Stern, and Fader 2005).

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[4] While African Americans experienced Jim Crow policies in the South, they also faced discrimination and difficult conditions in the North. As millions of African Americans migrated North in the early to mid-20th century for industrial and service jobs, they were generally restricted to living in crowded and underserved urban ghettos and considered for the least desirable jobs (Wacquant 2002).

Although African Americans have experienced a great deal of social and economic progress, significant structural barriers remain to upward mobility for a large minority of African Americans. African American children are disproportionately likely to experience multiple disadvantages in their environment, such as low family socioeconomic status, single-parent family structure, and high-poverty neighborhoods and schools—all of which affect children's development and educational outcomes (McLoyd 1998; Hill, Holzer, and Chen 2009; Logan, Minca, and Adar 2012). The distressed urban neighborhoods in which many black children live are usually highly racially segregated (Massey and Denton 1993; Charles 2003), with high rates of single-mother households, unemployment, residential instability, and community violence (Sampson, Morenoff, and Gannon-Rowley 2002).

For African Americans, schools continue to be mostly separate and unequal (Logan, Minca, and Adar 2012). In 2003, 73% of African American students attended majority non-white schools, which typically have concentrated poverty, very low test scores, low-quality teachers, and limited resources (Rowley, Kurtz-Costes, and Cooper 2010). Using national data from standardized test results in 2004, Logan and colleagues (2012) found that from elementary school through high school, black children attend schools with average reading and math scores in the 35th to 38th percentile of performance compared with other schools in the same state; [5] by contrast, white students attend schools with average test scores in the 59th to 61st percentile. The racial/ethnic disparities in test scores were strongly associated to the levels of school poverty. African American and low-income youth are also disproportionately likely to be placed in special education or in lower-level and poorer-quality academic tracks and to be retained in a grade; these processes are all associated with worse educational outcomes, increased disengagement and problem behaviors, and higher risk of dropout (Entwisle, Alexander, and Olson 2010; Eccles and Roeser 2011; Rowley, Kurtz-Costes, and Cooper 2010).

In place of legal exclusion and oppression, racial inequality now reflects cumulative and structural processes of disadvantage, with increased differentiation among African Americans (Katz, Stern, and Fader 2005). In the modern economy, education has become the central source of economic differentiation and widening inequality among African Americans (Katz, Stern, and Fader

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[5] Latino children, on average, attend schools with similar low performance for elementary school, in the 36th–39th percentile; by high school, average school performance increases to the 44th–46th percentile for Latinos.

2005). African Americans with less training and education face increasingly difficult employment prospects—low-wage, insecure jobs, with growing rates of unemployment and nonparticipation in the labor force (Wilson 2011). As income has increased among more highly educated African Americans, the bottom one-fifth of black families have become significantly poorer since 1975 (Wilson 2011).

Starting in the second half of the 20th century, patterns of inequality among African Americans also reflect growing gender divergence, with black males from disadvantaged backgrounds falling behind in educational and occupational achievement and labor force participation (Wilson 2011; Katz, Stern, and Fader 2005).[6] Labor force nonparticipation among black men aged 21–25 increased from 9% in 1940 to 27% in 1990 and 34% in 2000. Among black men aged 41–50, 25% were outside the labor force in 2000. During the same time period, the labor force participation of black women dramatically increased, surpassing that of black men by the year 2000 (Katz, Stern, and Fader 2005). Several factors have negatively affected the economic mobility of black males (Katz, Stern, and Fader 2005). Key ones include:

- structural changes in the economy and types of jobs available (Katz, Stern, and Fader 2005);[7]

- employer discrimination toward black men in particular and preference for hiring black women over black men (Moss and Tilly 2000; Kirschenman and Neckerman 1991; Darity and Mason 1998); [8]

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[6]Katz, Stern, and Fader (2005) use Census IPUMS data. Before 1940, labor force participation rates of adult black men were about the same as for white men—a very low percentage did not work. By 2000, over twice as many black as white men aged 31–50 were not in the labor force.

[7] Katz, Stern, and Fader (2005) review how structural changes in the economy since the 1940s have negatively affected employment of black men in particular, starting with the collapse of agricultural employment. Only a minority of black males (less than 20%) were able to transition to manufacturing jobs. As a result of discrimination and a decline in semiskilled manufacturing jobs, black men were less able than white men to transition out of agriculture to other types of work. Black women moved out of agriculture earlier than black men, first to work in private households, then with their increasing education, to new opportunities for white-collar jobs in government and the growing service industry. By 2000, 63% of adult black women were employed in white-collar jobs compared with less than 40% of black men. Racial barriers came down first for employment with the federal government. The expansion of the federal government in the 1960s and early 1970s, combined with new affirmative action, helped African Americans, especially women, obtain government jobs.

[8] Moss and Tilly (2000) conclude based on their review of the literature of employer interviews, that for many employers, "the racial queue, from most-preferred to least-preferred workers goes from whites and Asians to Hispanics to black women to black men." (p. 157).

- increasing importance of "soft skills" for jobs in the new economy and employer perceptions that black males lack soft skills (Moss and Tilly 1996);[9]

- black women's growing advantage in education, which has become more important for good jobs (Wilson 2011);[10] and

- sharp increases in incarceration of black males since the 1980s (Alexander 2010).

Black males have been hit hardest by the changes in criminal justice policies associated with the War on Drugs launched by the federal government in the 1980s (Alexander 2010). Based on current incarceration rates, the U.S. Bureau of Justice Statistics estimates that 1 in 3 black males born in 2001 will go to prison during their lifetime, compared with 1 in 17 white males and 1 in 6 Hispanic males (Bonczar 2003).[11,12] Incarceration has become a normative experience among socioeconomically disadvantaged black males.

Michelle Alexander (2010) and Loic Wacquant (2002) argue that the contemporary mass arrest and incarceration of African Americans functions as a new system of racial control in the United States, replacing the Jim Crow–era laws and restrictions.[13] Based on extensive historical research, political scientist Vesla Weaver (2007) documents how the federal expansion of the penal system, with more punitive criminal justice policies, began as a political response by Southern segregationists in Congress to the success of the civil rights movement; they reframed racial unrest (urban riots) as a

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[9] Based on in-depth interviews with 56 employers, Moss and Tilly (1996) conclude that employers' negative assessment of black males as workers were based on three factors: "…racial stereotypes, cultural differences between employers and young black men, and actual skill differences" (p. 270). They found from their surveys that employers valued two broad clusters of soft skills related to motivation and the ability to interact well with customers, colleagues, and supervisors.

[10] Labor market returns to college have also risen more quickly for women than men (Murphy and Welch 1992), especially among African Americans (Kane 1994).

[11] Based on 2001 incarceration rates. This does not include individuals who served time in county jails (Bonczar 2003).

[12] According to Pettit and Western (2004), "…recent birth cohorts of black men are more likely to have prison records (22.4 percent) than military records (17.4 percent) or bachelor's degrees (12.5 percent)" (p. 164).

[13] Wacquant further argues that as industrial jobs have declined and the welfare state has contracted, the penal system has grown, with the effect of criminalizing poverty (Wacquant 2009).

crime problem and, more broadly, politicized and racialized crime.[14] This trend of increased

punishment sharply intensified starting in the 1980s with the War on Drugs, which heavily targeted

minority communities and increased the number of Americans incarcerated for drug offenses more

than ten-fold (Sentencing Project 2014).[15] African Americans, who represent about 13% of the U.S.

population, use illegal drugs at similar rates as white Americans (Substance Abuse and Mental Health

Services Administration [SAMSA] 2009); however, black men have 13 times the rate of incarceration

in state prison on drug charges compared to white men (Sentencing Project 2014). Although African

Americans represent 16% of youth, they comprise 38% of children incarcerated in juvenile facilities

and 58% of minors admitted to state adult prison in 2002 to 2004 (Hartney and Fabiana 2007).[16]

Disparate arrest and incarceration of black males has marginalized and stigmatized them as

a group, posing large barriers to employment and fostering negative stereotypes and discrimination

(Alexander 2010; Welch 2007). Individuals with a felony conviction face lifelong stigma and

marginalization, with legal discrimination in employment, housing, and federal benefits (Alexander

2010). Studies have found that employers are highly reluctant to hire individuals with a criminal record

(e.g., Holzer and Raphael 2003), especially black males with a criminal record (Pager 2003).[17]

Education and Life Chances: The Issue of Race and Gender

"A bachelor's degree is the closest thing to a class boundary that exists today" (Andrew

Cherlin, *New York Times*, September 2, 2014). Education has become increasingly important for

labor market success and economic security in modern society. It influences all other domains of life,

including health, longevity, marriage, family life, and equal participation in society. High educational

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[14] The Southern segregationist agenda morphed into the "get tough on crime" law-and-order political strategy. The federal government had a much more limited role in crime and law enforcement prior to the 1960s (Weaver 2007).

[15] Most of those incarcerated on drug crimes are low-level drug offenders without any history of violent crime (Sentencing Project 2014).

[16] A 2002 review of research published between 1989 and 2001 on disproportionate minority confinement found that 25 of the 26 studies identified racial bias as a significant factor in at least one stage of the juvenile justice process (Pope, Lovell, and Hsia 2002) or bias was present for certain types of offenses. Some studies included other minorities in addition to African Americans, in particular Latinos; one study focused on Native Americans.

[17] A 2001 experimental audit study of employers in Milwaukee, Wisconsin, used matched pairs of individuals to apply for entry-level jobs, varying race and criminal record of the applicant. Employer call-back rates revealed their hiring preferences: 1) white males with no criminal record, 34% call-backs; 2) white males with a criminal record, 17%; 3) black males with no criminal record, 14%; 4) black males with a criminal record, 5% (Pager 2003).

attainment promotes positive outcomes in many life domains and helps prevent adverse outcomes such as poverty, unemployment, and incarceration. Because of the important resources associated with socioeconomic status, low socioeconomic status has been argued to be a "fundamental cause" of disease and inequality in health (Link and Phelan 1995). Education is associated with large and growing gaps in life expectancy. In 2008, black and white men with at least 16 years of education could expect to live approximately 10 and 14 years longer, respectively, than black males with less than 12 years of education (Olshansky, Antonucci, Berkman et al. 2012).[18]

As well-paying jobs have disappeared for individuals with a high school degree, a college degree has now become a central asset to attaining a middle-class lifestyle (Cherlin 2014). Family structure patterns increasingly differ between individuals with a college education and those with less education, further adding to the class divide. High economic insecurity has led to decreasing marriage rates and increased non-marital childbearing among those with less education (Cherlin 2014). The precarious economic position of less educated African American males, in particular, impedes their ability to provide economic security for women and children. The relatively low economic status of African American males has been a central factor in historically low marriage rates among African Americans, and especially in sharply declining rates of marriage (with increased non-marital childbearing) in recent decades (Oppenheimer 2003; Oppenheimer, Kalmijn, and Lim 1997; Wilson 1987; Edin and Kefalas 2005). Non-intact family structure adds to the disadvantages of low-income children, who often experience educational barriers (Cherlin 2014; Amato 2005). A growing number of studies suggest that the single-parent family structure—usually comprised of a single mother—may have more negative effects on the educational attainment of boys than girls (Autor and Wasserman 2013; Jacob 2002; Buchmann and DiPrete 2006).

African Americans with less education are increasingly being left behind (Wilson 2011). In particular, less educated black males face the most challenges in terms of employment, earnings, and incarceration (Mincy, Lewis, and Han 2006; Holzer and Offner 2006; Sum et al. 2009). For example, among young males ages 16–24, black males without a high school degree have the lowest employment rate, at 31% in 2008 (Sum et al. 2009). Low educational attainment puts young men of

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[18] Based on life expectancy at birth. These gaps occurred at all ages throughout the adult years from 20 to 80.

all race/ethnic groups at increased risk for criminal justice involvement and incarceration (Sum et al. 2009);[19] however, risks of incarceration are highest for black males who drop out of high school. In 2009, the likelihood of ever serving time in prison was 28% for white male dropouts and nearly 70% for black male dropouts under age 35 (Western and Muller 2013). Having high concentrations of young men involved with the criminal justice system also affects the neighborhood and school contexts for disadvantaged black male children in particular (Travis 2001; Hagan and Foster 2012).

On average, African American males have the lowest educational attainment among race/gender groups, and the gender gap in educational attainment is largest among blacks. Relatively low educational attainment among African American males is a central barrier to intragenerational and intergenerational social mobility. A 2012 study from the Schott Foundation for Public Education found that 52% of black males entering high school in 2006 graduated with a diploma in 2010.[20] The gender gap in high school graduation among African Americans was about 13% in 2001 (Orfield, Losen, and Wald 2004). Compared to other demographic groups, black males are more likely to obtain a GED as a substitute for a high school diploma;[21] however, the labor market returns to the GED are more similar to dropping out (Cameron and Heckman 1993). Eleven percent of black males born in the early 1980s graduated from college (Bailey and Dynarski 2011), about half the rate of black females (Wilson 2011).[22]

Since the early 20th century, black women have graduated from college at higher rates than men, but the gender gap among blacks has grown since the 1970s (Bailey and Dynarksi 2011). In 1979, the ratio of bachelor's degrees earned by black females to males was 144:100; in 2006, this ratio increased to 196:100 for a bachelor's degree, with a ratio of 255:100 for master's degrees. In contrast, only recent cohorts of white women are completing college at higher rates than white men.

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[19] In 2008, young men who dropped out of high school were 47 times more likely to be incarcerated than young men with a college degree. (Sum et al. 2009).

[20] Estimates for high school graduation rates vary depending on the methodology. (For example, see Heckman and LaFontaine 2010). In 2008, almost one in five black men between ages 20 and 34 did not have either a high school degree or GED; those who did not complete their high school education were more likely to be incarcerated than employed (Pettit 2012).

[21] Among high school completers, black males are nearly twice as likely as white males to obtain the GED certificate instead of the diploma (Cameron and Heckman 1993).

[22] William Julius Wilson (2011) citing the U.S. Department of Education, National Center for Education Statistics, Integrated Post-secondary Education Data System, Fall 2007. Completions component.

Among whites, the 2006 female to male ratio is 130:100 and for Hispanics it is 158:100 (Wilson 2011).[23]

Negative stereotypes about African American males, as well as other environmental factors, may foster views that black males are less inclined toward academics than white youth or black females. Hudley and Graham (2001) found that African American youth strongly associate high levels of achievement striving with African American girls and low levels with African American boys. Recent research among a low-income population found that black males have lower educational expectations than do black females (Wood, Kaplan, and McLoyd 2007). Moreover, their mothers and teachers also have lower expectations of them than they do of African American girls (Wood et al. 2007; Ross and Jackson 1991). Mother's expectations mediated the gender gap in expectations among African American youth (Wood et al. 2007). Different expectations may also be in response to some of the challenges faced by boys in socioeconomically disadvantaged environments as well as particular challenges experienced by African American and minority boys.

Particularly destructive is the stereotypical association of young black males with crime. In a broad review of the scholarly literature, psychologists Richeson and Bean (2011) conclude that among the general American public, "Black men are strongly associated with threat-related concepts, such as anger, danger, and criminality. These stereotypical associations are apparent in both explicit and more implicit or subconscious judgments and evaluations of Black men." (p. 5). Moreover, through a series of laboratory experiments, psychologists Goff and colleagues (2014) found when police officers and college students were asked to assess children suspected of committing a crime, they viewed the black boys as older and more culpable compared to the white boys. [24,] Thus, the black children were not evaluated with the same considerations of childhood.

Many scholars argue that black boys are treated differently than other groups in school (e.g., Davis 2003; Noguera 2003; Skiba et al. 2002; Ferguson 2000; Lopez 2003). Although other disadvantaged minority and low-income students experience similar challenges, black males—

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[23] Ibid.

[24] After age 9, black children were perceived as less innocent than white children, and in several of the experimental studies black children were estimated to be as much 4.5 years older than their age, thus viewed as an adult at age 13.

especially low-income black males—are more likely than other groups to be suspended, expelled, and placed in special education.[25] These factors increase school disengagement, failure, and dropout (Noguera 2003; Davis 2003; Skiba et al. 2002). In 2011–2012, 20% of black boys and over 12% of black girls in elementary and secondary schools in the United States received an out-of-school suspension compared to 6% of white boys and 2% of white girls (U.S. Department of Education 2014).[26] In a large urban school district, Skiba and colleagues (2002) discovered that although there was no racial difference among middle-school boys in engaging in disruptive behavior, black boys were referred more often to the office, leading to differential rates in suspension.[27] In addition to discrimination, cultural conflict and misunderstanding may also contribute to problems with teachers. Several studies have found that the academic sidelining and disproportionate punishment of black males may be partly influenced by low expectations of school staff, lack of classroom management skills, and views of poor and black males as potential troublemakers rather than scholars (Ferguson 2000; Lopez 2003; Davis 2003).

Growing longitudinal research has found that perceived racial discrimination among African American adolescents is associated with reduced academic motivation and achievement, problem behaviors, and decreased psychological well-being (Wong, Eccles, and Sameroff 2003; Gibbons et al. 2004). Although experiences of racial discrimination are normative among African American adolescents, boys perceive discrimination more frequently than do girls (Seaton et al. 2008).[28]

Class is also a factor in addition to gender and race. Entwistle, Alexander, and Olson (2007) found that low-income boys in general are treated differently starting in 1st grade in terms of grades, tracking, and retention. Low-income boys are more likely to be retained for the same conduct scores

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[25] Black boys represent 9% of the public school population but 20% of the special education enrollment (Thomas and Stevenson 2009, citing Jackson 2008). Black students are also disproportionately referred to law enforcement and subject to school-related arrests (U.S. Department of Education 2014).

[26] Disproportionate suspension starts in preschool. Although black children represent 18% of preschool enrollment, they comprise 48% of preschool children receiving more than one out-of-school suspension (U.S. Department of Education, Office for Civil Rights 2014).

[27] Skiba and colleagues (2002) found that race and gender predicted disparities in office referrals, suspensions, and explusions somewhat more than class.

[28] Based on a nationally representative survey, Survey of American Life. Eighty-seven percent of African American youth report experiencing at least one discriminatory incident in the past year, with an average of 5 out of 13 of the discriminatory incidents surveyed (Seaton et al. 2008)

as girls; this has cumulative negative effects. The authors argue that children's adaptation to the classroom is influenced by teachers' and parents' views of them, and this undermines the low-income boys. Discussing the position of black male youth, Noguera (2003) notes that "…labeling and exclusion practices can create a self-fulfilling prophesy and result in a cycle of antisocial behavior that can be difficult to break" (p. 343). The educational performance and difficulties black males face in school are consistent with their disadvantaged position in society (Noguera 2003).

Increasing research in developmental science and the social sciences highlights the importance of taking gender into account to understand interactions of person and environment. Gender affects the social environment, including socialization, expectations, and treatment by parents, teachers, other adults, and peers. How gender influences educational outcomes for youth may vary depending on race/ethnicity, class, and other contextual factors.

This dissertation argues that in spite of all the research on the black-white achievement gap, social scientists need to have a better understanding of how the intersection of race and gender influences educational outcomes and how this varies depending on family sociodemographic background and school context. Moreover, the preponderance of the research has focused on test scores; we know much less about how race, gender, and other factors interact to influence educational attainment, the most important outcome.

Linking Theory to Analytic Models

This study draws from the life-course perspective (Elder 1974/1999) and the ecological model of human development (Bronfenbrenner 1979, 1994) to understand how disadvantaged family and school contexts in early to middle adolescence influence educational attainment by young adulthood. According to the ecological model and life-course framework, human development occurs through a process of dynamic interaction between individuals and their social environment. Individuals are embedded in multiple levels of social context, all of which affect human development over the life course.

Uri Bronfenbrenner's influential ecological model outlines nested layers of environmental structures, from the most proximal to more distal. Beginning with the immediate environment, "a microsystem is a pattern of activities, social roles, and interpersonal relations experienced by the

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developing person in a given face-to face setting, with particular physical, social, and symbolic features" (Bronfenbrenner 1994, p. 39). Microsystems such as the family, school, and peer group comprise the most immediate settings that influence child development. The relationship between two or more microsystems, such as between the family and school, comprises the "mesosystem." At the next level, the "exosystem," refers to the relationship between multiple settings, "…at least one of which does not contain the developing person, but in which events occur that indirectly influence processes within the immediate setting in which the developing person lives" (p. 40). This would include, for example, how parents' employment affects children through parenting behaviors. Finally, "(t)he macrosystem consists of the overarching pattern of micro-, meso-, and exosystems characteristic of a given culture or subculture, with particular reference to the belief systems, bodies of knowledge, material resources, customs, life-styles, opportunity structures, hazards, and life course options that are embedded in each of these broader systems" (Bronfenbrenner 1994, p. 40). The macrosystem applies to the whole pattern of structures, material and symbolic, affecting the educational attainment of African Americans, including relationships among families, schools, neighborhoods, the economy, social expectations related to gender and class, and racial discrimination.

Bronfenbrenner expanded this original structural framework to include the concept of "proximal processes," which are "…the enduring forms of interaction in the immediate environment" (Bronfenbrenner 1994, p. 38). According to the ecological model, human development occurs primarily through long-term interactions between individuals and their immediate environments at the microsystem level. For children, the effects of more distal spheres are generally mediated through their influence on their immediate family, school, and neighborhood environments. Therefore, systemic social inequalities affecting African Americans primarily affect African American children through direct proximal processes occurring in these domains.

My dissertation focuses on the microsystems of the family and school, which are both central to development and have a particularly strong role in children's education. The family has primary responsibility for raising and socializing children, with a large influence on their emotional, social, and cognitive development, as well as their expectations and behaviors related to education (Bradley and

Corwyn 2002; Sewell, Haller, and Portes 1969). Schools have responsibility for children's formal

education and have broad influence on learning and social development (Becker and Luthar 2002;

Eccles and Roeser 2011). Outside of the home, children spend the most time at school (Eccles and

Roeser, 2010). Schools are social institutions where students make friends and are influenced by

peers as well as teachers. Over time, experiences in school can affect adolescents' development of

their identity, achievement motivation and behaviors, risk behaviors, and expectations and plans for

the future (Eccles and Roeser 2011). Schools remain an important source of inequality for African

Americans and African American males (Rowley, Kurtz-Costes, and Cooper 2010; Noguera

2003).[29,30] Finally, in certain disadvantaged contexts, the male peer environment can exert a negative

influence on boys' education (e.g., Morris 2012). For all of these reasons, it is important to understand

how family and school characteristics influence educational outcomes among African American

males. Although the school comprises a microsystem, there are different levels of the environment

within schools; this study examines the effect of schoolmate characteristics at the aggregate or macro

level of the school, which affects school climate, peer relationships, and classroom processes.

This dissertation also employs the life-course perspective, which has become prominent in

studying human development and health (Elder 1974/1999). The life-course framework promotes the

study of lives in an integrated way, with attention to: social context; embeddedness in social

relationships, which provide opportunities and constraints; the role of human agency within context;

and how cumulative processes can lead to pathways and trajectories over time (Elder and Shanahan

2006). Conceptually, the life-course framework overlaps with the ecological model, especially in the

emphasis on multiple levels of the environment. The life-course framework, however, includes

temporality—individual and historical time (Elder and Shanahan 2006).[31] All of these insights from the

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[29] Also see Barbarin and Crawford (2006), who found that differential treatment and stigmatization (e.g., punishment and labeling) of African American boys starts early in school, based on an observational study of over 100 randomly selected pre-K classrooms.

[30] A ten-site longitudinal study of children from preschool through 5th grade found that racial differences in school environments accounted for up to one-third of the black white achievement gap, and racial differences in family characteristics accounted for about one-half to three-quarters of the achievement gap (Burchinal, McCartney, Steinberg et al. 2011).

[31] This reflects the dynamism of individuals developing as they move through "age-graded events and roles" and interact with changing environmental contexts (Elder and Shanahan 2006, p. 667).

life-course framework inform contemporary understanding child development and are important to understanding educational outcomes among African American males.

Glen Elder (1974/1999) articulated the life-course perspective in his seminal study, *Children of the Great Depression*, which examined the effect of the Great Depression on two cohorts of children and their families. Focusing on the intersection of personal biography and social context at various levels, Elder's work reveals processes of how historical time and place shape the individual life course over a lifetime (Elder and Shanahan 2006).[32] As discussed, the development of black youth in the United States remains influenced by historical and current racism and discrimination, which has led to a high degree of racial segregation and concentrated disadvantage in neighborhoods and schools and disproportionately high rates of poverty. The life-course perspective also highlights how social changes may lead to divergent ecological conditions and life experiences within cohorts (Elder 1974, 1999), such as a growing class divide among African Americans.

Integrating temporality and context, the life-course framework directs attention to how social processes occurring in childhood and youth lay the groundwork for adult outcomes. Established institutional and social structures from macro to micro levels influence social pathways that shape the life course. Social pathways influence long-term developmental trajectories and often lead to cumulative processes, in which earlier experiences have a growing influence on later outcomes (Elder and Shanahan 2006). Family resources and the quality and structure of schools shape educational pathways early in life in the United States (Entwisle, Alexander, and Olson 2005; Entwisle, Alexander, and Olson 2010). Education notably reflects cumulative processes as learning builds on prior learning. Early educational advantages or disadvantages tend to set children on long-term trajectories (Entwisle, Alexander, and Olson 2005). The black-white achievement gap is evident as early as age 2 and grows as children progress through the grades (Fryer and Levitt 2004). Continuity of contextual environments and institutional practices, such as tracking, tend to sustain or increase inequality (Lucas 2001; Entwisle, Alexander, and Olson 2010).

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[32]As shown in Elder's longitudinal study, the effect of the Great Depression on child development varied according to the children's age, gender, family socioeconomic status, and its effect on family processes (Elder 1974/1999).

This dissertation takes a cumulative risk approach in studying the effect of multiple sociodemographic disadvantages in family and school contexts during middle school on the educational attainment of black males in early adulthood. The life-course framework and ecological models highlight how individuals usually experience correlated environmental conditions (e.g., multiple advantageous or disadvantageous conditions), which may exert additive and synergistic effects on development (Evans, Li, and Whipple 2013; Wheaton and Clarke 2003). In the 1970s, psychiatrist Michael Rutter (1979) argued for the importance of cumulative risk in studying child development, demonstrating that the total number of risk factors in a child's background was more important than any particular risk factor in influencing psychiatric disorders. This has been widely replicated in developmental psychology and for a range of developmental outcomes (Evans, Li, and Whipple 2013). Children living in poverty accumulate multiple environmental risks, which can have additive or compound negative effects (Evans 2004; Wheaton and Clarke 2003).

The life-course perspective also emphasizes the importance of timing in human development, including age-graded social pathways (Elder 1985; Elder and Shanahan 2006).[33] My dissertation focuses on early to middle adolescence, ages 12 to 15, because this period of adolescence is a critical time of transition both developmentally and academically. The middle school transition sets the stage for a successful high school experience and beyond (Becker and Luthar 2002). This period has been understudied in the educational attainment and contextual effects literature. By age 16, many at-risk youth will have already dropped out of high school. The requirements, expectations, and consequences in school become more serious in the middle grades with the onset of adolescence. "It is a world in which....adult approval in school begins to have serious, material consequences for students' later academic success." (Elmore 2009, p. 194). Students have to adapt to the often impenetrable rules and institutional cultures of schools to succeed (Elmore 2009).

At the same time, early to middle adolescence is a time of increasing autonomy and agency. Developmental tasks include increasing relations with others outside the family, such as with peers, and achieving greater competence and independence (Collins and Steinberg 2006). The onset of adolescence and transition to middle school is characterized by growing focus on peer relationships,

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[33] Child and adolescent development includes critical periods, cumulative processes, trajectories, transitions, and turning points—all of which can affect long-term outcomes.

and time with peers increases. Susceptibility to peer influence also increases between ages 10 and 14, then decreases into late adolescence (Collins and Steinberg 2006). Based on their attitudes and behaviors, peers can be both positive and negative influences on a young person's educational achievement and attainment. This period of adolescence is also characterized by increased risky behavior without the concomitant development of judgment. Neuroscience research shows that between about age 13 to 15, the brain changes to increase risk taking and sensation seeking before the executive function sufficiently matures for adequate self-governance (Collins and Steinberg 2006).

Finally, the life-course perspective and ecological model lead to examination of how the effects of environmental contexts on human development may vary depending on characteristics of the individual and the environment as well as the developmental outcome (Bronfenbrenner 1994; Elder 1974/1999). My dissertation hypothesizes that in early to mid-adolescence, the relationships between cumulative family disadvantage and schoolmate disadvantage on educational attainment vary depending on children's race and gender. According to the ecological framework, this is a "person-context model," which considers multiple dimensions of a social location (a "sociological niche") simultaneously interacting with characteristics of the individual (Bronfenbrenner 2005, p. 72–73). At the mesosystem level, this study also investigates how the relationships between the family and school microsystems affect educational attainment.

Analytic Models

This section discusses the analytic models for each of the empirical chapters. This dissertation aims to understand how family and school contextual factors in early to middle adolescence contribute to the educational attainment of African American males in young adulthood. The educational outcomes include high school degree completion and college entry, conditional on completing high school. Chapter 2, which focuses on family disadvantage (multiple sociodemographic risk factors), provides the foundational model for the subsequent empirical chapters. Chapter 3 builds on that model to look at the role of family background of schoolmates—concentrated disadvantage at the school level. Chapter 4 investigates the male climate at school—how the prevalence of boys with aggressive and violent behavior relates to the educational attainment of African American males and

whether this amplifies negative effects of family disadvantage. Each chapter uncovers particular patterns and dynamics associated with the educational attainment of disadvantaged black males by investigating family and school domains and their interrelationships. The following summarizes the aims of each chapter, with brief highlights from relevant literature.

Chapter 2. How does having multiple sociodemographic risk factors (cumulative family disadvantage index) relate to level of educational attainment for black males, from high school graduation through college entry? (See Figure 1.1.) The cumulative index of family disadvantage includes: parents' educational level; poverty status; non-intact family status; and being born to a teenage mother. Does cumulative family disadvantage have a more negative effect on educational attainment for black males than other groups (black females, white youth)?

Figure 1.1. Chapter 2 conceptual model.
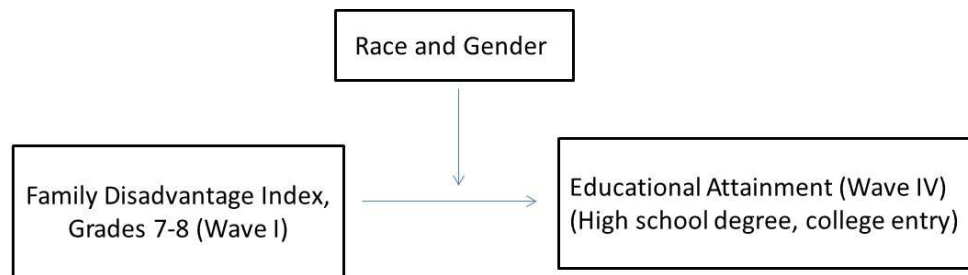
Extensive research in the social sciences has documented the importance of parental socioeconomic status and family structure in shaping children's academic motivation, achievement, and attainment (e.g., Wigfield, Eccles, Schiefele et al. 2006; Amato 2005). On average, African American children tend to have less favorable family demographic circumstances in terms of parental education and income, family structure, and teenage parenthood. These sociodemographic factors profoundly shape children's environments, including access to important resources for social, emotional, and cognitive development and exposure to environmental risks (Conger, Conger, and Martin 2010; Bradley and Corwyn 2002; Amato 2005). These factors also affect parenting resources, family stress, and parenting practices in ways that influence children's development and educational outcomes (Conger, Conger, and Martin 2010; Amato 2005; Moore and Brooks-Gunn 2002).

Effects of family disadvantages on educational attainment might vary by gender due to differences in the environment experienced by boys and differences in how boys respond to the environment. Gender may influence parental expectations and behavior as well as how family disadvantages interact with other social and community risk factors for boys. Boys, African Americans, and children from low socioeconomic backgrounds are rated by teachers as having weaker learning-related behaviors (attention and engagement) on average than girls, socioeconomically advantaged students, and white youth (Farkas 2011). In disadvantaged neighborhoods and schools, boys also have greater exposure to male peers with problem behaviors, such as aggression and delinquency, and weaker bonds to school (Farkas 2011; McLoyd, Kaplan, Purtell et al. 2009; Liljeberg, Eklund, Fritz et al. 2011). Low-income single parents have fewer resources to provide guidance and monitoring as more affluent two-parent households (Hill, Holzer, and Chen 2009). In addition, boys in single-mother families and disadvantaged communities may lack successful same-sex role models.

Although some findings have been mixed, a growing number of studies have found that boys, in particular, have lower educational attainment in single-parent households (Jacob 2002; Buchmann and DiPrete 2006). Emerging research also suggests that for college completion, boys may be more sensitive than girls to low education of the father (Buchmann and DiPrete 2006). This chapter contributes to the literature by examining the effects of several family sociodemographic factors, individually and cumulatively, on the educational attainment of black males relative to black females and white youth. Chapters 3 and 4 expand and elaborate on this model.

Chapter 3. This chapter examines the relationship between concentration of schoolmate disadvantage (median cumulative family disadvantage index at the school level) and the educational attainment of African American males compared with black females and white youth. (See Figure 1.2.) What is the magnitude of this relationship after accounting for family selection, individual, school and neighborhood factors?

Figure 1.2. Chapter 3 conceptual model.
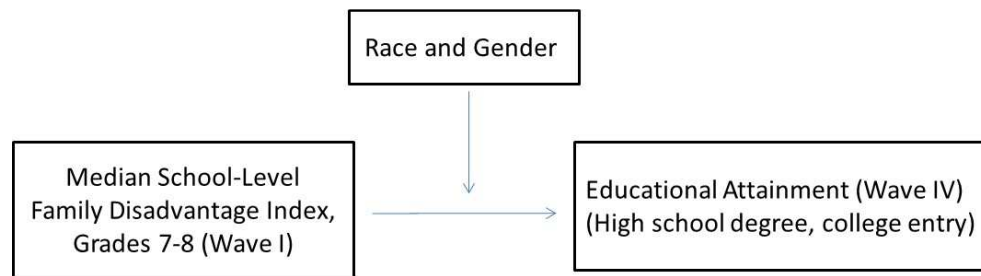
Since publication of the influential 1966 Coleman report *Equality of Educational Opportunity*, many studies have examined the effects of schoolmates' family backgrounds on individual students' educational outcomes. The Coleman report found the social composition of the school to be more strongly related to student achievement than any other school factor, after accounting for student's own social background. A large body of research, including quasi-experimental studies, has subsequently confirmed Coleman's findings that high-poverty schools and neighborhoods negatively predict educational outcomes (Crane 1991; Harding 2003; South, Baumer, and Lutz 2003), while socioeconomically advantaged schools show a positive relationship (Brooks-Gunn et al. 1993; Entwisle, Alexander, and Olson 1994; Entwistle, Alexander, and Olson 2005). Debate continues regarding causal mechanisms and the role of correlated factors. Nationally, over 60% of African American and Latino students attend schools where a majority of the students are poor as compared with 18% of white students who attend high-poverty schools (Orfield and Lee 2005).

A recent quasi-experimental study among 5th graders in Berlin found that boys' performance in school is more sensitive than girls to peer socioeconomic composition of the school (Legewie and DiPrete 2012). Some research on neighborhood disadvantage has found variable patterns by gender. Despite conflicting study results, when variation by gender is observed, neighborhood disadvantage appears to show more effect on academic achievement for black males than females (Ensminger et al. 1996; Crane 1991; Entwisle, Alexander, and Olson 1994; Crowder and South 2003). This chapter sheds light on whether schoolmates' disadvantage is more detrimental to the educational attainment of African American males compared with black females and how patterns compare with white youth.

Chapter 4. This chapter builds on prior chapters to investigate how dimensions of the male peer climate at school may negatively influence the educational attainment of disadvantaged black males. Boys attending schools with concentrated disadvantage are more likely to be exposed to boys with aggressive and violent behavior. This could have a negative effect on the academic climate for boys. This chapter investigates how the prevalence of aggressive and violent boys in school relates to the educational attainment of African American males. Further, does the presence of more aggressive and violent schoolmates moderate the relationship between individual family disadvantage and educational attainment (micro-macro interaction)? Finally, at the macro level of the school environment, does schoolmate violent behavior accentuate any negative relationship between schoolmate disadvantage and educational attainment among black males? (See Figure 1.3.) As a point of reference, I also examine patterns for white males.

Figure 1.3. Chapter 4 conceptual model.
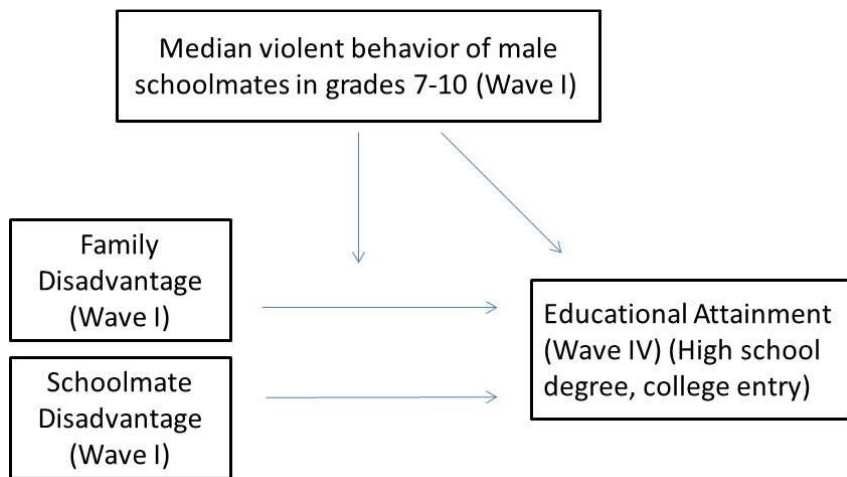
Exposure to violence compounds the disadvantage of poor urban minority youth, especially males. Attending school with a relatively high number of violent schoolmates can influence educational outcomes in multiple ways—through victimization, feeling unsafe, stress, social modeling of aggressive and risky behavior, and negative impacts on the academic, social, and emotional climate at school. A number of longitudinal and cross-sectional studies have found that exposure to violent neighborhoods or schools is associated with worse educational outcomes, increased stress,

and increased behavioral problems among children (e.g., externalizing among boys in particular) (Bowen and Bowen 1999; Harding 2009; Aneshensel and Sucoff 1996). Using the National Longitudinal Study of Adolescent Health, Harding demonstrated that neighborhood violence mediates the effects of neighborhood disadvantage on high school graduation, after accounting for individual violence and other individual, family, community, and school factors (Harding 2009). Several ethnographic studies have found that in certain disadvantaged school settings, male peer norms may reinforce masculine behaviors, such as toughness and fighting, that run counter to achievement in school (e.g., Morris 2012; Carter 2005). This chapter reveals whether having a higher concentration of schoolmates with aggressive and violent behavior compounds the effect of family disadvantage and schoolmate disadvantage on black males' educational attainment.

Data Source

This dissertation uses data from the National Longitudinal Study of Adolescent Health (Add Health), Waves I–IV.[34] The primary sampling unit for Add Health was high schools in the United States, with the sampling frame derived from the Quality Education Database.[35] A stratified sample of 80 high schools (with at least 30 students) was selected with probability proportional to size. Schools were stratified by region, urbanicity, school type, school size, and ethnic composition to be representative of the United States. The study also recruited one middle school (or feeder school) for each high school. Overall, 79% of the contacted schools agreed to participate in the study, yielding a sample of 80 high schools and 52 middle schools.[36]

In the first wave of Add Health, an in-school questionnaire was administered to all 7th–12th grade students attending the sampled schools on a particular day during the 1994–1995 school year

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[34] This research uses data from Add Health, a program project directed by Kathleen Mullan Harris and designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill, funded by grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development with cooperative funding from 23 other federal agencies and foundations. Special acknowledgment is due Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Information on how to obtain the Add Health data files is available on the Add Health website (http://www.cpc.unc.edu/addhealth). No direct support was received from grant P01-HD31921 for this analysis.

[35] Harris, Kathleen Mullan. (2013). The Add Health study: Design and accomplishments, Carolina Population Center, University of North Carolina at Chapel Hill. [WWW document]. URL: http://www.cpc.unc.edu/projects/addhealth/data/guides/DesignPaperWIIV.pdf.

[36] Harris, Kathleen M., C.T. Halpern, E. Whitsel, J. Hussey, J. Tabor, P. Entzel, and J.R. Udry. 2009. The National Longitudinal Study of Adolescent Health: Research Design [WWW document]. URL: http://www.cpc.unc.edu/projects/addhealth/design.

[n=90,118]. From these same schools, a representative sample of adolescents was selected using a gender- and grade-stratified design to complete extensive follow-up questionnaires at home [n=20,745]. A parent, usually the mother, was also interviewed at Wave I [n=17,670]. In addition, an oversample of 1,038 black adolescents with at least one parent with a college degree completed the in-school and at-home questionnaires. Follow-up Wave II in-home interviews were administered approximately one year later in 1996. Wave IV in-home interviews were conducted in 2008–2009, when study participants were age 24–32 (n=15,701).

The primary sample for this dissertation is comprised of black male students who were in the 7th to 8th grade at Wave I and completed both Wave I and Wave IV interviews. Most were ages 12 to 15 at Wave I. (Chapter 4 looks at 7th to 10th graders). The youth in this study would have been born in the late 1970s/early 1980s and attended middle school in the mid-1990s. Strategic comparisons are made with black females and non-Hispanic white youth who meet the same criteria. Strengths of Add Health for this project include its longitudinal design, following the sample from middle school to college and beyond. Add Health was designed to investigate how attributes of individuals and their environments influence their health and health-related behaviors. The dataset includes extensive family demographic and background data, school-level data, and school peer data. Multiple levels of social context can be studied. In addition, the breadth of parent and student background and behavioral data allow for development of strong measures and control variables to enhance statistical models.

Significance

This dissertation takes into account race, gender, and family background simultaneously to better capture individuals' complex status configurations and overlapping social identities (Collins 1991; Warikoo and Carter 2009). In this study, I investigate the relationship between family and school disadvantages and the educational attainment of African American males, making strategic comparisons to black females and white males. I also unravel some of the specific dimensions of school context, specifically schoolmate violent behavior, which may have a negative effect for disadvantaged males in particular. I focus on the family and school contexts because of their

dominant role in children's education. Broader structures of social inequality generally affect children's development through their influence on children's immediate environments.

Gender differences warrant more attention. As some scholars have argued, we do not know much about which types of young people are influenced by which types of contexts (Cook et al. 2002). This area of research will benefit from more systematic study of how processes and effects may vary for different groups, including by gender, race, socioeconomic background, and other individual and family characteristics. In addition, scholars are just beginning to grapple with how multiple contexts combine to affect development.

This dissertation fills a void in the literature by providing a nationally representative study of black males and their family and school contexts in early adolescence and how these relate to their educational attainment. The data for this work (Add Health) is unusual in having a relatively large longitudinal sample of African Americans and for being a school-based study. Most nationally representative studies focus on black youth as a group and educational achievement (test scores) rather than attainment. Having a better understanding of how multiple ecological environments— families and schools—relate to the educational attainment of black males helps to inform public policy interventions. The United States faces an important challenge of growing socioeconomic inequality, with some groups, such as African Americans and especially minority males, facing distinct structural challenges to their educational and economic mobility. The life chances of individuals and the future well-being of our country depend on having equal opportunities for a good education, including higher levels of education.

CHAPTER 2. FAMILY DISADVANTAGE AND THE EDUCATIONAL ATTAINMENT OF AFRICAN AMERICAN MALES

Introduction

African American children are disproportionately likely to experience multiple family disadvantages. This chapter investigates how family disadvantages in early to middle adolescence individually and cumulatively relate to high school completion and college entry among African American males compared with black females and white youth. The cumulative family disadvantage index includes parental education, poverty status, family structure, and being born to a teenage mother. These family demographic factors all relate to educational outcomes for children, including educational attainment.

As outlined in Bronfenbrenner's ecological model (1994), human development occurs primarily through long-term interactions between individuals and their immediate environments at the microsystem level. For children, the effects of more distal spheres are mediated through their influence on the immediate environments, especially the family. Extensive social science research has documented the importance of parental socioeconomic status and family structure in shaping children's academic motivation, achievement, and attainment (Wigfield, Eccles, Schiefele et al. 2006; Amato 2005). Adolescents from families with low incomes, low levels of parental education, and single parents are at higher risk of dropping out of school (Cairns, Cairns, and Neckerman 1989; Ensminger and Slusarcick 1992). In addition, children born to teenage mothers are more likely than children of older mothers to have higher rates of academic failure and delinquency in adolescence (Moore and Brooks-Gunn 2002).

Systemic inequalities experienced by African Americans primarily affect their children through long-term processes in their immediate environments, especially the family. African American children tend to experience more family disadvantages than average in terms of parental education and income, family structure, and teenage parenthood. These family sociodemographic factors broadly affect parenting resources and practices, including economic security and stress, parents'

psychological resources and parenting quality, cognitive stimulation and resources for child enrichment, parents' ability to mentor and advocate for their child educationally, their academic expectations of their children, role modeling, and social and cultural capital relevant to achievement (Evans 2004; Wigfield et al. 2006). Family socioeconomic background also strongly influences the quality of other environments children experience, including schools and neighborhoods.

Having more of these sociodemographic risk factors is associated with worse developmental outcomes (Rutter 1979; Evans 2013). In a longitudinal and ecological study of low-income children from birth through 5th grade, Burchinal and colleagues (2011) found that family demographic factors, including socioeconomic status and associated parenting practices, accounted for the largest share (one-half to three-quarters) of the black-white achievement gap.[37]

The effects of family disadvantages on educational attainment might vary by gender due to differences in the environment experienced by African American males and females as well as differences in how they interact with their environment. Most of the empirical research to date focuses on either race, gender, or family socioeconomic status (or structure). Few studies bring these status dimensions together. This masks important heterogeneity. Current literature does not sufficiently help us to understand variation by race and gender as well as heterogeneity related to family background. This study takes a step in providing a more holistic picture of how the concentration of family disadvantages relates to the educational attainment of black males compared to other groups. This chapter uses the life-course perspective (Elder 1974/1999) and ecological model of human development (Bronfenbrenner 1979, 1994) to investigate the relationship between cumulative family disadvantage in early to mid-adolescence and educational attainment among African American males in early adulthood. I make strategic comparisons to African American females and white youth.

The next section provides a focused review of the literature relating to the effects of family sociodemographic disadvantages on educational attainment, variation by race and gender, likely factors contributing to race-gender variation, and the concept of cumulative risk in child development. Given the limited empirical research specifically focused on gender differences among African American youth, I also bring in relevant literature relating to gender differences among the population

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[37] The study evaluated children in their family, school, and neighborhood environments; after families, differences in schools contributed the most to the black-white achievement gap.

as a whole and white youth. The rest of the chapter is organized as follows: research questions and hypotheses, methods, descriptive results and regression models, and discussion.

Literature Review

How Family Structure Relates to Children's Education

Over the past 40 years, the proportion of children growing up in households with both biological parents (intact families) has sharply declined to about two-thirds of children in 2007 (Sweeney 2011).[38] In 2007, more than 56% of African American children lived with a single parent, and only 37% lived with two parents (Sweeney 2011). Single-parent families are most common among mothers with the least education (Ellwood and Jencks 2004). Low socioeconomic status increases the likelihood of non-intact family structure (through non-marital childbearing and divorce), and non-intact family structure generally decreases family economic resources (McLanahan and Percheski 2008).

Research has found that children who grow up in families with two married biological parents have higher educational attainment, emotional well-being, and psychosocial adjustment compared with youth in alternative family structures (Magnuson and Berger 2009; Astone and McLanahan 1991; Teachman 2007). Growing up in non-intact family structures contributes to the intergenerational transmission of socioeconomic disadvantage (McLanahan and Percheski 2008). Compared with youth living with both biological parents, youth living with a single mother have worse educational outcomes, including school engagement, performance, and attainment, as well as more behavior problems and risky behavior, including delinquency (McLanahan and Percheski 2008; Acs 2007; Brown 2004; McLanahan and Sandefur 1994). Although households with a stepparent generally have more economic resources than single-parent families, many studies have found that children in this family structure show as many problems as children with a single parent (Amato 2005), with lower academic performance and well-being than in intact family structures (Demo and Acock 1996).

Mechanisms through which family structure can influence child outcomes include differences in economic resources, family stress, and parenting resources and behaviors (Brown 2004; Amato 1993; Carlson and Corcoran 2001; Hanson et al. 1997; McLanahan and Sandefur 1994). For

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[38] Sweeney cited data from the U.S. Census and the Current Population Survey.

example, a single parent has less help to share parenting responsibilities, including mentoring and supervision. Single parents are more likely to get overloaded and stressed, with lower levels of psychological well-being and reduced parenting effectiveness, including inconsistent parenting (Brown 2004; Cherlin 1992; McLanahan and Sandefur 1994). Because single-parent families are usually headed by the mother, the children in these households also have less exposure to their fathers and masculine role models than children in two-parent families. Children may also be exposed to more unstable relationships and family structural changes, which increase family stress (Amato 2005; Demo and Acock 1996).

How Socioeconomic Status Relates to Children's Education

Parental socioeconomic status is among the most powerful predictors of children's educational achievement and attainment (Reardon 2011; Coleman 1966). Parents' educational attainment and income both contribute strongly to children's educational outcomes.[39] The socioeconomic status of parents shapes children's physical, cognitive, and emotional environment, including exposure to family stress and danger (Evans 2004). Extensive research has found that lower socioeconomic status is associated with lower cognitive stimulation, less maternal warmth and support, and harsher discipline (Dodge, Pettit, and Bates 1994; Evans 2004). Socioeconomic disadvantage is related to punitive, less responsive, and inconsistent parenting across all ethnic groups (Collins and Steinberg 2006; Bradley et al. 2001). Moreover, youth who have low levels of social support from adults and ineffective parental supervision are at higher risk for antisocial activity (Bowen and Chapman 1996; Hoffman 2003).

Parenting strategies typically differ across social class in ways that tend to reproduce social class. Based on in-depth qualitative research, Lareau (2003) observed that middle-class parents tend to take a "concerted cultivation" approach to child rearing, emphasizing parent engagement and organized activities to foster intellectual development, high educational expectations, questioning of authority, and a sense of entitlement. On the other hand, parents of lower socioeconomic status tend

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[39] Historically, parental education has shown a stronger relationship than income to children's academic achievement, but for recent cohorts, income is almost as important. In fact, income gaps in educational achievement and attainment have been growing. The income achievement gap now greatly exceeds the black-white achievement gap (Reardon, 2011).

to take a more hands-off "natural growth" strategy, with more unstructured free time for children and an emphasis on deference to authority (Lareau 2003).

Although the vast majority of youth start off aspiring to go to college, youth from lower socioeconomic backgrounds and youth with lower academic achievement reduce their educational expectations throughout adolescence, in contrast to youth who do not have these disadvantages (Jacob and Linkow 2011).[40] Boys are also more likely than girls to lower their expectations, and the gender gap in educational expectations among adolescents is largest among youth from disadvantaged families (Jacob and Linkow 2011). In adolescence, youth become more aware of barriers to high educational and occupational attainment; a study of low-income minority students found that perceptions of educational and occupational barriers predicted reduced achievement values in early adolescence but not at younger ages (Taylor and Graham 2007; McLoyd, Kaplan, Purtell et al. 2009). Thus, early to middle adolescence is a critical age for which to study the effects of cumulative family disadvantage on educational attainment.

This next section focuses on what we know related to the race and gender gap in educational attainment among African Americans. Specifically, it considers factors associated with race, gender, and family disadvantage that might help explain this education disparity. Given the limited research in this area, there remain considerable holes in our understanding of how these factors work together.

Intersections of Gender, Race, and Family Disadvantage

A female-favorable gap in educational attainment has been increasing substantially among both blacks and whites over the past 30 years (Bailey and Dynarksi 2011). In contrast to whites, the gender gap in educational attainment among blacks has long historic roots (McDaniel et al. 2011).[41] African American females have had higher rates of college completion than black males since at least the 1940s; by contrast, only recent cohorts of white women (since the 1980s) have exceeded the educational attainment of white men (McDaniel et al. 2011). With the large increases in college attainment by white women, the gender gaps in college completion rates have been growing more

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[40] Since the 1970s, young people's educational expectations have increased, with the expectations of girls increasing more than that of boys (Jacob and Linkow 2011).

[41] However, the gender gap in college degree completion among African Americans was modest for cohorts born before 1970 (Bailey and Dynarksy 2011).

similar among blacks and whites (McDaniel et al. 2011). Among white and black youth, the largest

source of the gender gap occurs at college entry, with some additional gaps in college completion

(McDaniel et al. 2011).

The effects of family sociodemographic disadvantages on educational attainment likely vary

by gender and race-gender due to multiple causes. Based on the evidence, these seem to be the

most important factors:

- different environment and treatment of African American boys and girls, including

   differences in gender socialization by parents, other significant adults, and peers;

- boys' higher behavioral risk factors than girls (e.g., tendencies toward higher

   externalizing behavior, lower self-control, and less attention and engagement at

   school [Moffitt 2001; Farkas 2011]).[42] These behaviors may be accentuated by

   family disadvantages and associated parenting practices or the educational

   consequences may be worse for boys from disadvantaged families and in

   disadvantaged schools. It's also possible that related to sex differences in

   behavior and personality, boys may tend to be more sensitive than girls to the

   quality of the family environment in ways that affect educational outcomes; and

- how sociodemographic family disadvantages interact with social and community

   risk factors for boys and how this may vary by race.

Gender socialization in a racialized context

The broader social environment influences the expectations and behavior of parents,

significant adults, and peers, who all influence boys' socialization.[43] The development of African

American children is shaped by a racialized social context, with structural and interpersonal forms of

discrimination that that affect opportunity and well-being. Patterns of discrimination vary by race and

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[42] Moffitt and colleagues (2001) indicate that compared with girls, the boys are more likely to have neuro-cognitive deficits and hyperactivity, with under-controlled temperament. This increases risk for antisocial behavior (p. 120). They also discuss sex differences in personality: boys have weaker "constraint" or self-control and more negative emotionality than do girls. Boys also appear to be more vigilant toward perceived threats. These personality factors also make individuals more prone to aggressive behavior (Moffitt et al. 2001, p. 130–133).

[43] Parents, teachers, other adults, and peers may all have a substantial effect on gender socialization (Jacklin and Baker 1993).

gender. Increasingly, opportunities for social mobility differ by gender as well, with African American males encountering more barriers to advancement (Wilson 2011).

Black males have been confronted with negative stereotypes that differ in many ways from that experienced by black females. Historically, black males have been stereotyped as relatively more athletic and not intellectual (Hall 2001). It is well documented that black men, especially young black males, are strongly associated with crime and danger (Richeson and Bean 2011). In disadvantaged school environments, black boys are perceived as more "threatening" than are black girls (e.g., Ferguson 2000). Differential treatment in school—labeling, punishment, and stigmatization—starts as early as preschool, with negative consequences for education (Barbarin and Crawford 2006). These factors set the stage for low expectations for boys.

Low-income African American parents are aware of the difficult environment and risks that their sons may face; this may affect their expectations and behavior toward sons in ways that influence their educational pathways. In his research on socioeconomic attainment of siblings, Dalton Conley (2004) observes that the socioeconomic attainment between siblings diverges much more in poor and non-intact families than in more advantaged and intact families.[44] He argues that families with fewer resources cannot afford to invest equally in all children. Families have pecking orders between siblings, and this status hierarchy is shaped by the larger social forces that surround the family, from the economy to gender expectations and trends in family structure. Hill (2001) argues that due to the barriers and dangers faced by African American boys, black parents "may develop higher expectations for daughters than for sons and be more tolerant and self-indulgent with sons" (p. 503). They may perceive daughters as having more opportunities. In the context of racial discrimination, many black men have not been able to fulfill the traditional role as the family provider; women have historically had to assume large responsibility for the family, which created a norm to socialize black girls to be strong and independent at an early age (Hill 2001). The economic barriers that black men have faced may have also hurt the status of black men in the family and increased tensions in relationships between black men and women (Hill 1999). These larger social and

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[44] Inequality between siblings represents three-quarters of income inequality in the United States (Conley 2004).

economic forces can affect parental expectations related to the educational attainment and social mobility of their sons and daughters.

Parental expectations, which have a large influence on children, can also be influenced by stereotypes. Research by Eccles and colleagues (1993) concluded that parents' expectations about their children's abilities at an early age are commonly distorted by gender stereotypes; parents' perceptions influence the children's self-perceptions, after accounting for children's performance.[45] They argue that over time, this results in differences in skills to conform to gender stereotypes, consistent with the notion of a self-fulfilling prophecy.

Studies have found that mothers and teachers of low-income black children view black girls as more achievement-oriented than black boys (Wood et al. 2007; Ross and Jackson 1991). Recent research among a low-income population found that black males have lower educational expectations than black females (Wood, Kaplan, and McLoyd 2007) and that mothers' expectations mediated the gender gap in expectations among African American youth (Wood et al. 2007). Black boys from disadvantaged families may internalize lower expectations by significant others. Research has found that African American youth strongly associate high levels of achievement striving with African American girls and low levels with African American boys (Hudley and Graham 2001).

Family structure, parental education, and gender socialization

Emerging research has documented more negative effects of single-mother households on educational attainment for boys relative to girls (e.g., Jacob 2002; Buchmann and DiPrete 2006). Using data from the National Educational Longitudinal Study (NELS), Jacob (2002) estimates that being raised in a single-parent family versus two-parent family decreases the probability of college enrollment approximately 3% among boys, with no significant relationship for girls. Buchmann and DiPrete (2006), also using NELS data, found that the largest gender gap in college completion among 8th grade cohorts born in the mid-1970's occurred among families with an absent or less-educated

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[45] Parents often hold gender stereotypes about children's abilities in many domains (e.g., math, English, and sports); mothers who held the prevailing gender-role stereotypes were more likely than other parents to falsely perceive their child's actual abilities in the direction to conform with the stereotype. The mothers' perceptions of their children's ability in each domain then affected the children's self-perceptions in each domain, after accounting for the children's actual performance (Eccles et al. 1993). A meta-analysis on gender socialization by parents concluded that parents tended to encourage children to engage in activities consistent with traditional gender expectations (Lytton and Romney, 1991).

father. For college enrollment, they found that father's education was more important for males than females.

Why might single-mother family structure more negatively affect the education of boys than girls? One explanation that has been proposed for these patterns is that mothers and fathers have more influence on the aspirations and educational attainment of their same-sex children through gender socialization and role modeling. Because adolescents identify more closely with their parent of the same sex (Starrels,1994), same-sex parental role modeling could be especially important for educational attainment. DiPrete and Buchmann (2013) used national survey data from the General Social Survey data from 1972–2008 to test the gender role socialization hypothesis over periods of social change in women's role and the family. They found that starting with cohorts born after 1965, a growing female advantage in college completion appeared among youth in families with absent fathers or less educated fathers (high school degree or less).[46] A male advantage appeared only when the fathers had more education than the mother. Equal outcomes occurred only when both parents had attained at least some college. These results provide some support for the role of parental gender socialization on educational attainment. Thus, the sharp increase in single-parent families and growing gaps in male educational attainment appears to disadvantage sons in particular.[47]

We know less about how these patterns relate to African American youth and black males specifically. Black youth are far more likely than white youth to live in single-mother households. On the other hand, African American traditions tend to emphasize communalism, and families often receive support from extended family and non-kin (Stack 1974). Prior research has been mixed as to whether single-parent family structure shows a similar or weaker relationship to educational outcomes for African American youth; however, most of this research has not examined patterns by race and

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[46] For birth cohorts up to 1965, they found that boys held advantage in college completion in all scenarios except when both parents had some college education, in which there was no gender difference. Consistent with this, Powell and Parcel (1997), using PSID 1989 to study cohorts born between 1930 and 1959, found that growing up without both biological parents had a negative effect on women's but not men's educational attainment.

[47] The study did not have sufficient sample size to examine patterns for African American youth.

gender.[48] A recent study by Hill, Holzer, and Chen (2009) used data from the National Longitudinal Study of Youth (NLSY, 1997 cohort) and sibling and individual fixed-effects models over time to examine how single-mother family structure relates to educational attainment and other outcomes by race and gender. They found that after controlling for important covariates, single-mother family structure generally showed a similar negative relationship to educational attainment, employment, unmarried parenthood, and incarceration for both black and white youth; however, the relationship was more negative for black males than other groups for employment and incarceration. Overall, single-mother family structure exhibited a more negative relationship to outcomes for black males than females, with more modest differences related to educational attainment.[49] Factors that contributed to explaining these relationships for black and white youth include parenting behaviors (supportiveness, monitoring—maternal knowledge of youth companions, maintaining an orderly home environment, and having meals together); human capital enrichment; and neighborhood characteristics. These factors were more important for black males than black females, especially parenting behaviors, such as knowledge of peers, and the home environment.

In terms of parental education, a study by Lucia and Baumann (2009) suggests that black males may be more sensitive than black females to the education level of both parents. Using NELS data, they studied the determinants of college enrollment among black and white high school students. They found that black youth showed more sensitivity to parental education and that black males exhibited much more responsiveness than black females to both mother's and father's education for the outcome of college enrollment.[50] This does not contradict the importance of parental gender socialization; it could also be true that parental human capital in general is relatively more

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[48] Some studies that did not examine gender patterns found a weaker relationship between single-parent structure and educational achievement (grades and test scores) for black versus white youth (e.g., Dunifon and Kowaleski-Jones 2002; Heard 2007). For example, a study using data from the National Longitudinal Study of Adolescent Health found that compared with whites, time spent with a single mother showed a weaker relationship to grade point average among African Americans; social support seemed to serve as one protective factor for black youth. Having a recent family structure change, however, was associated with a larger decline in GPA among blacks (Heard 2007).

[49] In this nationally representative cohort from 1997, 80% of young blacks and 50% of young whites were living with a single mother; thus, this type of family structure can have a large effect at the population level.

[50] Black males were also more sensitive to school quality (as measured by the percentage of students in a college prep program).

important for black males' educational attainment because of some of the distinct disadvantages they face.

Family disadvantages and the gender behavior gap

Growing research indicates that behavioral advantages possessed by girls contribute to the gender gap in higher education (e.g., Jacob 2002). Family disadvantages, such as single-mother family structures, teenage parenting, and low socioeconomic status (SES), may also increase gender gaps in educational attainment by amplifying boys' tendencies toward behavioral problems or by worsening the consequences of behavioral disadvantages. On average, girls have advantages over boys in behavioral and social skills, including self-control, attention, and engagement (Farkas 2011; Moffitt et al. 2001). Boys and low-income children are more prone to externalizing behavior (Moffitt et al. 2001; Kupersmidt et al. 1995).[51,52] Some research has found that gender differences in social and behavioral problems may be stronger for boys living in higher-stress circumstances such as low-income and single-parent families (Kupersmidt et al. 1995). Studying a national sample of 8th graders with NELS data, Jacob (2002) found that a combination of behavioral differences between boys and girls (including disciplinary incidents and grades) explained about 40% of the gender gap in college entry after accounting for cognitive ability, family background, and high school achievement.[53]

Research points to parenting practices as one mechanism through which family disadvantage may increase behavioral gaps between daughters and sons. Using the Early Childhood Longitudinal Study-Kindergarten, Bertrand and Pan (2011) found that the early gender gap in self-control and disruptive behavior is dramatically larger for boys in single-mothers families; large gender gaps are also associated with having a teenage mother and lower family socioeconomic status. The authors identified two likely factors for the strong result associated with single-parent family structures: 1) single mothers treated sons differently than daughters; and 2) boys' externalizing behavior was more sensitive than girls to some parental factors, such as time invested in childcare activities. In contrast

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[51] Sex differences in antisocial behavior generally increased into young adulthood (Moffitt et al. 2001).

[52] These behavioral factors are all important for educational achievement and attainment (e.g., Farkas 2011; Moffitt et al. 2001; Jacob 2002).

[53] Jacob also found that boys were less likely than girls to believe that they needed a college education to get a job and more likely to think they could get skilled blue-collar jobs. Hence the gender gap in college enrollment was larger in geographic areas with a rural or strong manufacturing or construction sector.

to families with two biological parents, single mothers spent less time in childcare-related activities with their young sons than daughters.[54] They also spanked sons more than daughters, even holding constant children's externalizing behavior, which can evoke harsher discipline. Finally, mothers also reported feeling less emotionally close to sons than daughters. The longitudinal data showed that mothers' spanking led to increases in boys' externalizing behavior. By 8th grade, boys raised in single-parent families were much more likely to be suspended, a major risk factor for school failure and dropout.[55]

Besides differential treatment, other studies have also found boys to be more sensitive than girls to family disadvantage in relation to their externalizing and antisocial behavior. Moffitt and colleagues (2001), using the Dunedin Longitudinal Study, determined that most of the family risk factors they studied (e.g., time with a single parent and family socioeconomic disadvantage)[56] were associated with higher risk of developing antisocial behavior among boys than girls.

Finally, differences in boys' behavior relative to girls may evoke different responses from significant others, such as parents and teachers, which may lead boys to different educational trajectories. For example, early sex-related biological differences may elicit differences in parental behavior. Differences in parental behavior toward sons and daughters may increase gender differences in children over time (Raley and Bianchi 2006).[57] Small early behavioral deficits of boys at school can affect how teachers' respond to those boys, which can influence their academic pathways, regardless of their cognitive abilities. Kindergarten teachers rate minority and low-income children as having more problem behaviors (Entwisle, Alexander, and Olson 2005). Longitudinal research in Baltimore by Entwisle and colleagues (2007) document how teachers' assessments of boys' behavior can set low-income boys onto negative school trajectories. Teachers assess student conduct as well

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[54] The investigators used the American Time Use Survey for the time-use analysis.

[55] Consistent with this study, longitudinal research using the Fragile Families and Child Well Being Study found that low-income African American boys and boys living in low-resource neighborhoods tended to experience harsher maternal disciplinary practices, which was associated with increases in aggression over time (Moiduddin 2008).

[56] Other family risk factors included multiple changes in caregiver, family conflict, and inconsistent discipline.

[57] A meta-analysis by Leaper and colleagues (1998), focused on observational studies of language, concluded that mothers tended so spend more time talking with and using supportive language with daughters than sons. This could be partly related to early maturational differences between boys and girls.

as academic achievement when assigning grades. Boys with behavioral disadvantages receive more negative feedback about their performance and are more likely to be placed in lower academic tracks and retained. Entwisle and colleagues (2007) found that low-income boys who started off with the same reading test scores as girls in 1st grade were more likely to receive lower grades for reading and classroom behavior, to be placed in low readings groups, and be retained in grade. This process, along with parents' lower expectations for their performance, then led to a gender gap in reading among low-income boys. [58] Although skills in learning behaviors vary related to race, gender, and class, these social status characteristics also influence how teachers perceive and respond to students' behavior (Entwistle, Alexander, and Olson 2007; Noguera 2003). Moreover, low-income and less-educated parents face barriers to advocating effectively at school on behalf of their children (Lareau 2003), and they may have fewer resources to help their sons overcome or compensate for behavioral disadvantages.

Different community risk factors and environment for boys

African American children are disproportionately likely to experience not only family disadvantage but also concentrated disadvantage and racial segregation in their neighborhoods and schools. This places African American boys in environments with distinct risks. The male peer environment in high-poverty neighborhoods and schools poses a risk factor for boys, especially boys from disadvantaged families. In these high-poverty environments, boys are much more likely than girls to be exposed to violence, which has a negative effect on educational outcomes (Harding 2009; Ehrmann and Massey 2008). Boys are more likely to be exposed to male peers who do not invest effort in school work, as well as peers engaging in risky behavior (Morris 2012; Carter 2005). Research based on the Dunedin Longitudinal Study found that sex differences in peer relationships explain about one-quarter of the sex differences in antisocial behavior—boys are more exposed than girls to delinquent peers (Moffitt et al. 2001).

The parenting resources, human capital, and material resources of more advantaged parents can help reduce exposure to these risk factors and can help protect against some of the potential negative effects of stereotyping and discrimination, lower quality schools, low teacher expectations,

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[58] African American children typically attend schools with less qualified teachers (Rowley, Kurtz-Costes, and Cooper 2010.)

and exposure to risky male peers. Fathers and other positive male role models may help boys navigate some of the distinct challenges they encounter during adolescence. Boys living in neighborhoods with high rates of poverty, single-parent households, and incarceration have fewer successful male role models than boys living in more advantaged areas.

Differences in parental monitoring and control could also contribute to different experiences of sons and daughters in ways that influence educational attainment. Research suggests that fathers' support and informal controls have more influence over sons' delinquent behavior while mothers have more influence over the daughter's delinquency (Hill and Atkinson 1988). Using the National Survey of Families and Households, Bulcroft and colleagues (1996) found that compared to Anglos and Hispanics, African American parents give boys relatively more independence outside the home throughout adolescence, and especially in late adolescence. On the other hand, African American parents tend maintain higher control over their daughters compared with other racial/ethnic groups, possibly related to concerns of sexual risk in more disadvantaged and dangerous neighborhoods. In her study of second-generation black and Latino youth, Linda Lopez (2003) observed how parents gave boys much greater freedom than girls. The girls assumed more responsibilities to help the family and became more closely integrated into a supportive network of extended family while the boys spent much more time hanging out on the streets with other young men. She argues that these gendered child-rearing practices contributed to girls being more achievement-oriented than boys.

Because African Americans experience relatively high rates of poverty, single-mother households, teenage parenting, and low parental education—especially father's education—black males could be disproportionately affected by many of these factors. Having multiple disadvantages or cumulative risk increases negative effects on child development.

Cumulative Risk

Considerable research on child development has found that an accumulation of adversity, rather than a single risk factor, negatively affects a variety of developmental outcomes, including IQ, academic performance, mental health, and problem behaviors (Rutter 1979; Sameroff, Gutman, and Peck 2003; Evans, Li, and Whipple 2013). Moreover, risks are often correlated. Generally, no one risk factor is sufficient to cause a specific developmental outcome but rather different combinations of risk

factors can lead to the same outcome (Sameroff, Gutman, and Peck 2003; Rutter 1979).[59] A

longitudinal study of African American adolescents in Maryland examined how multiple family and

neighborhood risk factors predict academic outcomes; results demonstrated that as the number of

risk factors increased, academic outcomes declined (Gutman, Sameroff, and Eccles 2002). Risk

factors often cluster in children's lives, and more risk factors are associated with worse outcomes

(Furstenberg, Cook, Eccles, Elder, and Sameroff 1999).

Because a cumulative risk approach does not focus on a single risk factor or specific causes

of an outcome, some explanatory information is forfeited when using this approach. Nonetheless, a

cumulative risk approach is consistent with an ecological model of development (Bronfenbrenner

1979 Sameroff, Gutman, and Peck 2003). This approach provides an efficient way to examine the

effect of multiple risk factors together, especially with small sample sizes (Sameroff, Gutman, and

Peck 2003). It also provides a useful summary measure to make comparisons across groups. In

addition to investigating cumulative family disadvantage, I conduct analyses to explore which risk

factors are more important.

Research Questions and Hypotheses

This study addresses the following questions:

- How does the number of family disadvantages (cumulative disadvantage index)

  relate to high school graduation and college entry among African American males?

- Is cumulative family disadvantage more detrimental to educational attainment among

  black males than black females?

- Do gender patterns differ more among African Americans compared with white

  youth?

- Finally, do patterns differ for secondary versus higher education?

Consistent with the literature on cumulative risk, I expect that higher family disadvantage will

predict lower educational attainment among all groups.

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[59] For example, in a longitudinal study in Rochester, New York, Sameroff and colleagues (1987) examined how a cumulative family risk index predicted IQ; they found that it was the number of risk factors that mattered, not the specific combinations of risk factors.

Based on the large gender gap among African Americans and the literature I have discussed, I hypothesize that cumulative family disadvantage in grades 7 to 8 will show a stronger relationship to educational attainment among black males than black females. Related to the history of slavery in the United States and subsequent legal, social, and economic barriers, African Americans have had different gender patterns, on average, than European Americans in terms of labor market participation, educational attainment, and family structure. African American women have taken more of a leadership role than white women relative to male roles in the family. With relatively low family income and more uncertain employment prospects for black men, black women have historically needed to work;[60] thus, they have also had greater incentive for higher education (McDaniel 2011; Goldin 1977).[61]

Boys and girls experience different environments, from parents to teachers to peers. African American boys—especially low-income black boys—often face negative stereotypes and expectations run counter to high academic achievement (e.g., Wood et al. 2007; Ross and Jackson 1991; Ferguson 2000). In addition, black males from disadvantaged families and neighborhoods often lack successful role male models; single-mother families appear to have a more negative effect on educational outcomes for boys than girls. Boys in high-poverty schools and neighborhoods can be exposed to negative peer influences, which can be more detrimental to boys from disadvantaged and single-parent families.

For these historical and theoretical reasons, I also expect that gender differences in these relationships will be stronger among black than white youth. White youth also have a large gender gap in college attainment. Based on some of the gender and class differences discussed previously, I also expect white males to show more sensitivity than white females to cumulative family disadvantage for the outcome of college entry. I expect the gender difference to be smaller than among black youth, however, based on how factors associated with race, gender, and family disadvantage intersect for black boys.

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[60] There was also less social stigma in working for pay for black than white women (Goldin 1977).

[61] Historically, African American males had limited educational resources in the segregated South, where black veterans also faced barriers to using their GI benefits for a college education (McDaniel et. al. 2011, citing Turner and Bound 2003). In addition, black males with higher education were generally excluded from many of the high paying occupations available to white males (McDaniels et al. 2011).

<center>**Methods**</center>

Data and Measures

This chapter uses the National Longitudinal Study of Adolescent Health (Add Health),
focusing on black and white cohorts of youth who were in the 7th to 8th grade in 1994–1995 when the
Wave I survey was administered.

Dependent variables

The study outcomes are high school degree completion (versus dropping out or GED) and
college entry (versus high school degree), measured at Wave IV, when the sample are in their mid- to
late 20s. GED is grouped with dropping out because individuals who obtain their GED also dropped
out of high school. Research shows labor market outcomes for individuals with a GED to be, on
average, equivalent to those who drop out rather than to high school graduates (Heckman,
Humphries, and Mader 2011). In addition, in contrast to high school graduates, few GED holders go
on to complete higher education.

Respondents were asked, "What is the highest level of education that you have achieved to
date?" If respondents answered "some college," "associates degree," or any higher degree, this was
counted as some college. Vocational or technical training after high school did not count as college
entry.

Independent variables

This study focuses on four demographic factors of family disadvantage at Wave I: poverty
status, parental education, family structure, and teen parenting, detailed below. I summed these
factors into an index with values ranging from 0 to 7, with 7 representing the greatest disadvantage.
These items are combined based on their face validity, not because of their correlation.

1) **Parent's education**[62]—based on the education of most highly educated resident
   parent, where 3=less than high school, 2=high school degree, 1=some college or
   trade school but no degree, and 0=college degree or more.

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[62]Parent education data are for the parent(s) who live with the child. Some children are not living with one or both
of their biological parents. This measure does not account for the educational attainment of nonresident
biological parents.

<center>43</center>

2) **Poverty status**—Score 2 if household income in the past year (1994) was below the federal poverty threshold or the family received welfare within past month (AFDC, Food Stamps, or housing assistance). Score 1 if household income was between poverty threshold and 150% of poverty threshold. Score 0 if household income is at least 150% of poverty threshold. (Based on parent survey) (Note: this variable is missing for 10% of this sample.)

3) **Non-intact family**—Score 1 if not living with two biological parents. (Including all types of non-intact family status predicted educational attainment more than single-parent status alone.)

4) **Teenage mother**—Score 1 if Add Health participant was born to a teenage mother. (This variable was only computed for youth whose biological mother completed the parent survey.)

Control variables

At the individual level, I controlled for following factors at Wave I:

- Picture Vocabulary Test (PVT). An abridged version of the Peabody Picture Vocabulary Test, PVT measures verbal ability (Dunn 1981). This is the closest available variable to control for a central individual determinant of educational attainment, cognitive ability. It must be acknowledged that PVT captures both achievement and dimensions of crystallized intelligence, which is based on prior knowledge and experience. We know that verbal ability is highly influenced by family socioeconomic status (Mercy and Steelman 1982). Low-income children receive less verbal stimulation at home, and verbal ability may partially mediate the effect of family disadvantage on educational attainment. Thus, controlling for PVT likely understates the effect of family disadvantage on educational attainment. Nonetheless, controlling for PVT in the final model is important because individual ability is also a potential confounder of the relationship between family disadvantage and educational attainment.

Family control variables

- Parent born outside of the United States (yes or no). (This includes resident parents and any nonresident biological parents.)

- Parental alcohol abuse. Parental alcohol abuse and associated mental health problems could lead to other family disadvantages and also affect children's educational attainment. Using the Add Health parent survey, I controlled for whether the responding parent/caretaker (usually the mother) engaged in binge drinking at least once in the past month (drank at least 5 alcoholic drinks on one occasion).

School control variables

Children in low-income families are more likely to attend lower quality schools with a higher concentration of disadvantaged children. Therefore, an indirect means through which family disadvantage affects educational attainment is the quality of the school environment. Nonetheless, to try to isolate the effects of family disadvantage net of school context, I control for schoolmate compositional factors that are associated with both individual family disadvantage and predict educational attainment:

- Percentage of schoolmates with at least one college educated parent;

- Percentage of schoolmates under the poverty threshold or receiving public assistance.

(Note that controlling for a host of other school factors did not significantly alter the relationship between family disadvantage and educational attainment. Nor did controlling for census tract poverty rate.)

Analysis Plan

To model the educational outcomes, each progressive level of educational attainment should be conditional on achieving the prior level. Therefore, the subpopulation eligible to enter college must have completed either a high school diploma, GED, or certificate of high school completion.

For the analysis, I ran separate logistic models by race and gender to examine the relationship between cumulative family disadvantage and high school degree completion and college

entry. (Separate models provide the specific values for all independent variables for each group and also do not require making an assumption of equal error variances across the populations.) To better understand the individual contributions of each family disadvantage factor toward educational attainment, I first modeled each individual factor to determine its significance. Then I modeled all the factors together to observe the unique contribution of each factor when they are all in the same model. Finally, I modeled family disadvantage in an additive index and examined whether the family disadvantage index shows a linear or categorical type of relationship to the educational outcomes, including any meaningful thresholds.

Results are presented in odds ratios and also translated into predicted probabilities,[63] which offer more useful interpretation than odds ratios. Predicted probabilities simulate the probability of the educational outcome at different levels of family disadvantage while keeping other variables at their actual values. Comparing predicted probabilities among groups also avoids the problem of possible unequal residual variance among groups (Long 2009).

One aim of this study is to examine variation in the effect of cumulative disadvantage by race and gender—interaction effects. Recent methodological literature has noted that unequal residual variation (unobserved heterogeneity) by group in binary regression models can affect the slope coefficients and lead to inaccurate results of tests for interactions (Allison 1999; Williams 2009). Therefore, to conduct statistical tests of significance of differences across groups, I first used heterogeneous choice models, also known as ordinal generalized linear models (oglm), to test whether there is unequal residual variance by group (Williams 2009)[64] I generally did not find significant differences in residual variation by group; therefore, I used the conventional logistic regression models with Wald tests of interactions (Allison 1999; Kerrissey and Schofer 2013).[65] In one case, however, comparing white males and females for the outcome of high school graduation, the heterogeneous choice model showed borderline significance for differences in residual variation. In that instance, I used the heterogeneous choice model to conduct a likelihood ratio test of

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[63]I used the STATA margins command to produce the predicted probabilities.

[64] Richard Williams developed a program in STATA to run this type of model.

[65] Heterogeneous choice models can be more sensitive than logit models to misspecification (Williams 2009).

interactions for nested models. The heterogeneous choice model adjusts for unequal residual variation. A logistic model using a Wald test produced the same result.

Analyses were conducted in STATA 13.1 using the SVY command. All models were statistically adjusted for survey weighting as well as clustering due to the non-independence of children sampled by school; this provides an unbiased estimate. In analyses presented below, cases with missing data (15%) have been deleted.

Results

Descriptive Results

Educational attainment

The following tables present descriptive results for the independent and dependent variables. Table 2.1 displays the highest level of educational attainment at Wave IV for black and white 7th–8th grade cohorts by gender. Note that these younger cohorts provide a more accurate estimate of educational attainment than older cohorts would because by high school, a significant percentage of youth will start dropping out of school.

Table 2.1. Educational Attainment by Race and Gender, in Frequencies (Weighted)

Highest Educational Attainment	Black Males	Black Females	White Males	White Females
No degree	.20	.15	.10	.08
GED	.14	.04	.06	.03
HS degree	.31	.24	.24	.18
Some college	.25	.37	.33	.36
College degree	.10	.20	.27	.35
Total	1.0 (n=368)	1.0 (n=439)	1.0 (n=972)	1.0 (n=1139)

As shown in Table 2.1, 20% of African American males obtained no degree and 14% earned a GED; in total, 34% did not obtain a high school diploma. By contrast, 19% of black females did not earn a degree, followed by 16% of white males, and 11% of white females. The largest contrast between black males and females is that such a high proportion of black males obtains their GED (14%) and such a low proportion attains higher education. Twice as many black females as males obtain their college degree.

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One-quarter of African American males attained some college, but only 10% completed a four-year degree. Although black females entered college at approximately the same rate as white females—37%—only 20% of black females finished their degree versus 35% of white females. The patterns of attainment for white males fall in between that of black females and white females.

In terms of the gender gap, the largest gender gap among whites occurs in college completion (8% gap). The gender gaps among blacks are large at almost every step: dropping out/GED instead of completing high school (15% gap), college entry (12% gap), and college degree completion (10% gap).

Family disadvantage

Table 2.2 below presents the prevalence of each family disadvantage factor by race. Seventeen percent of African American youth surveyed had at least one parent with a college degree compared with 35% of white families. The most common education level among African American parents was high school degree (38%) versus some higher education or college degree among white parents (69%). In almost one in five of the African American families, the highest level of parental education was less than high school.

Table 2.2. Distribution of Family Disadvantage Factors by Race (Weighted)

Family Disadvantages:	Blacks (n=807)	Whites (n=2111)
Highest parent education		
< HS	.19	.09
HS Degree	.38	.23
Some college or trade school	.26	.34
College or More	.17	.35
Poverty status		
< Threshold or receiving public assistance	.46	.15
100-150% of threshold	.14	.08
Family structure		
Two biological parents	.27	.63
Other structure	.73	.37
Teen mother (for youth living with bio mother)	.21	.09

The gap between whites and blacks is larger for the other indicators in the family disadvantage index. Forty-six percent of black parents and 15% of white parents surveyed in 1994/1995 reported household income under the poverty threshold or current receipt of public assistance. Sixty percent of black families surveyed reported household income to be within 150% of

the poverty threshold versus 23% of white families. In terms of family structure, 27% of the black

youth surveyed were living with two biological parents in contrast to 63% of white youth. Finally, at

least 21% of black youth were born to a teenage mother compared to 9% of white youth. Note that

this underestimates the prevalence of having had a teenage mother, especially for the black youth;

these figures could only be calculated for youth who were living with their biological mothers who

completed the parent survey.

Comparing family disadvantage scores of black and white youth

Combining the family disadvantage factors into an index with up to 7 points, the family

disadvantage profile of black youth contrasts sharply with that of white youth. The weighted means for

levels of family disadvantage are 3.58 (CI 3.00–4.16) among African American youth versus 1.90 (CI

1.67–2.12) among white youth.

Cross tabulations of family disadvantage by race, Table 2.3, reveal the distributions in greater

detail. The scores of white youth cluster toward the lower ends of family disadvantage, whereas

scores of black youth show a more even distribution across the moderate to high levels of family

disadvantage. The modal score among black youth is 5 (20%) versus 0 or 1 among white youth

(48%). Just 17% of black youth score 0 or 1 on the family disadvantage scale. Moving up the

disadvantage scale, 38% of black youth score at least 5 in disadvantage versus 9% of white youth.

Table 2.3. Distribution of Family Disadvantage Index by Race

Family Disadvantage Index	Black Students: Weighted Proportion (Unweighted Number)	White Students: Weighted Proportion (Unweighted Number)
0	.06 (85)	.24 (536)
1	.11 (140)	.24 (514)
2	.17 (134)	.21 (443)
3	.12 (115)	.13 (260)
4	.16 (123)	.09 (174)
5	.20 (109)	.05 (104)
6	.12 (86)	.03 (68)
7	.06 (15)	.01 (12)
Total	1.0 (807)	1.0 (2111)

Note: Middle-class African Americans were oversampled; the weighting corrects
this to keep the sample representative of the population.

Correlations

For the total sample, a correlation matrix of the family disadvantage indicators reveals modest correlations. Parent's education and poverty status have the highest correlation (r=.41), followed by non-intact family and poverty status (r=.31). All other correlations range from .16 to .22. Among black youth, low parental education shows a stronger correlation with non-intact family structure and poverty than among white youth. For the sample as a whole, the family disadvantage index has a moderate negative correlation with educational attainment, approximately -.30 for high school degree and -.40 for college entry. The correlations vary more by gender among black than white youth. For example, the family disadvantage index and schoolmate poverty show stronger correlations to educational attainment—especially college entry—among black males than females.

Regression Models

Background: Contributions of each family disadvantage indicator

To investigate the unique contribution of each indicator of family disadvantage in predicting educational attainment, each individual indicator is included in one logistic regression model with all the indicators. Consequently, the coefficient for each indicator shows the relationship to educational attainment, net of the other family disadvantage indicators. Tables 2.4 and 2.5 present the results for African American and white youth by gender and educational outcome.

For black males (Table 2.4), non-intact family structure (OR=.50, p<.10) and family poverty (OR=.65, p<.05) most strongly reduce the odds of high school graduation. Non-intact family structure shows a 50% decline in the odds of graduating high school among black males, holding constant the other family disadvantages in the model. The coefficient for low parental education is in a negative direction for black males but does not reach statistical significance, in contrast to the other groups. Looking at the other groups, non-intact family structure also significantly negatively predicts high school graduation for white males (OR=.57, p<.05) but does not reach statistical significance for black or white females (though negative in direction).

Turning to the outcome of college entry (conditional on completing high school or equivalent), low parental education is the most potent indicator for all groups, with odds ratios ranging from .43 to .48. Family poverty also strongly reduces the odds of college entry for all groups except white

females; family poverty shows the strongest negative relationship to college entry among black males (OR=.55, p<.01), followed by black females (OR=.63, p<.01), compared to other groups. (This difference between black males and females is statistically significant.) Non-intact family structure decreases the odds of college entry among white males only (OR=.71, p<.10). Finally, having had a teenage mother does not reach statistical significance in any of the models, once the other family disadvantage factors are controlled.

Table 2.4. Family Disadvantage Factors Predicting Educational Attainment (Logistic Regression)

	Black Males				Black Females			
	High School Degree		College Entry		High School Degree		College Entry	
	Odds		Odds		Odds		Odds	
Independent Variables[1]	Ratios	95% CI	Ratios	95% CI	Ratios	95% CI	Ratios	95% CI
Low parent education (0-3; 0=college degree)	.76	.49, 1.19	.44***	.31, .62	.55***	.39, .78	.48***	.33, .70
Poverty (0-2; 2=below poverty threshold)	.65*	.44, .97	.55**	.36, .83	.64**	.47, .88	.63**	.47, .84
Nonintact family structure (0,1)	.50+	.25, 1.02	.64	.26, 1.55	.63	.31, 1.30	1.14	.61, 2.13
Teenage mother (0,1)	1.54	.82, 2.89	.62	.28, 1.40	.99	.59, 1.64	1.23	.59, 2.56
Constant	7.65		6.28		33.62		9.68	
Observations	368		315		439		398	

[1]These variables are modeled simultaneously.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, +$p < 0.1$

Table 2.5. Family Disadvantage Factors Predicting Educational Attainment (Logistic Regression)

	White Males				White Females			
	High School Degree		College Entry		High School Degree		College Entry	
	Odds		Odds		Odds		Odds	
Independent Variables[1]	Ratios	95% CI	Ratios	95% CI	Ratios	95% CI	Ratios	95% CI
Low parent education (0-3; 0=college degree)	.51***	.41, .63	.46***	.36, .60	.47***	.35, .63	.43***	.36, .52
Poverty (0-2; 2=below poverty threshold)	.73+	.53, 1.01	.74*	.56, .97	.52**	.36, .77	.93	.74, 1.16
Nonintact family structure (0,1)	.57*	.33, .98	.71†	.50, 1.01	.78	.45, 1.37	.78	.49, 1.25
Teenage mother (0,1)	.69	.36, 1.32	.65	.28, 1.48	1.15	.61, 2.16	.70	.38, 1.30
Constant	20.93		6.09		36.98		10.17	
Observations	972		885		1139		1068	

[1]These variables are modeled simultaneously.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, +$p < 0.1$

Looking more closely at family structure

As previously discussed, non-intact family structure is negatively associated with high school degree completion for black and white males and college entry for white males. Since non-intact family structure encompasses a variety of family structures, we do not know which alternative family structures may matter for educational attainment and whether this varies among black males and females. Therefore, I investigated further, examining bivariate models of how different types of family structure predict educational attainment.[66]

The single-mother family structure is the most prevalent family structure type among black families in the sample, at 46%. Compared to having two biological parents, having a single mother strongly reduces the odds of high school graduation and college entry among black males but not black females. The "other" (non-parental) family structure is negatively associated with educational attainment for both black male and females; 9% of black youth in the survey have this family structure. (The "other" family structure type includes all households without any members classified as father or mother. Frequently, this refers to a household consisting of "other non-relative," and nearly as often these households consist of one or two grandparents.) Biological mother with a stepfather, 14% prevalence, lowers the odds of high school completion among black females and college entry among black males. Finally, living with a biological father and stepmother strongly reduces the odds of high school graduation among black males but not females; however, this family type is rare, only 1% among black youth. For black males, almost every family structure besides two biological parents is negatively associated with educational attainment; in contrast, black females only show a negative relationship to having a stepfather for high school graduation and the "other" (non-parental) family structure for both educational outcomes.

Modeling the cumulative family disadvantage index

This section presents the results of logistic regression models of the relationship between the additive family disadvantage index and high school degree completion and college entry. The index sums the four factors of family disadvantage, resulting in a 0–7-point scale of family disadvantage.

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[66]The family structure variables were created by: Harris, Kathleen Mullan. 1999. "The Health Status and Risk Behavior of Adolescents in Immigrant Families." Pp. 286-347 in *Children of Immigrants: Health, Adjustment, and Public Assistance,* edited by D. J. Hernandez. Washington, D.C.: National Academy Press.

(Note that a score of 0 means that: the family is not poor or receiving welfare, the child lives with both biological parents, at least one parent has a college degree, and the child was not born to teenage parents.)

Tables 2.6–2.9 present regression results for bivariate and full models with all control variables for each race-gender group for each educational outcome. For the results displayed in these tables, the family disadvantage index was modeled as three categories of disadvantage: low, 0–1 (the reference group); medium, 2–4; and high, 5–7. Results are presented as odds ratios, as well as predicted probabilities, to help with interpretation. Figures 2.1–2.2 display line graphs of the results of full regression models, showing the predicted probabilities of the educational outcome at each level of family disadvantage (0–7).[67]

In summary, the family disadvantage index shows a strong negative relationship to educational attainment for all groups. Although the race-gender groups exhibit similar patterns in the relationship between family disadvantage and high school graduation, patterns diverge more for college entry. Black males show a more negative relationship between high levels of family disadvantage and college entry compared with black females (and white youth). Although white males and females do not statistically differ in their relationship between cumulative family disadvantage and college entry, the relationship is in a more negative direction for white males than females at higher levels of family disadvantage. The following section discusses the findings in greater detail.

Outcome of high school degree completion (versus dropout out or GED)

Figures 2.1a and b present the predicted probabilities of high school graduation at each level of family disadvantage based on the full regression model with all controls. The race-gender groups show roughly similar negative relationships between cumulative family disadvantage and high school

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[67]Note: for the outcome of high school graduation, 100% of African American females with no family disadvantage (score of 0) graduated from high school, which prevented the model from computing for that group. Therefore, for the graphs of predicted probabilities showing each level of family disadvantage, I had to adjust the individual grand sample weight for black females for the outcome of high school graduation to change the value of obtaining a high school degree to .9999 instead of 1 and introduce a counterfactual for each person of not obtaining the degree, with a weight assigned of .0001. This did not noticeably change any results or standard errors, but it did then allow the model to compute for the group of black females with 0 family disadvantages. I did not have to make this adjustment for the results in the regression tables because categories of 0 and 1 family disadvantage were aggregated together.

degree completion. Gender patterns are most similar among white youth, both in the slope of the lines and the predicted probabilities of graduating.

Figure 2.1. Predicted probabilities for high school graduation (vs. dropout or GED)

a. Black Males and Females	b. White Males and Females
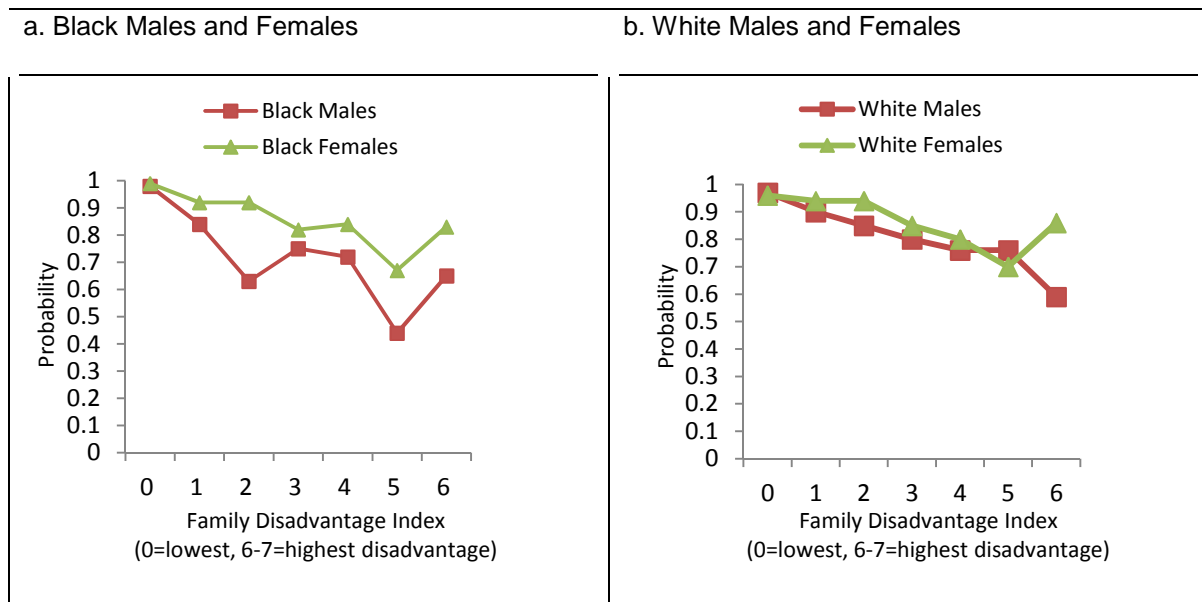
*Based on regression model with full control variables.

Tables 2.6–2.7 present the detailed regression results. Bivariate models show a fairly similar relationship between family disadvantage and high school degree completion across the race-gender groups, as reflected by the odds ratios. Compared to the lowest levels of disadvantage (0–1), having a family disadvantage score in the 2–4 range is associated with a 78% to 82% decline in the odds of completing high school for all groups while having high family disadvantage score (5–7) is associated with a 91% to 95% decline in the odds of completing high school for all groups. Among black males, this translates into going from .92 predicted probability of graduating high school at level 0–1 family disadvantage to .45 at level 5–7. Black females start out higher, at .98 and drop to .67.[68] In absolute numbers, the predicted probability of graduating declines much more for black males than females as family disadvantage increases; however, mathematically black females show a relative decline as great as black males, in part, because they start with such high probabilities of graduating when family disadvantage is low.

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[68]Note that at 0 family disadvantages, the predicted probability of graduating among black males is almost the same as that of black females: .99 vs. 100. But with an increase to 1 family disadvantage, the probability among black males falls to .88, while that of black females remains high at .96.

In the full models with all controls (Table 2.6), black males and females continue to exhibit a similar relationship between family disadvantage and high school completion. There is no statistical difference between them in these categorical models of family disadvantage (or for a quantitative, 0–7, measure of family disadvantage). Likewise, white males and females do not demonstrate any statistically significant differences in the relationship between cumulative family disadvantage and high school graduation. Nor do black and white males. Now, translating the full regression models into predicted probabilities: Among black males, the probability of completing high school drops from .90 at level 0–1 disadvantage to .53 at level 5–7. Black and white females start at .95 and decrease to .75 and .79, respectively. Values for white males lie just below those of black females but still much higher than for black males.

Outcome of college entry (conditional on completing high school)

Figure 2.2 presents the predicted probabilities of college entry, conditional on completing high school, at each level of family disadvantage based on the full regression model with all controls. For all groups, cumulative family disadvantage is negatively associated with college entry. Compared to the patterns for high school completion, Figure 2.2 reveals more gender divergence in the relationship between family disadvantage and college entry, in particular among blacks. There is a larger gender gap among blacks to begin with, and as family disadvantage becomes high, the predicted probability of entering college increasingly diverges among black males and females. Black males show the most negative relationship between family disadvantage and college entry; their predicted probability of college entry declines sharply as cumulative disadvantage increases, dropping even more precipitously after the family disadvantage score exceeds 3.

Tables 2.8–2.9 present detailed regression results for the bivariate and full models with all controls. In the bivariate models for college entry, comparing medium family disadvantage (2–4) to low family disadvantage (0–1), black males show 72% lower odds of entering college (OR=.28, p<.01); when disadvantage becomes high (5–7), their odds decline by 96% (OR=.04, p<.001). For black females, their odds decline by 64% (OR=.36, p<.05) and 88% (OR=.12, p<.001), respectively. Translating these results into predicted probabilities, at low family disadvantage (0–1), black males have a.78 probability of entering college while black females have a .88 probability; with high family

disadvantages (5–7), the probability of entering college decreases to .12 among black males and .46 among black females.

Figure 2.2. Predicted probabilities for college entry (conditional on completing high school)
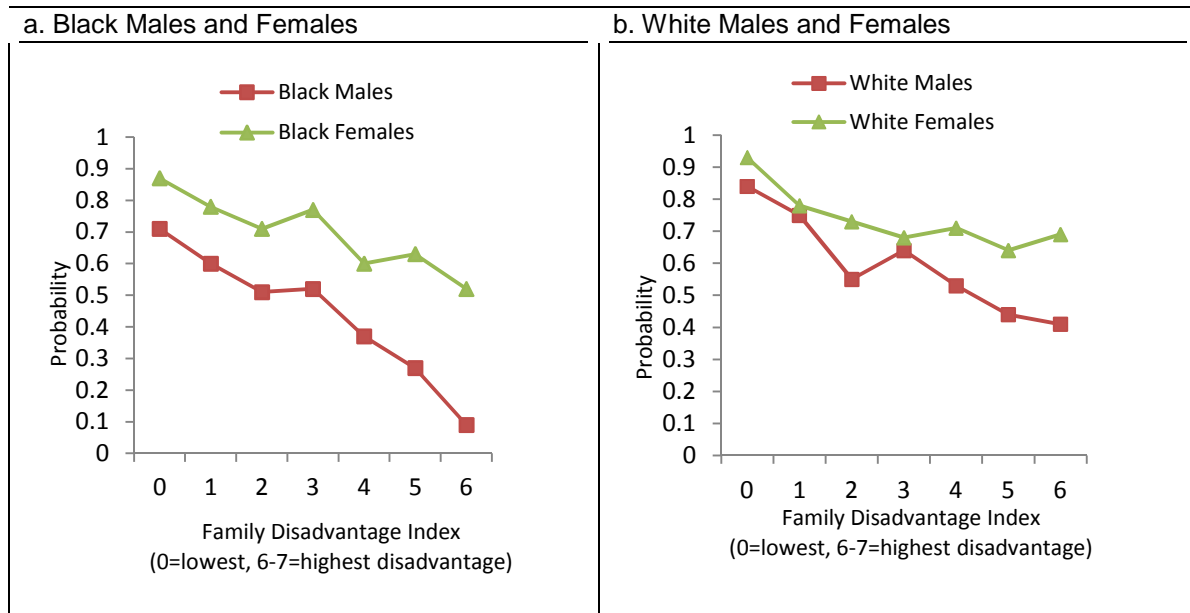
Based on regression model with full control variables.

Compared to black youth, white males and females show less gender divergence in the relation of family disadvantage to college entry; nonetheless, at high levels of disadvantage, white males exhibit a steeper decline in the odds of college entry than do white females. Among white males, the predicted probability of entering college declines from .83 to .28 as family disadvantage increases from low (0–1) to high (5–7); white females show a less precipitous drop from .88 to .53. Note that among white females, in contrast to other groups, the steepest drop in probability of entering college occurs when family disadvantage increases from 0 to 1. [69]

The full models, with individual, family, and school control variables lessen the strength of the relationship between the family disadvantage index and educational attainment for all groups, though it remains robust.[70] With all control variables in the models, black males and females show similar

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[69] As family disadvantage increases from 0 to 1, the predicted probability of entering college drops from.93 to .78 among white females (vs. .84 to .75 for white males). The relative decline in predicted probability after 1 is more muted for white females than for white males and other groups.

[70] Specifically among black males from *advantaged* families (0–1), adding control variables (specifically PVT and schoolmate poverty) also substantially lessens their predicted probability of entering college (.78 vs. .64). This

52–58% decline in the odds of college entry when family disadvantage levels go from low to medium, although the odds ratio was not significant for black females. Gender patterns diverge at high levels of disadvantage. Compared to low levels of disadvantage (0–1), having high family disadvantage (5–7) is associated with 90% lower odds of entering college (OR=.10, p<.01) among black males and 71% lower odds among black females (OR=.29, p<.01). Translating this into predicted probabilities: At low family disadvantage (0–1), black males have a .64 probability of entering college while black females have a .80 probability; with high family disadvantage (5–7), the probability of entering college drops to .21 among black males and .58 among black females in the full model. This relationship statistically differs between black males and females at a categorical threshold of 5–7 (vs. <5); this gender gap intensifies as family disadvantage increases to 6–7 (vs. <6).[71]

Turning our attention to white youth (Table 2.9, full model), comparing low to high family disadvantage, white males show an 83% decline (OR=.17, p<.001) in the odds of entering college while white females show a 68% decline (OR=.32, p<.01). However, these differences do not reach statistical significance. Because white females with 0 family disadvantages start with such high rates of college entry (.93), they have relatively farther to fall when they have disadvantage.

Comparing black and white males, they statistically differ in the relationship between family disadvantage and college entry only at high levels of concentrated family disadvantage (threshold of 6–7 vs. <6), where the relationship appears much more negative for black males.[72] In the final model, the patterns for black females most closely resemble those of white females.

Compared to all other groups, black males have the lowest predicted probability of entering college at each level of family disadvantage as shown in tables in the full models (Tables 2.8–2.9). White youth and black females from the more advantaged families (score of 0–1) start from a much higher predicted probability of entering college than black males: .85 for white females, .80 for black females, and .79 for white males as compared with .64 for black males. Yet black males still fall the farthest at the highest category of family disadvantage (5–7): .21 predicted probability of entering

suggests that among black males from more advantaged families, higher verbal skills (PVT) and non-poor schoolmates could be particularly important protective factors related to probability of college entry.

[71]The exponentiated coefficients for the interaction terms for black males equal: .34, p=.08 comparing 5 vs. <5; .17, p=.05 comparing 6 vs. <6; and .78, p<.10 for a quantitative measure of family disadvantage (0–7).

[72] The exponentiated coefficient for the interaction term for black male is .19, p=.10.

college among black males versus .43 for white males, .58 for black females, and .67 for white females. At the highest family disadvantage score, 6–7, the predicted probability of college entry among black males declines further to .09.

In terms of the control variables in the full models, for all race-gender groups, PVT is positively associated with college entry, given high school completion. The percentage of schoolmates with a college educated parent remains significant among white youth, especially white females, after accounting for the percentage of schoolmates below the poverty threshold. Among black males, each of these schoolmate family background factors is strongly associated with college entry; however, they lose significance when they are both included in the model because they are particularly highly correlated among black youth (corr=.74). Neither schoolmate factor is significant among black females, even when modeled separately.

Table 2.6. Family Disadvantage Index Predicting High School Degree Completion (Versus Dropping Out or GED)—African American Males and Females (Logistic Regression Models)

	Black Males						Black Females					
	Bivariate Model			Full Model with all Controls			Bivariate Model			Full Model with all Controls		
Independent Variables	Odds Ratios	95% CI	Predicted Probability	Odds Ratios	95% CI	Predicted Probability	Odds Ratios	95% CI	Predicted Probability	Odds Ratios	95% CI	Predicted Probability
Family disadvantage index : 0-1 (Reference)			.92			.90			.98			.95
2-4	.22*	.07, .76	.71	.26*	.07, .93	.69	.18*	.04, .77	.88	.33	.07, 1.64	.87
5-7	.09***	.03, .29	.45	.13**	.03, .53	.53	.05***	.01, .22	.67	.14**	.03, .64	.75
Peabody Vocabulary Test score				1.02	.98, 1.05					1.04	1.00, 1.08	
Immigrant parents				.49	.11, 2.30					.91	.14, 5.83	
Parent binge drinking				1.21	.70, 2.08					.27	.14, .56	
% schoolmates with college-educated parent				1.06	.06, 17.98					7.13	.24, 210.86	
% schoomates below poverty threshold				.29	.02, 4.84					1.02	.08, 12.36	
Constant	10.89			3.15			42.99			.51		
Observations	368			368			439			439		

***p < 0.001, **p < 0.01, *p < 0.05, +p < 0.1

Table 2.7. Family Disadvantage Index Predicting High School Degree Completion (Versus Dropping Out or GED)—White Males and Females (Logistic Regression Models)

Independent Variables	White Males						White Females					
	Bivariate Model			Full Model with all Controls			Bivariate Model			Full Model with all Controls		
	Odds Ratios	95% CI	Predicted Probability	Odds Ratios	95% CI	Predicted Probability	Odds Ratios	95% CI	Predicted Probability	Odds Ratios	95% CI	Predicted Probability
Family disadvantage index : 0-1 (Reference)			.95			.93			.97			.95
2-4	.21***	.13, .33	.78	.32***	.19, .54	.81	.21**	.08, .58	.86	.38†	.13, 1.11	.88
5-7	.09***	.04, .18	.61	.17***	.08, .37	.71	.06***	.02, .19	.64	.17**	.05, .58	.79
Peabody Vocabulary Test score				1.06***	1.04, 1.08					1.08***	1.05, 1.11	
Immigrant parents				1.10	.38, 3.19					2.19	.54, 8.85	
Parent binge drinking				.80	.43, 1.48					1.58	.80, 3.12	
% schoolmates with college-educated parent				5.40†	.80, 36.55					8.77†	.93, 83.04	
% schoomates below poverty threshold				3.12	.36, 26.76					.51	.09, 2.76	
Constant	17.56			.02			28.58			.01		
Observations	972			972			1139			1139		

***p < 0.001, **p < 0.01, *p < 0.05, +p < 0.1

Table 2.8. Family Disadvantage Index Predicting College Entry (Conditional on Completing High School)—African American Males and Females (Logistic Regression Models)

Independent Variables	Black Males						Black Females					
	Bivariate Model			Full Model with all Controls			Bivariate Model			Full Model with all Controls		
	Odds Ratios	95% CI	Predicted Probability	Odds Ratios	95% CI	Predicted Probability	Odds Ratios	95% CI	Predicted Probability	Odds Ratios	95% CI	Predicted Probability
Family disadvantage index : 0-1 (Reference)			.78			.64			.88			.80
2-4	.28**	.13, .61	.50	.42*	.19, .92	.47	.36*	.15, .86	.72	.48	.15, 1.49	.68
5-7	.04***	.01, .16	.12	.10**	.03, .42	.21	.12***	.05, .29	.46	.29**	.12, .72	.58
Peabody Vocabulary Test score				1.04*	1.00, 1.07					1.09***	1.04, 1.13	
Immigrant parents				1.42	.28, 7.08					.84	.25, 2.81	
Parent binge drinking				.41	.12, 1.35					.63	.18, 2.17	
% schoolmates with college-educated parent				1.60	.14, 18.13					1.36	.13, 14.49	
% schoomates below poverty threshold				.07	.00, 2.11					.32	.02, 4.61	
Constant	3.57			.20			7.14			.00		
Observations	315			315			398			398		

***p < 0.001, **p < 0.01, *p < 0.05, +p < 0.1

Table 2.9. Family Disadvantage Index Predicting College Entry (Conditional on Completing High School)—White Males and Females (Logistic Regression Models)

| | White Males | | | | | | White Females | | | | | |
| | Bivariate Model | | | Full Model with all Controls | | | Bivariate Model | | | Full Model with all Controls | | |
Independent Variables	OR	95% CI	Predicted Probability	OR	95% CI	Predicted Probability	OR	95% CI	Predicted Probability	OR	95% CI	Predicted Probability
Family disadvantage index : 0-1 (Reference)			.83			.79			.88			.85
2-4	.22***	.14, .33	.52	.31***	.20, .50	.57	.26***	.17, .40	.67	.40***	.26, .63	.71
5-7	.08***	.04, .15	.28	.17***	.08, .33	.43	.15***	.08, .28	.53	.32**	.15, .69	.67
Peabody Vocabulary Test score				1.04***	1.02, 1.07					1.05***	1.03, 1.07	
Immigrant parents				.45†	.19, 1.07					2.47†	.88, 6.95	
Parent binge drinking				1.02	.53, 1.97					.94	.59, 1.50	
% schoolmates with college-educated parent				5.56†	.86, 35.95					8.37**	1.85, 37.86	
% schoomates below poverty threshold				.29	.03, 2.67					.47	.09, 2.50	
Constant	5.03			.03			7.63			.03		
Observations	885			885			1068			1068		

***p < 0.001, **p < 0.01, *p < 0.05, +p < 0.1

Discussion

Prior research has shown that disadvantages or risk factors often cluster in children's lives and that multiple risk factors are associated with worse developmental outcomes. Taking a life course and ecological framework, this study demonstrates how the intersection of multiple status configurations in early adolescence—race, gender, and family disadvantage—is associated with college entry. Cumulative family disadvantage in early adolescence, measured by a risk index ranging from 0–7, is negatively associated with high school degree completion and college entry among all race-gender groups studied.

My study highlights important variation by race and gender in educational attainment among disadvantaged youth. High levels of family disadvantage are more detrimental to college entry among black males than black females and white youth. Among black males in the 7th–8th grade, the predicted probability of entering college steadily declines toward 0 as family disadvantage increases to high levels. In the model with full controls, the predicted probability that black males will enter college falls from .71 at 0 disadvantages, to .37 with a score of 4, and .09 with a score of 6–7.

Nearly 40% of African American youth studied have high cumulative disadvantage (score of 5–7), compared with 9% of white youth. Thus, at a population level, cumulative family disadvantage has a disproportionately large effect on African Americans. Gender variation in the effects of family disadvantage on college entry has important population-level implications among African American males in particular. A similar trend, though less in magnitude, can be seen among the white youth. Compared to white females, white males also show a widening gap in predicted probability of entering college when cumulative family disadvantage is high (5 or more).

The gender gap in higher education has become a national policy concern given the steep decline in well-paying jobs for individuals with a high school education or less. This gender gap is particularly stark for African American males from highly disadvantaged families. On the other hand, this study finds that regardless of the level of family disadvantage, most black and white females who graduate from high school at least start college. In fact, black females have higher probability of entering college than do white males at every level of family disadvantage. With the highest levels of cumulative family disadvantage (5–7), black females have a .58 predicted probability of entering

college while white males have a .43 probability. Nonetheless, white males still have higher rates of completing college than do black females, .27 vs. .20 for this national sample.

My study also reveals that gender patterns differ depending on the educational outcome. Cumulative family disadvantage strongly negatively predicts high school graduation for all race-gender groups; however, this relationship does not substantially differ by gender.[73] Yet this contrasts with the results for college entry. College requires considerably more academic and family resources than high school graduation. Middle school students have to understand how higher education will concretely benefit them and they have to develop the academic skills, knowledge, and self-efficacy to be able to pursue an academic path and persevere. To do this, they also need role models and psychological and material support. These are steep requirements that are more difficult in disadvantaged circumstances. In 2009, less than one-third of Americans between ages 25 and 34 had attained at least a bachelor's degree (U.S. Census Bureau 2012), in spite of the long-term trend of increasing returns to a college education and declining wages among high school graduates.

A study by Farkas (2011) using NELS data shows that by middle school, the math and reading gaps between students from the top and bottom SES quintiles exceeds a standard deviation, along with substantial gaps in learning behaviors. In middle school through high school, youth adjust their educational expectations based on their academic performance. Academic performance plays a significant role in class-based gaps in educational expectations and attainment. The author concludes that curriculum track enrollment, a sense of personal control, and educational expectations are also important mediating factors between social class and race and educational attainment (Farkas 2011).

Rates of college degree attainment have been increasing among both white and black youth, with greater increases among black males than white males between 2000 and 2007 (McDaniel et al. 2011). Nonetheless, the gender gap in higher education has continued to grow in this period (McDaniel et al. 2011). Coming from a historically disadvantaged position, African American males have the largest educational gap to overcome. For African American males, race, gender, and cumulative family disadvantage intersect to impede attainment of higher education.

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[73] Nonetheless, note that among blacks, there is virtually no gender gap in predicted probability of graduation when the family disadvantage score is 0: .99 among the black females and .98 among black males in the full models; by contrast, there is a substantial gap in graduation rates when *any* disadvantages are present.

Study Limitations

This study has several limitations that warrant consideration. As an observational study, causation cannot be determined; however, the study has the strength of longitudinal data and controlling for important potential confounding factors at individual, family, and school levels. Modest sample sizes, especially among African Americans, constrain statistical power to test for gender and race interactions. Nonetheless, significant race and gender differences were identified. These students experienced their middle school years in the mid-1990s. Race and gender patterns may vary for cohorts in different time periods and social conditions.

Another consideration is that this study focuses on family disadvantage in early adolescence, 7th–8th grade, an important time of educational transition. Data are not available to ascertain prior and subsequent exposure to family disadvantage or the duration of disadvantage over the life course. Some factors in the family disadvantage index are relatively stable, such as having had a teenage parent and parental education; however, family income, welfare status, and family structure can be dynamic over time. Nonetheless, early adolescence is a period when youth start to adjust their life expectations based on their circumstances and perceived opportunities. Therefore, family disadvantage at that stage of the life course has particular salience for plans for educational and career plans, particularly in terms of higher education.

Another potential concern is that the cumulative risk index may understate disadvantage among African Americans. Although the index captures the same factors for each racial group at an important period in the life course, racial variation in the duration and frequency of family disadvantage could mean that the average lifetime "dose" of disadvantage may be somewhat stronger for African American than white youth. In addition, African American families typically have much less wealth accumulation than white families, which is not accounted for in the index. Although these factors would likely understate disadvantage for African Americans, they would not affect gender comparisons within race. At the higher end of the family disadvantage index—with the clustering of many disadvantages—the disadvantages are more likely to be longer in duration for all groups.

Finally, the cumulative disadvantage index does not delineate possible race-gender variation in the effects or weight of individual factors of disadvantage. However, separate analyses revealed the potency of poverty and parents' education for all groups and non-intact family structure for males in particular. The cumulative disadvantage index allows for investigation of the effects of having multiple family disadvantages simultaneously and provides a convenient summary measure to facilitate comparisons across groups.

Significance

Taking a life-course framework, this longitudinal study shows the importance of family disadvantages in early to middle adolescence in relation to educational attainment in early adulthood. It adds to the child development literature to increase understanding of how cumulative family disadvantages in early adolescence relate to educational attainment, highlighting the importance of considering status configurations such as race and gender. This study also adds to our understanding of gender and race gaps in educational attainment. This research provides groundwork for future inquiry that can further examine how specific aspects of family disadvantage individually, cumulatively, and interactively affect educational attainment, taking into account race and gender statuses. Finally, this study highlights the need for more research on factors that promote academic achievement and attainment among boys from disadvantaged family backgrounds, especially African American boys.

CHAPTER 3. SCHOOLMATE DISADVANTAGE AND THE EDUCATIONAL ATTAINMENT OF AFRICAN AMERICAN MALES

Introduction

Over the past several decades, an increasing number of studies have focused on the black-white achievement gap; however, we know much less about how gender, race, and class intersect to influence educational outcomes. In spite of progress in reducing the race achievement gap, African American males have lower educational attainment than other groups. Research using the National Longitudinal Study of Youth (NLSY) found that recent cohorts of African American males have lower academic performance and higher rates of dropping out of high school than other groups, including African American females, whites, and Hispanics (Hill, Holzer, and Chen 2009). Moreover, the gender gap in educational attainment is highest among African Americans. A 2012 study from the Schott Foundation for Public Education found that only 52% of black males entering high school in 2006 graduated in 2010.

Taking a life-course (Elder 1985) and ecological approach (Bronfenbrenner 1979), this chapter uses the National Longitudinal Study of Adolescent Health (Add Health) to investigate how the level of family disadvantage of schoolmates in grades 7–8 (school-level index based on parents' education, poverty status, family structure, and teenage parenting) relates to the educational attainment of African American males in early adulthood. (Figure 3.1.) I make strategic comparisons with black females and white youth. This study focuses on early to middle adolescence, ages 12 to 15, because this period of adolescence is a critical time of transition both developmentally and academically. The onset of adolescence and transition to middle school is characterized by a growing focus on peer relationships, and time with peers increases. By age 16, many at-risk youth will have already dropped out of high school.

Figure 3.1. Conceptual model.
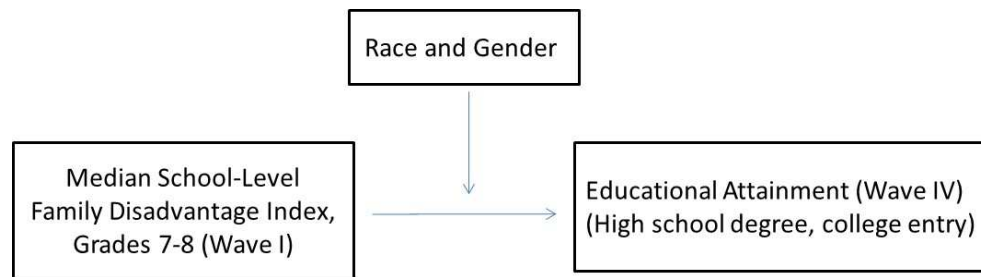
Literature Review

Role of School Composition in Educational Outcomes

Since the influential 1966 Coleman report *Equality of Educational Opportunity*, many studies have examined the effects of schoolmates' family backgrounds on individual students' educational outcomes. The Coleman report established that the socioeconomic composition of the school is more strongly related to student achievement than any other school factor, after accounting for student's own background. Many studies have since confirmed Coleman's findings that high-poverty schools and neighborhoods are associated with worse educational outcomes (Crane 1991; Harding 2003; South, Baumer, and Lutz 2003) while socioeconomically advantaged schools have a positive effect (Brooks-Gun et al. 1993; Entwisle, Alexander, and Olson 1994). For example, in a longitudinal study of Baltimore children, Entwisle, Alexander, and Olson (2005) show that the socioeconomic level of schools is related to average test scores and percentage of children held back. In schools where 90% of children received subsidized meals, the majority of students had been held back or assigned special education by the 5th grade. Using Add Health, Choi and colleagues (2008) found that the percentage of coursemates with college-educated parents predicted likelihood of enrollment in a four-year college, after accounting for individual family background, achievement, and course placement. Recent studies using experimental and quasi-experimental methods to study the effect of class composition on academic outcomes found effect sizes similar to some of the estimates of teacher effects (Legewie and DiPrete 2012; Imberman, Kugler, and Sacerdote 2009; Ammermueller and Pischke 2009).

Nationally, over 60% of African American and Latino students attend schools where a majority of the students are poor as compared with 18% of white students who attend high-poverty

schools (Orfield and Lee 2005). The black-white difference in the mean socioeconomic composition of schools has generally increased since the 1970s, from an 18% gap in 1972 to a 26% gap in 2004. For cohorts of high school seniors over the past 30 years (1972–2004), improved socioeconomic status of black families was a large explanatory factor in the convergence of black-white math test scores. In spite of large gains in the average educational attainment and occupational status among African Americans parents, black students are still likely to attend high minority and low socioeconomic states (SES) schools (Berends, Lucas, and Penaloza 2008). A national study of 1st graders found that school factors increased the black-white achievement gaps, whereas non-school factors primarily drove achievement gaps related to family socioeconomic status. This explains why the black-white achievement gap mostly increases during the school year while the socioeconomic class gaps mostly increase during the summer (Condron 2009).

Attending schools with high concentrations of minorities is also associated with lower educational attainment and academic performance (Goldsmith 2009). For example, using NELS, Goldsmith (2009) reported that concentration of black and Latino students in schools, but not in zip code areas, is associated with lower academic attainment (high school graduation and bachelor's degree). Although racial composition matters, several studies have found that class composition of schoolmates explains more of the race gap in achievement than does racial/ethnic segregation (Coleman et al. 1966; Logan, Minca, and Adar 2012). Logan and colleagues (2012) used national standardized test results from public elementary, middle, and high schools and school district census data to investigate disparities in school performance between schools attended by whites and Asians versus blacks, Hispanics, and Native Americans. They found that most of the race/ethnic disparities in test results are linked to school poverty levels rather than racial composition of the schools. Minorities typically attend low-performing schools (35th–40th percentile within their state), whereas white and Asian children typically attend above average performing schools (60th percentile). They also found family background in the school districts to be another important factor predicting students' performance, in particular the adults' educational levels and, to a much lesser extent, family structure.

Debate exists regarding the reasons for the association between the socioeconomic level of schools and educational outcomes, net of individual family background. Possible mechanisms

include: peer culture and socialization by peers, including academic orientation and problem behaviors (e.g., Crane 1991);[74] quality of curriculum and instruction; teacher and parental expectations;[75] level of parents' involvement at school; and, broadly, how the socioeconomic status of schoolmates may affect the learning environment, from classroom dynamics to the social and academic climate in school. For example, what are the norms among the students about the appropriate level of effort for academic achievement, what are their educational expectations, and what is the level of efficacy of schoolmates in working toward long-term academic goals such as higher education? A longitudinal study of Texas students in the 5th to 8th grade found that the lower average academic performance of poor schoolmates explained the association between school poverty rates and individual test scores, controlling for prior performance (Jargowsky and Komi 2009). They also found school effects to be larger for poor than non-poor children.

Though results have not always been consistent, longitudinal, experimental, and studies with extensive statistical controls have documented school and neighborhood effects on a variety of adolescent outcomes, in particular test scores and delinquency. Few studies have tried to compare the relative contributions of school and neighborhood context on educational outcomes. A recent study by Jargowsky and Komi (2009) using a statewide longitudinal panel dataset with 5th- to 8th-grade Texas students found that school variables explain more of the variance in math and reading test scores than neighborhood factors. Although both school and neighborhood mattered, including neighborhood factors did not change the robust effect of school factors, whereas omitting school factors significantly overstated (and biased) the neighborhood effect.[76] A longitudinal study by Cook and colleagues (2002) in Prince George's County, Maryland, found that the quality of the contextual environments (schools, neighborhoods, families, and friendship groups) predicted the most positive developmental change for the African American youth as compared with white or Asian youth.

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[74]Processes of peer effects likely vary by population subgroup and outcome. Some research has found that gender differences in social and behavioral problems may be stronger for boys living in higher-stress circumstances such as low-income and single-parent families (Kupersmidt et al. 1995).

[75] Research has found that teachers' expectations are influenced by students' social class and ethnicity, with disadvantaged and minority youth often expected to perform more poorly (Becker and Luthar 2010, p. 202). Teachers are more likely to lower expectations for African American students, especially boys, compared with other students (Becker and Luthar 2010, citing Goodenow 1993; Murdock 1996, 1999).

[76]This study used the census tract of the schools to measure the neighborhoods of the elementary and middle school students in the study. These grades draw students from closer surrounding areas than do high schools.

Schools particularly impacted academic performance while neighborhoods influenced school attendance and participation in conventional social activities. They argue that social contexts operated as risk and protective factors.[77]

Variation Related to Gender, Race, and Class

In spite of considerable research on school effects, we lack understanding about how patterns and processes may be conditional on gender, or more specifically, by race/ethnicity and gender as well as class. A longitudinal study of first graders in Baltimore, Entwisle and colleagues (2007) found a gender gap in early reading skills only among socioeconomically disadvantaged children, with boys behind the girls. This gap was explained by the higher retention rate of disadvantaged boys related to teachers' lower rating of classroom behavior and reading skills and parents' lower expectations for boys' school performance.

In certain contexts, gender norms may also negatively influence educational achievement among disadvantaged males. Recent quasi-experimental research among 5th graders in Berlin found that boys' performance in school is more sensitive than girls to peer socioeconomic composition of the school (Legewie and DiPrete 2012). Many ethnographic studies have found that in more socioeconomically disadvantaged schools, the male peer culture can foster norms that discourage academic achievement. For example, recent ethnographic research by Edward Morris (2012) at two low-income high schools—one rural and mostly white, the other urban and mostly African American— illustrate how notions of masculinity relate to academic performance and the gender gap. He found that the boys tended to embrace masculine identities that were counter to educational achievement; they sought respect by showing less interest in school and focusing instead on sports, fighting, physical labor, or resisting school authority. Although the girls tended to view working hard at school as empowering and a means toward independence, the boys often perceived school work as feminine and devalued working hard at school. Consistent with this research, a study of a nationally representative cohort of 8th graders in 1988 found that girls' higher level of effort and achievement

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[77] The study period was 19 months and the developmental success index combined academic, mental health, and social outcomes. Each context modestly independently contributed to developmental outcomes over the study period, with large additive contributions of the four contexts. Note that Prince George's County is a racially and economically diverse area, but it does not have census tracts with poverty rates over 30%.

(time spent on homework and grades), as well as boys' behavioral and disciplinary problems, explained most of the gender gap in college entry (Jacob 2002).

Gender norms may vary depending on race/ethnicity, class, and local context. Many studies have found that African American students value education at least as much as their white peers of similar socioeconomic and family backgrounds (Mickelson 1990; Ainsworth-Darnell and Downey 1998; Spencer et al. 2001.)[78] However, some scholars have argued that norms and expectations surrounding masculinity can intersect with race/ethnicity, class, and neighborhood and school contexts in ways that interfere with education (Anderson 1999; Thomas and Stevenson 2009; hooks 2004; Davis 2001,2003; Noguera 2003; Carter 2005). Black males living in dangerous urban environments may sometimes engage in tougher masculine behavior as a coping strategy to negotiate race-related stress, protect their personal safety, and gain respect from peers (e.g., Thomas and Stevenson 2009; Noguera 2003). This behavior can be counterproductive in a school environment.

Individuals employ various strategies of action depending on the context and their interpretation of it (e.g., see Small, Harding, and Lamont 2010). Culture is heterogeneous and dynamic within groups, and even within individuals. Small, Harding, and Lamont (2010) argue that poor neighborhoods tend to be particularly culturally heterogeneous; they have a broader range of lifestyles, including typical middle-class and alternative norms, offering competing cultural models.[79] Ann Swidler (1986) notes that group cultural differences may matter for differences in group achievement in the sense that culture provides a toolkit of skills, styles, habits, and know-how for constructing strategies of action.

The neighborhood effects literature has bearing on potential gender and race variation in school effects. A few studies have found gender and race differences in the effects of having disadvantaged neighbors on educational outcomes. For example, a recent study in a large

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[78] Once family socioeconomic status and background characteristics are controlled, black youth attain the same or higher levels of education than whites (Blau 2003; Crowder and South 2010). Because black children are much more likely than white children to grow up in disadvantaged neighborhoods, controlling for neighborhood as well as family socioeconomic status further increases blacks' likelihood of completing high school as compared with whites (Crowder and South 2010).

[79] Also see Harding 2011.

Midwestern school district found that the proportion of female-headed households in a neighborhood is negatively associated with educational achievement for black males but not females, after accounting for other community and individual risk factors (Madyun and Lee 2010). Crowder and South (2003) found the risk of dropping out to be similar for African American male and female adolescents in socioeconomically disadvantaged neighborhoods, but in the most highly disadvantaged neighborhoods, black males were twice as likely to drop out as black females.[80] Recent evaluations of the Moving to Opportunity experimental demonstration have shown how the same neighborhoods and schools may be experienced differently according to gender, leading to different risk factors and worse outcomes among low-income minority boys (Kling, Ludwig, and Katz 2005; Clampet-Lundquist et al. 2006).

There is growing awareness among researchers that combinations of risk and protective factors at multiple levels (individual, family, peer group, school, and neighborhood) influence outcomes and that these effects may play out differently for different population subgroups (Leventhal and Brooks-Gunn 2000; Rutter 1987; Chung and Steinberg 2006). When there is variation by gender, dimensions of neighborhood socioeconomic composition (e.g., presence of white-collar workers, percentage of professional or managerial workers, index of socioeconomic disadvantage) appears to show a stronger relationship to educational outcomes for black males than females (Ensminger et al. 1996; Crane 1991; Entwisle, Alexander, and Olson 1994; Crowder and South 2003). More research is needed on school contextual effects for different groups, in particular regarding educational attainment.

<center>**Research Questions and Hypotheses**</center>

This chapter explores the relationship between concentration of schoolmate disadvantage (median school-level of family disadvantage) and educational attainment among African American males in the 7th to 8th grade. An additive index of schoolmate disadvantage includes low parental education, poverty status, non-intact family structure, and being born to a teenage mother. How do

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[80] Crowder and South measured neighborhood disadvantage using an average additive scale of neighborhood poverty rate, percent of families receiving public assistance, male joblessness, percent of families without high incomes, percent of adults with less than a college education, and the percent of adults not employed in professional or managerial occupations.

<center>74</center>

these types of cumulative disadvantages relate to high school completion and college entry among black males?[81]

This study makes strategic comparisons with black females and white youth to explore gender and race differences in the relationship of schoolmate disadvantage to educational attainment. Based on the larger gender gap among African Americans than other groups, I hypothesize that concentrated school-level family disadvantage will show a more negative relationship to educational attainment for black males than females. In general, boys and girls experience differences in their social environment and are treated differently. Concentrated schoolmate disadvantage may differently affect the social and academic climate for black males and females for many reasons.

First, black males and females can experience different forms of prejudice and discrimination, which may lead to different expectations and treatment related to academics and school behavior. Some of these gender differences may be exacerbated for low-income African Americans. Lower-income black males may face particularly low expectations and discrimination by teachers and others due to their combined race and class. Some research suggests that different educational expectations of black males and females have been internalized among African American youth, particularly among low-income African Americans (Wood, Kaplan, and McLoyd 2007).

Having a high concentration of disadvantaged boys may also foster a less academic male peer culture, particularly in lower quality schools—which African Americans are more likely to attend. Highly disadvantaged school environments may also increase the negative impact of problem behavior among male schoolmates.

Finally, there may also be interaction between disadvantaged school and home environments, with different role models, expectations, and treatment for African American boys than girls. Black girls may benefit from the support and same-sex role model provided by their mother and female relatives, whereas black boys often lack the father role models in their own families and in

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[81] In the 1970s psychiatrist Michael Rutter argued for the importance of cumulative risk in child development, demonstrating that the total number of risk factors in a child's background was more important than any particular risk factor in influencing psychiatric disorders. This has been widely replicated in developmental psychology and for a range of developmental outcomes (Evans, Li, and Whipple 2013). Children living in poverty accumulate multiple environmental risks, which can have additively negative effects (Evans 2004).

their peers' families at school. In addition, one study found that compared to other racial/ethnic groups, African American parents give boys relatively more freedom and girls less freedom (Bulcroft, Carmody, and Bulcroft 1996). This could have negative educational consequences in school environments with concentrated schoolmate disadvantage.[82]

Methods

Data and Measures

This study uses data from Waves I and IV of the National Longitudinal Study of Adolescent Health (Add Health), a representative longitudinal survey of U.S. adolescents.[83] The primary sampling unit for Add Health was U.S. high schools, with the sampling frame derived from the Quality Education Database.[84] A stratified sample of 80 high schools (with at least 30 students) was selected with probability proportional to size. Schools were stratified by region, urbanicity, school type, school size, and ethnic composition to be representative of the United States. The study also recruited one middle school (or feeder school) for each high school. Overall, 79% of the contacted schools agreed to participate in the study, yielding a sample of 80 high schools and 52 middle schools.[85]

In the first wave of Add Health, an in-school questionnaire was administered to all 7th–12th grade students attending the sampled schools on a particular day during the 1994–1995 school year [n=90,118]. From these same schools, a representative sample of adolescents was selected using a gender- and grade-stratified design to complete extensive follow-up questionnaires at home

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[82] Among white youth, one might expect that schoolmate disadvantage would show a more negative relationship to college entry for white males than females given the larger hurdle males currently face in going to college. It is unclear what to expect for high school graduation. Gender gaps among white are relatively small for high school completion and a study by Crowder and South (2003) found white girls more vulnerable than white boys to negative effects of highly disadvantaged neighborhoods on high school graduation.

[83] This research uses data from Add Health, a program project directed by Kathleen Mullan Harris and designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill, funded by grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations. Special acknowledgment is due Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Information on how to obtain the Add Health data files is available on the Add Health Web site (http://www.cpc.unc.edu/addhealth). No direct support was received from grant P01-HD31921 for this analysis.

[84] Harris, Kathleen Mullan. (2013). The Add Health study: Design and accomplishments, Carolina Population Center, University of North Carolina at Chapel Hill. [WWW document]. URL: http://www.cpc.unc.edu/projects/addhealth/data/guides/DesignPaperWIIV.pdf.

[85] Harris, Kathleen M., C.T. Halpern, E. Whitsel, J. Hussey, J. Tabor, P. Entzel, and J.R. Udry. 2009. The National Longitudinal Study of Adolescent Health: Research Design [WWW document]. URL: http://www.cpc.unc.edu/projects/addhealth/design.

[n=20,745]. A parent, usually the mother, was also interviewed at Wave I [n=17,670]. In addition, an oversample of 1,038 black adolescents with at least one parent with a college degree completed the in-school and at-home questionnaires. Wave IV in-home interviews were conducted in 2008–2009, when study participants were age 24–32 (n=15,701).

The primary sample for this study is comprised of non-Hispanic black and white students who were in the 7th to 8th grade at Wave I and completed both Wave I and Wave IV interviews. Most were age 12 to 15 at Wave I. The youth in this study would have been born in the late 1970s/early 1980s and attended middle school in the mid-1990s. Eighty-four schools are represented in the study sample; white youth attended 79 of these schools and black youth attended 56.

Dependent variables

The study outcomes are high school degree completion (versus dropping out or GED) and college entry (versus high school degree), measured at Wave IV, when most of the sample is age 24–29. GED is grouped with dropping out because research shows labor market outcomes for individuals with a GED to be more similar to those who drop out than those with a high school diploma (Cameron and Heckman 1993). In Wave IV, respondents were asked, "What is the highest level of education that you have achieved to date?" If respondents answered "some college," "associates degree," or any higher degree, this was counted as some college. Vocational or technical training after high school did not count as some college. (However, if someone had vocational training after their GED, this was counted as completing their high school degree.)

Independent variable

Median family disadvantage at the school level. This study focuses on demographic factors of schoolmate family disadvantage, including socioeconomic status, family structure, and teen parenting. I created an index of four socioeconomic and demographic variables, outlined below. Each of these factors relate to children's educational attainment. I combined these items based on their face validity, not because of their correlation. The index has a total of 7 points, with 7 representing the greatest disadvantage. I created a median score for each school to summarize the level of family disadvantage of its students. (Hence, the value of family disadvantage varies by school.)

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1) **Parent's education**—based on the education of most highly educated parent, where 3=less than high school, 2=high school degree, 1=some college or trade school but no degree, and 0=college degree or more.

2) **Poverty status**—Score 2 if household income in the past year (1994) was below the federal poverty threshold or the family received welfare within past month (AFDC, Food Stamps, or housing assistance). Score 1 if household income was between poverty threshold and 150% of poverty threshold. Score 0 if household income is at least 150% of poverty threshold. (Based on parent survey).

3) **Non-intact family**—Score 1 if not living with two biological parents. (Including all types of non-intact family status predicted educational attainment notably more than single-parent status alone.)

4) **Teenage mother**—Score 1 if Add Health participant was born to a teenage mother. (This variable was only computed for youth whose biological mother completed the parent survey.)

Control variables

Individual-level controls

Picture Vocabulary Test (PVT). An abridged version of the Peabody Picture Vocabulary Test, PVT measures verbal ability (Dunn 1981). This is the closest available variable to control for a central individual determinant of educational attainment, cognitive ability. It must be acknowledged that PVT captures both achievement and dimensions of crystallized intelligence, which is based on prior knowledge and experience. We know that verbal ability is highly influenced by family socioeconomic status (Mercy and Steelman 1982). Low-income children receive less verbal stimulation at home, and verbal ability may partially mediate the effect of family disadvantage on educational attainment. Thus, controlling for PVT likely understates the effect of family disadvantage on educational attainment. Nonetheless, controlling for PVT in the final model is important since individual ability is also a potential confounder of the relationship between family disadvantage and educational attainment.

Family control variables

My study includes many control variables to address family selection into schools. (This should also be less of a potential concern in comparisons within racial groups, i.e., black males to black females.)

- Individual-level family disadvantage index. This includes the same items that are in the school-level family disadvantage index: poverty/welfare status, parent's education, intact family status, and teenage mother. The index has a total of 7 points, with 7 representing the greatest disadvantage.

- Parent born outside of the United States (yes or no). (This includes residential parents and any nonresidential biological parents.)

- Parent's selection into schools—If parents' chose the neighborhood they live in because of school quality. This variable is included to try to address parent characteristics that may be associated with school choice.
  - "Please tell me whether each of the following statements is true with regard to your present neighborhood:…(H.) You live here because the schools here are better than they are in other neighborhoods." (from parent survey)

- Parent-child relationship—parent's perception of getting along well with child:
  - "How often would it be true for you to make each of the following statements about (your child)? You get along well with (him/her)." Answer options: (1) always (2) often (3) sometimes (4) seldom (5) never.

- Parental aspirations for child's education: "How disappointed would you be if {NAME} did not graduate from college? Answer options: (1) very disappointed (2) somewhat disappointed (3) not disappointed.

School control variables

- School region (West, Midwest, South, Northeast);

- Type of school (public vs. private);

- School size (small, medium, large);

- Urbanicity (urban, suburban, rural);

- Racial composition (percent minority- black, Hispanic, or Native American);

- Measures of school quality:

  - Percentage of full-time classroom teachers holding master's degrees;

  - Average class size over 30 students.

Neighborhood control variable

- Census tract poverty rate at Wave I. The census tract poverty rate is moderate to strongly correlated with school-level disadvantage (.59 for the total sample; .55 for white students; .35 for black students). (I also considered county crime rate, but census tract poverty rate better captures local neighborhood disadvantage. Inclusion of county crime rate in the model does not significantly alter relationships between schoolmate disadvantage and educational attainment and, in most cases, county crime rate is not a significant predictor of educational attainment.)

Analysis Plan

For the educational outcomes, each progressive level of educational attainment needs to be conditional on achieving the prior level. Therefore, the subpopulation eligible to enter college must have completed either a high school diploma, GED, or certificate of high school completion.

I ran separate logistic models by race and gender to examine the relationship between school median family disadvantage (school-level index) and educational attainment at the individual level.[86] Results are presented in odds ratios and also translated into predicted probabilities, which offer a more useful interpretation than odds ratios. The predicted probabilities simulate the probability of the educational outcome at different levels of median schoolmate disadvantage while keeping other variables at their actual values. Comparing predicted probabilities among groups also avoids the problem of possible unequal residual variance among groups.

To conduct statistical tests for differences across groups, I used conventional logistic regression models with Wald tests of interactions. Recent methodological literature has noted that

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[86] Note that I ran separate models for black and white males because I cannot assume equal error variances across the populations. Moreover, these populations are sufficiently different that it does not make sense to pool them and describe them together.

unequal residual variation (unobserved heterogeneity) by group in binary regression models can affect the slope coefficients and in some instances lead to inaccurate results of tests for interactions (Allison 1999; Williams 2009). Therefore, I also used heterogeneous choice model (ordinal generalized linear models [oglm]), to test whether there is unequal residual variance by group that would warrant adjustment for unobserved heterogeneity (Williams 2009).[87]

Analyses were conducted in STATA 13.1 using the SVY command. All models were statistically adjusted for survey weighting as well as clustering due to the non-independence of children sampled by school; this provides an unbiased estimate. In analyses presented below, cases with missing data (approximately 14%) have been deleted.

Results

Descriptive Results

This section presents descriptive results for the independent variable. (Patterns of educational attainment by race and gender are presented in Chapter 2.)

Table 3.1 presents the distribution of school median family disadvantage scores by race. Note that school medians range from 0 to 5. The modal score is 2 for white students and 5 for black students, closely followed by 2. Because so few students attend schools with a median of 0 family disadvantages, 0 and 1 were combined in the analysis.

Table 3.1. Distribution of Median Schoolmate Disadvantage by Race

School Median Family Disadvantage	Black Students: Weighted Proportion (Unweighted Number)	White Students: Weighted Proportion (Unweighted Number)
0	.00 (9)	.01 (35)
1	.10 (128)	.31 (703)
2	.28 (296)	.45 (902)
3	.17 (132)	.17 (270)
4	.14 (118)	.04 (78)
5	.31 (105)	.02 (19)
Total	1.0 (788)	1.0 (2,007)

Note: Middle-class African Americans were oversampled; the weighting corrects this to keep the sample representative of the population.

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[87] Richard Williams developed a program in STATA to run this type of model. The oglm model can adjust for unequal residual variation and tests the significance of the interaction using a likelihood ratio test of nested models. The likelihood ratio test, however, does not allow adjustment for survey weighting—a limitation.

As displayed in Table 3.1, African American youth disproportionately attend schools with peers from disadvantaged families. Nearly one-third attend schools with the highest concentration of schoolmate disadvantage, level 5, in contrast to 2% of white youth. The distribution appears almost flipped by race: 62% of black youth attend schools in which the median level of family disadvantage is 3 or more, as compared with 23% of white youth. Seventy-seven percent of white youth attend schools in which the median level is 2 or less.

For the total sample of black and white youth in the 7th to 8th grades, the correlation between the individual family disadvantage score and the school-level family disadvantage score is .51. (Correlations are slightly stronger for black than white youth, .47 vs. .41, respectively.)

Regression Models

Models of School-Level Median Family Disadvantage Index

Next, I use the median level of family disadvantage at each school to predict educational attainment for each race-gender subgroup. Tables 3.2–3.5 present results of logistic regression models in odds ratios, with all control variables in the models. (The odds ratio for the schoolmate disadvantage index shows the change in the odds of the educational outcome for a given level of schoolmate disadvantage compared to the level of schoolmate disadvantage of the reference group, holding constant all other predictors in the equation.) These tables also include the associated predicted probabilities based on the regression results. Figures 3.2–3.3 present the predicted probabilities graphically.

Focusing on African American youth first, let's examine Table 3.2, which presents results for the outcome of high school degree completion (versus dropping out or obtaining a GED). Among black males, schoolmate disadvantage lowers the odds of high school graduation after accounting for individual, family, school, and community factors. Moreover, the index for individual family disadvantage becomes insignificant after accounting for schoolmate disadvantage, quality of the mother-child relationship, and other school and community factors. By contrast, among black females, there is no relationship between schoolmate disadvantage and high school graduation; instead, individual family disadvantage matters for high school graduation. For black males, schoolmate disadvantage shows an increasingly negative relationship to high school graduation,

statistically significant for levels 4 and 5 of schoolmate disadvantage compared to level 0–1 schoolmate disadvantage (OR=.41, p<.10 and .17, respectively, p<.01). Although the patterns suggest that there may be a stronger relationship between schoolmate disadvantage and high school graduation among black males than females, the difference was not statistically significant.

Translating these results into predicted probabilities (Table 3.2 and Figure 3.2), African American males attending the least disadvantaged schools have a .81 predicted probability of graduating high school; when schoolmate disadvantage increases to 3–4, the predicted probability of graduating decreases to .66–.67, and at level 5 disadvantage, the probability drops to .50. Note that in schools with low schoolmate disadvantage (0–2), black males have approximately equal or higher predicted probabilities of graduating high school than black females.

For the outcome of college entry, conditional on completing high school (Table 3.3), the data show a threshold relationship between schoolmate disadvantage and college entry among black youth. Highly concentrated schoolmate disadvantage (level 5 vs. <5) is associated with a 92% decline in the odds of entering college (OR=.08, p<.001) among black males and a 61% decline among black females (OR=.39, p<.01). This difference was statistically significant according to the Wald test (F=23.12, p=00); however, the sample sizes become very small in these cells (n=52 for black females and n=33 for black males). Comparing levels 4–5 between black males and females showed borderline statistical significance based on a Wald test (F=2.88, p=.09). [88] Translating these results into predicted probabilities: With the most concentrated schoolmate disadvantage (comparing level 5 vs. < 5), the predicted probability of entering college declines from .50 to .14 among black males and from .71 to .55 among black females. Figure 3.3 displays the predicted probabilities graphically. Among blacks, the largest gender gap in college entry occurs at both ends of the spectrum—schools with the most and least disadvantaged youth.

Among white youth, gender patterns differ for high school degree completion (F=5.58, p=.02). Among white females, but not males, school median family disadvantage shows an increasingly

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[88] For the comparison of 5 vs. <5, the test for residual variation across groups approached significance. Therefore I also used an oglm model to adjust for unobserved heterogeneity, with a likelihood ratio test of nested models to compare level 5 vs. <5 for black males and females. This likelihood ratio test, which cannot adjust for survey weighting, was not significant for this comparison (5 vs. <5). Tests for residual variation did not approach significance in comparing level 4–5 vs. <4; combining these levels also increases the sample size.

negative relationship to high school graduation (Table 3.4). Among white females, this relationship becomes statistically significant at the higher thresholds of schoolmate disadvantage, levels 4 and 5, compared to the lowest level, 0–1 (OR=.14, .07, respectively, p<.01). Translating this into predicted probabilities: White females attending school with the lowest schoolmate disadvantage (0–1) have a .93 probability of graduating; this probability declines to .76 and .66 in schools with levels 4 and 5 disadvantage, respectively. (At these high levels of schoolmate disadvantage, the white boys actually have a somewhat higher predicted probability of graduating high school than the white girls, holding constant the other variables in the model.) Nonetheless, among white youth, precision is limited to investigate relationships at the highest level of disadvantage, level 5, with only 9 boys and 10 girls in schools with such high disadvantage.

For the outcome of college entry, conditional on completing high school (Table 3.5), schoolmate disadvantage shows a negative relationship to college entry among both white males and females. The relationship is particularly negative for white males when schoolmate disadvantage is high, levels 4–5 vs. <4 (OR=.26, p<.01); this is marginally significant different from white females (F=3.64, p=.06). White males attending school with high schoolmate disadvantage have a .43 predicted probability of entering college versus .68 among white males in schools with the lowest disadvantage (level 0–1). Although white females also show declining odds of entering college with increased schoolmate disadvantage, the largest gap occurs between females with the least disadvantaged schoolmates (0–1 disadvantage) versus all the other groups (levels 2–5 median schoolmate disadvantage). White girls attending the least disadvantaged schools have .83 predicted probability of entering college. This declines to the .69–.74 range for all other levels of disadvantage in the range of the data. Note that for the sample of white youth who completed high school and are eligible to enter college, the sample sizes are further reduced in the cells for the highest levels of schoolmate disadvantage. The numbers were too small to analyze level 5 separately, so levels 4 and 5 were combined (n=34 girls and 40 boys in levels 4–5 combined; n= 5 girls and 7 boys in level 5 alone).

Comparing all race and gender groups, schoolmate family disadvantage reduces the odds of high school graduation among both black males and white females. Black males, followed by white

females, show the steepest decline in (and lowest absolute) predicted probability of graduating as schoolmate disadvantage becomes more concentrated. In addition, highly concentrated schoolmate disadvantage appears to reduce the likelihood of college entry to a greater extent among black males than black females. White males also show a strong negative relationship to concentrated schoolmate disadvantage (threshold of 4) and college entry; this relationship does not statistically differ from that of black males. However, too few white youth experience the highest level of concentrated schoolmate disadvantage to be able to make precise comparisons at the highest level of disadvantage.

In terms of the other independent variables (Table 3.2), one factor stands out for African American males: Mother's (or primary caretaker's) report of how well she gets along with her child is the most powerful predictor of high school graduation. This variable is also marginally significant for white females for high school graduation, although smaller in magnitude than for black males. It is not statistically significant for black females. Finally, the Picture Vocabulary Test (PVT), a measure of verbal ability, does not significantly predict high school graduation for black males, in contrast to all other groups.

Table 3.2. Median Schoolmate Disadvantage Index Predicting High School Degree Completion (Versus Dropping Out or GED)—African American Males and Females (Logistic Regression Models)

Independent Variables	Black Males			Black Females		
	Odds Ratio	95% Confidence Interval	Predicted Probability	Odds Ratio	95% Confidence Interval	Predicted Probability
School median family disadvantage index						
0-1 = Reference			.81			.72
2	.77	.28, 2.11	.77	1.65	.33, 8.24	.79
3	.39	.12, 1.31	.66	2.39	.61, 9.27	.83
4	.41†	.16, 1.02	.67	2.33	.65, 8.36	.83
5	.17**	.05, .60	.50	2.25	.38, 13.50	.82
Individual family disadvantage index	.85	.67, 1.08		.70***	.61, .80	
Immigrant parents	.38	.04, 3.93		.56	.10, 3.16	
Parents chose neighborhood for schools	1.06	.49, 2.30		.36*	.14, .93	
Parent-child get along (reverse coded)	.50***	.37, .68		1.20	.63, 2.27	
Parent college expectation (reverse coded)	.83	.61, 1.13		1.07	.66, 1.73	
Peabody Vocabulary Test score	1.02	.98, 1.05		1.08**	1.03, 1.13	
Public school	.78	.05, 12.19		2.14	.25, 18.27	
School size 2 (1=Reference)	1.47	.79, 2.74		.79	.30, 2.10	
School size 3 (1=Reference)	.43	.06, 2.93		.15†	.02, 1.29	
Urban (vs. suburban)	1.60	.74, 3.43		1.12	.32, 3.95	
Rural (vs. suburban)	1.35	.75, 2.43		2.35†	.87, 6.33	
Class size >30	.40	.07, 2.11		4.01	.57, 28.32	
% Teachers with master's degree	1.95	.36, 10.43		3.04	.22, 41.67	
% Minority students	.67	.24, 1.87		.88	.20, 3.96	
Southern region (West=Reference)	.06**	.01, .39		3.90	.52, 29.02	
Midwestern region (West=Reference)	.15†	.02, 1.16		.58	.07, 4.74	
Northeastern region (West=Reference)	.03***	.00, .17		25.00*	1.01, 616.23	
Census tract poverty rate	.11*	.01, .96		.54	.02, 18.87	
Constant	206.44			.00		
Observations	359			429		

***p < 0.001, **p < 0.01, *p < 0.05, +p < 0.1

Table 3.3. Median Schoolmate Disadvantage Index Predicting College Entry (Conditional on Completing High School)—African American Males and Females (Logistic Regression Models)

Independent Variables	Black Males			Black Females		
	Odds Ratio	95% Confidence Interval	Predicted Probability	Odds Ratio	95% Confidence Interval	Predicted Probability
School median family disadvantage index						
<5=Reference			.50			.71
5	.08***	.04, .17	.14	.39**	.20, .79	.55
Family disadvantage index	.58***	.45, .75		.83*	.70, .99	
Immigrant parents	2.02	.33, 12.54		.54	.15, 1.88	
Parents chose neighborhood for schools	1.36	.64, 2.89		.90	.48, 1.68	
Parent-child get along (reverse coded)	.73	.40, 1.33		.76	.51, 1.11	
Parent college expectation (reverse coded)	.74	.42, 1.31		.62**	.43, .89	
Peabody Vocabulary Test score	1.03**	1.01, 1.06		1.09***	1.04, 1.13	
Public school	1.08	.35, 3.33		.18	.02, 1.65	
School size 2 (1=Reference)	.87	.50, 1.52		1.12	.59, 2.10	
3 (1=Reference)	2.85	.59, 13.76		.57	.26, 1.29	
Urban (vs. suburban)	.30***	.17, .50		1.18	.58, 2.38	
Rural (vs. suburban)	.96	.44, 2.08		.61	.29, 1.28	
Class size >30	.32†	.09, 1.16		.94	.48, 1.86	
% Teachers with master's degree	1.30	.47, 3.59		1.57	.36, 6.94	
% Minority students	1.00	.26, 3.91		3.80**	1.31, 10.99	
Southern region (West=Reference)	.32	.07, 1.40		1.63	.20, 13.01	
Midwestern region (West=Reference)	.64	.12, 3.33		1.81	.18, 18.12	
Northeastern region (West=Reference)	.22	.03, 1.52		1.03	.12, 9.01	
Census tract poverty rate	.19†	.03, 1.21		.17*	.04, .86	
Constant	3.47			.02		
Observations	308			388		

***p < 0.001, **p < 0.01, *p < 0.05, +p < 0.1

Table 3.4. Median Schoolmate Disadvantage Index Predicting High School Degree Completion (Versus Dropping Out or GED)—White Males and Females (Logistic Regression Models)

Independent Variables	White Males			White Females		
	Odds Ratio	95% Confidence Interval	Predicted Probability	Odds Ratio	95% Confidence Interval	Predicted Probability
School median family disadvantage index						
0-1 = Reference			.83			.93
2	1.67†	.93, 2.98	.88	.52	.20, 1.35	.89
3	.67	.33, 1.35	.78	.47	.15, 1.49	.88
4	1.21	.46, 3.16	.85	.14**	.04, .56	.76
5	.46	.06, 3.38	.73	.07**	.01, .54	.66
Individual family disadvantage index	.64***	.55, .74		.62***	.51, .76	
Immigrant parents	.86	.23, 3.17		1.58	.33, 7.63	
Parents chose neighborhood for schools	.95	.57, 1.60		2.18**	1.28, 3.72	
Parent-child get along (reverse coded)	.75	.46, 1.20		.72†	.52, 1.01	
Parent college expectation (reverse coded)	.82	.57, 1.20		.48***	.34, .68	
Peabody Vocabulary Test score	1.05***	1.04, 1.07		1.07***	1.05, 1.10	
Public school	.32†	.09, 1.17		.28**	.11, .71	
School size 2 (1=Reference)	.64	.35, 1.18		1.73	.85, 3.50	
School size 3 (1=Reference)	.87	.32, 2.39		3.13*	1.25, 7.83	
Urban (vs. suburban)	1.25	.49, 3.21		1.00	.47, 2.14	
Rural (vs. suburban)	.83	.53, 1.30		1.88†	.96, 3.69	
Class size >30	.57	.17, 1.20		4.30*	1.30, 14.26	
% Teachers with master's degree	3.67*	1.18, 11.37		2.12	.63, 7.14	
% Minority students	.94	.20, 4.40		2.86	.39, 21.26	
Southern region (West=Reference)	.26*	.07, .99		2.42	.77, 7.63	
Midwestern region (West=Reference)	.33†	.09, 1.20		3.08†	.91, 10.37	
Northeastern region (West=Reference)	.41	.09, 1.75		3.00†	.80, 11.30	
Census tract poverty rate	5.95	.29, 123.89		7.79	.06, 971.15	
Constant	.87			.12		
Observations	933			1074		

***p < 0.001, **p < 0.01, *p < 0.05, +p < 0.1

Table 3.5. Median Schoolmate Disadvantage Index Predicting College Entry (Conditional on Completing High School)—White Males and Females (Logistic Regression Models)

Independent Variables	White Males			White Females		
	Odds Ratio	95% Confidence Interval	Predicted Probability	Odds Ratio	95% Confidence Interval	Predicted Probability
School median family disadvantage index						
0-1=Reference			.68			.83
2	.84	.45, 1.55	.65	.54*	.31, .95	.74
3	.80	.41, 1.55	.64	.41*	.20, .87	.69
4-5	.26**	.10, 70	.43	.48	.11, 2.03	.72
Family disadvantage index	.67***	.58, .79		.73***	.63, .84	
Immigrant parents	.41†	.14, 1.16		2.17	.70, 6.68	
Parents chose neighborhood for schools	1.23	.74, 2.05		1.11	.63, 1.96	
Parent-child get along (reverse coded)	.85	.62, 1.18		.80	.59, 1.08	
Parent college expectation (reverse coded)	.65**	.50, .84		.76*	.57, 1.01	
Peabody Vocabulary Test score	1.04***	1.02, 1.07		1.05***	1.03, 1.07	
Public school	1.12	.41, 3.09		.95	.50, 1.80	
School size 2 (1=Reference)	1.29	.71, 2.34		.94	.57, 1.56	
School size 3 (1=Reference)	.80	.26, 2.45		.44*	.22, .91	
Urban (vs. suburban)	1.64	.86, 3.11		1.15	.56, 2.35	
Rural (vs. suburban)	1.06	.61, 1.86		.74	.46, 1.19	
Class size >30	.93	.38, 2.28		1.09	.62, 1.91	
% Teachers with master's degree	1.14	.54, 2.42		.82	.40, 1.71	
% Minority students	.33	.08, 1.27		.52	.07, 3.72	
Southern region (West=Reference)	.83	.36, 1.92		1.17	.55, 2.53	
Midwestern region (West=Reference)	.62	.25, 1.52		1.19	.55, 2.55	
Northeastern region (West=Reference)	.60	.24, 1.50		1.69	.72, 3.99	
Census tract poverty rate	2.40	.32, 18.14		1.47	.11, 20.31	
Constant	.15			.21		
Observations	851			1005		

***p < 0.001, **p < 0.01, *p < 0.05, +p < 0.1

Figure 3.2. Predicted probabilities for high school graduation (vs. dropout or GED)

a. Black Males and Females
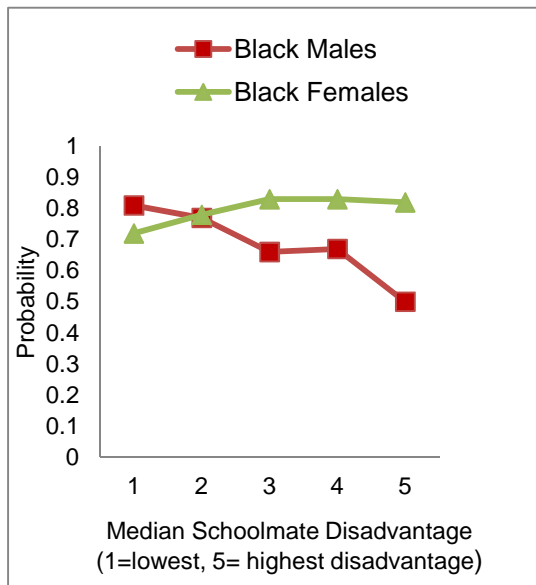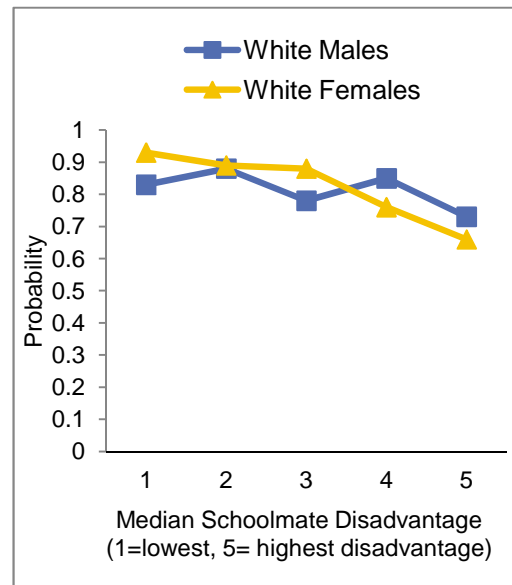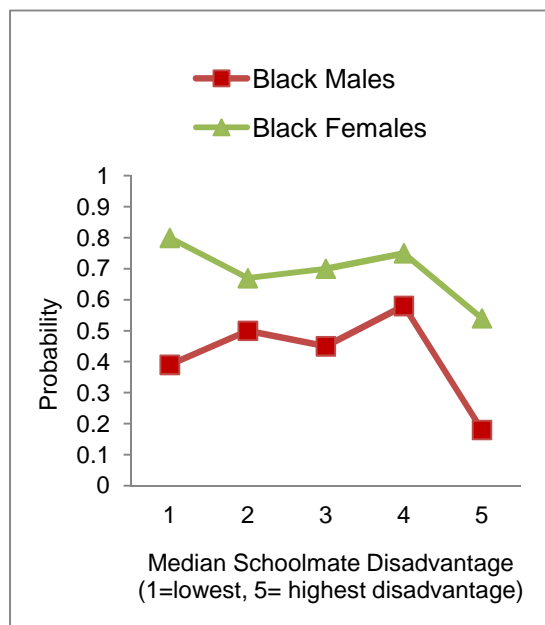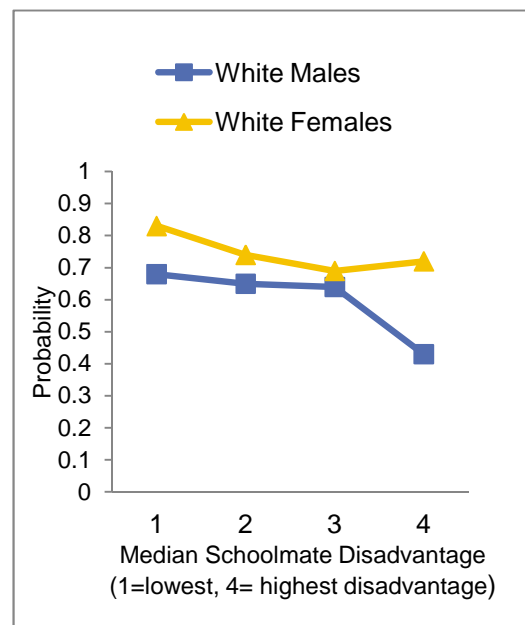
b. White Males and Females

Figure 3.3. Predicted probabilities for college entry (conditional on completing high school)

a. Black Males and Females

b. White Males and Females

Discussion

Black youth are more likely than white youth to experience multiple family disadvantages, such as low socioeconomic status and non-intact family structure, and to attend schools with children who also have multiple family disadvantages. Among black males, the concentration of schoolmate disadvantage shows a strongly negative relationship to high school degree completion and especially college entry. Among black females, concentrated schoolmate disadvantage shows no significant relationship to high school degree completion, after accounting for individual family disadvantage. Highly concentrated schoolmate disadvantage reduces the likelihood of college entry among black females, but the relationship appears to be more detrimental for black males.

The study findings are suggestive that concentrated schoolmate disadvantage may be more negative for the educational attainment of African American males than females. Black males and females may be experiencing a different environment within the same disadvantaged contexts. In environments with high levels of schoolmate disadvantage, boys may be more likely to encounter male peer norms that discourage academic effort and achievement. As shown in this study, very few white youth are exposed to the high levels of concentrated disadvantage to which black youth are exposed. Concentrated schoolmate disadvantage shows a dramatically negative relationship to college entry for black males. African American males have the lowest rate of any group of attaining a college education. Disadvantaged black males face particular hurdles to college entry.

Gender patterns differ somewhat among whites relative to blacks. Schoolmate disadvantage is detrimental for high school degree completion among white females but not males, within the range of data. Conditional on completing high school, concentrated schoolmate disadvantage reduces the chances of college entry more for white boys than girls.

This research makes several contributions. It adds to current knowledge about how relationships among family disadvantage, school context, and educational attainment vary by race and gender, in particular for African American males in early to middle adolescence. This study uses a more comprehensive measure of family background factors than is typical in education research, such as measures of peer poverty or free/reduced lunch status. In addition, most studies focus on educational achievement (test scores) rather than attainment. I also examined multiple levels of

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educational attainment, finding that patterns differ depending on the level of educational outcome. Finally, I used available survey data to control for selection into schools to reduce selection bias in the study results.

This study identifies different environmental pathways in educational attainment among black males and females; however, its limitations warrant consideration. Findings from this study apply to a national sample of 7th–8th graders in the mid-1990s. Patterns may differ for other age groups or historical periods. A larger sample size would strengthen statistical power to make comparisons between African American males and females; for some analyses, the samples became small. This longitudinal study cannot determine causality and does not test specific mechanisms through which school-level family disadvantage may influence educational attainment. Although models control for census tract poverty rates, it's possible that unmeasured neighborhood factors could modestly alter this relationship; available research indicates that the effects of school context, including peer poverty rates, remain robust after accounting for neighborhood factors (Jargowsky and Komi 2009). Even though the analysis controls for many school factors, it's also possible that other unmeasured school factors associated with having disadvantaged schoolmates could contribute to the relationship between schoolmate disadvantage and educational attainment. Strong individual, family, and community controls point to school context as a factor in the observed divergent gender patterns among African Americans. This has important policy implications because public interventions can more readily change the school environment, including school climate factors, than the home environment.

The findings of my study echo patterns identified in the neighborhood effects literature. Some studies of race and gender patterns found that dimensions of neighborhood socioeconomic composition showed a stronger relationship to academic outcomes (high school graduation and math scores) for black males than for females (Ensminger et al. 1996; Crane 1991; Entwisle, Alexander, and Olson 1994; Crowder and South 2003). For example, Crowder and South (2003) found the risk of dropping out to be similar for African American male and female adolescents, but in the most highly disadvantaged neighborhoods, black males were twice as likely to drop out as black females. In terms of white youth, Crowder and South report that white males are more likely than white females

to drop out in most levels of disadvantage, but in extremely disadvantaged neighborhoods, females are at higher risk for dropout than males. Consistent with this, my study found that a concentration of schoolmate disadvantage negatively predicts high school graduation for white females but not for white males in the 7th to 8th grade. However, among white youth who complete high school, white males are more vulnerable to concentrated schoolmate disadvantage for the outcome of college entry.

Gender differences among African Americans and other racial/ethnic groups warrant more attention. Individual status configurations influence positions in social structures, including in schools and the economy, and affect micro interactions. The gender gap in educational attainment among blacks has long historic roots (McDaniel et al. 2011). This national population-based study complements existing qualitative research and adds to limited quantitative research related to the gender gap among African Americans. More research is needed to explain the large gender gap in educational attainment among African Americans.

CHAPTER 4. SCHOOL CLIMATE FOR BOYS—AGGRESSIVE AND VIOLENT BEHAVIOR OF SCHOOLMATES

Introduction

Many factors associated with schoolmate disadvantage can influence educational attainment, such as the academic level, achievement motivation, and behavioral norms of schoolmates, as well as how these factors affect teaching quality. This chapter addresses another important factor that shapes the male peer climate at school and can negatively influence the education of disadvantaged black boys. In particular, physical aggression and violence is a correlate of this climate of disadvantage that is more prevalent among boys than girls.

Children living in disadvantaged environments, especially boys, are at greater risk of being exposed to violence and violent peers. Attending school with a higher concentration of physically aggressive or violent male peers may exert a negative influence on the academic, social, and emotional climate of school for boys in particular, especially boys from disadvantaged families and those attending schools with highly disadvantaged schoolmates. Because African American males experience disproportionately high rates of family poverty and concentrated neighborhood disadvantage, they are more likely to be exposed to violence and to attend schools with peers who engage in aggressive and violent behavior.

This chapter investigates how the prevalence of physically aggressive and violent boys in school (7th–10th grades) relates to the educational attainment of African American males. Disadvantages tend to cluster, and multiple risks can compound disadvantage. Considering the interdependence of contexts, I also examine whether the relationship between schoolmate violence and educational attainment varies according to levels of individual family disadvantage and concentrated schoolmate disadvantage. Do levels of schoolmate violence accentuate the negative effect of individual family disadvantage and concentrated schoolmate disadvantage on educational attainment? I explore micro-macro conditional relationships because boys from disadvantaged families may be more vulnerable to the negative effects of the peer environment. At the macro-macro,

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level of school climate, aggressive and violent behavior of male schoolmates may foster a much more negative academic environment in the context of a socioeconomically disadvantaged school. Figure 4.1 below illustrates the relationships that will be examined.

Strategic comparisons are made to white males. I consider the violent behavior of schoolmates as a dimension of the school peer climate for males; but I do not specifically investigate the effects of violent actions within the school. Median violent behavior of schoolmates is measured through an additive index of self-reported violent behaviors of schoolmates in and out of school, ranging from fighting—the most common—to shooting or stabbing someone.

Figure 4.1. Conceptual model
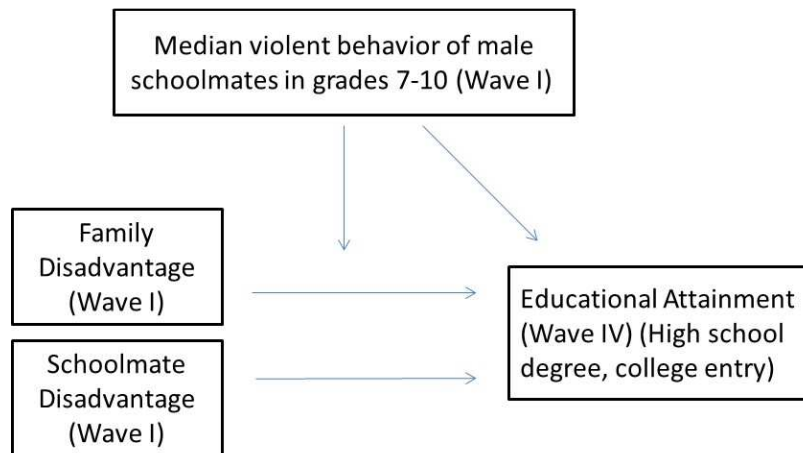
The next section summarizes relevant literature, with emphasis on the following topics:

- the risk and sequelae of exposure to violence among children and adolescents;

- the relationship of violence exposure and educational outcomes; and

- exposure to aggressive and violent schoolmates—its prevalence and relationship to educational outcomes through (a) violence at school/perceived safety and (b) the academic climate for boys.

Literature Review

Risk and Sequelae of Exposure to Violence

Consistent with the stress process model, social disadvantage at the individual and contextual levels is associated with greater exposure to stressors such as violence (Pearlin 1989; Turner et al. 2006; Aneshensel 1992; Foster and Brooks-Gunn 2009). Violence tends to cluster most in urban neighborhoods with concentrated poverty (Morenoff, Sampson, and Raudenbush 2001). Children and adolescents living in disadvantaged neighborhoods are more likely to both witness violent crimes and fights and to become victimized themselves (Stiffman et al. 1999). In view of the intersection of race, poverty, and family structure in many U.S. cities, "…there is no counterfactual for whites" in terms of level of concentrated disadvantage (Sampson 2008, p. 225).[89]

Children living in dangerous and disadvantaged neighborhoods are more likely than other children to show behavioral and emotional problems, such as internalizing and externalizing (Attar et al. 1994; McLoyd 1990; Garbarino, Kostelny, and DuBrow 1991; Shumow, Vandell, and Posner 1998). Boys are more susceptible to externalizing behavior, including conduct problems, which negatively affect educational attainment (McLeod and Kaiser 2004; Masten et al. 2005). In an oft-cited cross-sectional study of Los Angeles County adolescents, Aneshensel and Sucoff (1996) found that the more threatening adolescents perceive their neighborhood, the more likely they are to show symptoms of depression, anxiety, oppositional defiant disorder, and conduct disorder, after accounting for individual and family background characteristics. Black teenagers rated their neighborhoods as more threatening than other adolescents, even when the socioeconomic status (SES) and racial/ethnic composition of the neighborhoods is statistically controlled. Boys tended to show more symptoms of conduct disorder (violating rules and norms, physical aggression), whereas girls showed more depression and anxiety. The negative relationship between neighborhood risk and mental health is intensified by exposure to violence, especially for externalizing problems (Stiffman et al. 1999). These results are compatible with social modeling theory (Bandura 1986) and theories about aggression leading to aggression (Patterson et al. 1992).

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[89] According to a study by Crowder and South (2010) using the Panel Study of Income Dynamics, nearly 40% of blacks vs. 1.3% of whites spent some of their childhood years in neighborhoods with multidimensional socioeconomic advantage scores at least two standard deviations below the mean.

Attar, Guerra, and Tolan (1994) prospectively examined the relationship between stressful events in the past year and adjustment one year later among a sample of urban African American and Hispanic children in the Midwest. [90,91] The total number of stressors modestly predicted current and future aggression; exposure to violence predicted both present and future aggression. Children living in highly disadvantaged neighborhoods experienced more stressful events and were more negatively affected by them; effects did not vary by ethnicity, sex, or grade.

Many studies have found that excessive stress negatively affects children's development (Attar, Guerra, and Tolan 1994; Evans and English 2002; Evans and Schamberg 2009; Wheaton and Clarke 2003). Exposure to violence can lead to acute and chronic stress, which can negatively affect attention, memory, learning, and cognitive performance (McEwen and Lasley 2002; Bremner 2002; Sharkey 2010). Using two Chicago datasets, including the Project on Human Development in Chicago Neighborhoods, Sharkey found acute negative effects on cognitive performance of children living in census block groups that experienced a homicide (Sharkey 2010).

Exposure to Violence and its Relation to Educational Outcomes

Several studies have examined the relationship between exposure to violence or perceived threat and education outcomes among adolescents. Bowen and Bowen (1999) investigated the relationship between school and neighborhood danger and educational outcomes using a nationally representative cross-sectional survey of middle and high school students. They found that males, African Americans, low-income, and urban students were more likely than other groups to be exposed to danger at school and in their neighborhood. Exposure to danger in these domains significantly predicted negative educational outcomes, including reduced attendance, problem behavior at school, and, to a lesser extent, lower grades, after controlling for extensive demographic characteristics.

Using the National Longitudinal Study of Adolescent Health, Harding (2009) found that living in a violent neighborhood predicts a higher likelihood of dropping out of high school among males and

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[90] They measured 16 possible stressful events, including life transitions, circumscribed events (e.g., death in the family, family property damage), and stresses related to exposure to neighborhood dangers and violence.

[91] In this study, children living in highly disadvantaged neighborhoods reported nearly 7 out of 16 possible stressful life events during the past year and those in moderately distressed neighborhoods reported 4. As a comparison, another study of mostly white middle-class children found that they reported an average of slightly more than 2 stressors out of 32 possible events (Attar, Guerra, and Tolan 1994).

females, net of individual violence and other individual, family, community, and school controls. In path models, Harding (2009) estimated that neighborhood violence explained 44% of the conditional relationship between neighborhood disadvantage and high school graduation for males.

Ehrmann and Massey (2008) used the National Longitudinal Survey of Freshman, a representative sample of freshmen entering 28 selective colleges and universities in the fall of 1999, to investigate how the ecological exposure to segregation, violence, and disorder in neighborhoods and schools in childhood and adolescence influences college achievement (grades). They found that "males are exposed to higher levels of violence and disorder than females, and that the gender gap in such exposure grows as the ecological concentration of minority group members increases" (p. 220). The grades of males are more influenced by high levels of disorder and violence than females simply because relatively few females experience these high levels of exposure. Black and Latino students who grew up in segregated schools and neighborhoods had lower grades in college due to increased exposure to violence and disorder in childhood, controlling for differences in academic preparation and other factors associated with achievement. Although black males and females share the same ecological settings, they experience these environments differently: "…gender identity influences patterns of social interaction inside and outside of the home, among peers, family members, and within extended social networks" (Ehrmann and Massey 2008, p. 236).

Exposure to violent schoolmates also increases the risk of joining negative peer groups. Based on friendship network data from the National Longitudinal Study of Adolescent Health, Staff and Kreager (2008) revealed that popularity in violent subgroups of males increases the risk of dropping out of high school among males from low socioeconomic backgrounds, after accounting for individual characteristics and violent behavior.

Youth exposed to violent neighborhoods and schools are also more likely to be victimized. Violent victimization disproportionately occurs in childhood and adolescence, during the most formative stages of life (Macmillan 2001). Victimization undermines individual's feelings of self-efficacy, agency, and sense of trust in others, important factors in child and adolescent development

and education. Victimization is associated with decreased educational aspirations, effort, and attainment (Macmillan 2001; Macmillan and Hagan 2004).[92]

How Exposure to Violent Schoolmates Relates to Educational Processes

According to the 2013 Youth Risk Behavior Survey of 9th–12th grade students, 38% of black males and 27% of white males in the United States have been in a physical fight in the past 12 months; 14% and 9%, respectively, have been in a physical fight on school property. In addition, 10% of black male students and 6% of white male students have been threatened or injured with a weapon on school property in the past 12 months (Center for Disease Control [CDC] 2014).

Attending school with more aggressive and violent schoolmates can negatively affect boys' educational achievement and attainment for many reasons, including safety concerns and stress, the potential for social modeling of aggressive behavior (Bandura 1986), and a diffuse negative effect on the academic climate for boys. I next discuss direct effects of violence at school and then the indirect effect of aggressive and violent schoolmates on school climate and achievement.

Safety at school

Most schools are generally safe environments even though some fighting may occur. However, in the more severe circumstances, having a higher concentration of violent schoolmates in disadvantaged schools may be associated with exposure to more serious violence or feeling unsafe in and around the schools. Nationally, a significant minority of students do not feel safe going to school: 7.8% of black males and 3.8% of white males did not go to school at least one day in the past 30 days because of safety concerns (at school or en route to/from school). In urban school districts, the median rate was 10.8%, with a high of 16.8% (CDC 2014).

Feeling unsafe at school has a negative effect on learning and well-being. Kirk and Sampson (2011) combined data from the longitudinal Project on Human Development in Chicago Neighborhoods with several public databases to examine how criminal behavior among students in public schools affects the ability of schools to provide a safe and productive learning environment. They found that crime is a major problem for students and their schools. Twelve percent of students

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[92]Victimization is also associated with later risk of crime and deviance and association with delinquent peers (e.g., gang involvement in response to perceived danger) as well as higher risk for mental health problems over the life course.

skip school one or more times each month because of fear for their safety. The schools with relatively high numbers of youth who have been arrested "tend to be poorly functioning learning environments, characterized by fear and a lack of commitment among teachers" (Kirk and Sampson 2011, p. 397). Schools with high arrest rates have low graduation rates, are perceived less safe by students, and tend to have more disciplinary problems. These schools also have more low-income students and more African American students compared with schools with low and moderate arrest rates (Kirk and Sampson 2011).

Burdick-Will (2013) studied Chicago schools and police data to examine variation of violent crime rates within schools over time to estimate the effect of school violence on academic achievement. Chicago confronts high violent crime rates. School and neighborhood fixed-effects models demonstrated a direct, negative effect of school violent crime rates over time on individual test scores. Although reading and math test scores declined after violent crime increased, reflecting less learning, grades did not change. Because grades reflect achievement relative to peers, Burdick-Will concludes that teachers lowered their expectations for the whole class.

Burdick-Will found that the majority of violent crime occurred in just a few high schools, but these schools varied each year; there was also high variation from year to year in violent crime rates within schools. Nonetheless, the majority of the variation in annual violent crime rates occurred in schools where students reported low levels of perceived safety. In schools where students reported feeling safe, violent crime rates never reached the levels in schools where students reported feeling unsafe. Although perceived safety tended to be relatively stable within schools over time, students in school-years with high levels of violent crime reported that their schools were less safe and that they had less trusting and supportive relationships with their teachers compared to students in low violence school years. Small changes in perceived safety showed a much larger relationship to changes in test scores than did relatively large changes in violent crime rate. There appears to be a dynamic and reciprocal relationship among perceived safety, violent crime, and teacher trust (Burdick-Will 2013).

It should be noted that these studies focused on violent crime in the schools and did not capture the effect of lower-level aggression and violence at school that may not be reported to the

Chicago Police Department. Boys most commonly engage in fighting behavior, which may not be significantly related to perceptions of school safety but may still have a negative effect on the academic climate for boys.

Academic climate for boys

The National School Climate Center (2012) states that "[t]he physical, social, emotional, and intellectual climate of schools and classrooms is a significant factor in the achievement, behavior, well-being, and future success of students and their teachers" (p. 2). Student characteristics contribute to the educational climate at school. Students bring their academic skills, expectations, and social behavior, which interact with other dimensions of the school environment. The behavior and academic orientation of students affects classroom dynamics and the learning environment at school.

In a national study of primary and secondary schools to investigate equal opportunity (the Coleman report), one of James Coleman's major findings was that "the social composition of the student body is more highly related to student achievement, independent of the student's own background, than is any school factor" (Coleman 1966, p. 325). In studying high schools as social systems, Coleman found variation in school cultures in terms of adolescents' values, attitudes, and behaviors and how status was conferred (Coleman 1961). He concluded that an achievement-oriented student culture provides social incentives and rewards that foster higher academic performance in contrast to peer cultures that assign relatively low value to academic effort (Coleman 1960, 1961; Schneider 2000).[93] Having a higher prevalence of aggressive and violent male peers promotes masculine cultural environments for boys that run counter to learning and academic achievement. On average, aggressive and violent youth do less well in school and have lower educational attainment (e.g., Cairns, Cairns, and Neckerman 1989; Ensminger and Slusarcick 1992). In addition, aggressive, externalizing behavior leads to more classroom disruptions, which decreases learning. The composition of the classroom also affects the behavior of teachers. In environments with high concentrations of disadvantaged and seemingly "tough" boys, teachers may have lower expectations of the boys. This, in turn, affects their learning and expectations.

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[93] Using Add Health, Harris and colleagues found that that several school climate factors predicted risk-taking behavior more than school-level socioeconomic status. Same-sex grademates' aggregate expectations about their future and their emotional distress predicted such risky behavior as drug selling and weapons use (Harris, Duncan and Boisjoly 2002).

From Paul Willis's study of working class boys in 1970s England to Edward Morris's recent American ethnography, many scholars have observed how gender, class, and local conditions interact in ways that shape academic attitudes and behaviors. In certain settings, working-class and low-income boys may develop attitudes and identities that academic striving is not for them, for reasons that may include: perceived conflict with masculine identity and power (e.g., school work is feminine, boys should be tough and physical and superior to girls), lack of social status or reward for academics among male peers, the desire to resist to control (or perceived marginalization) by school authority figures, and the perception that school won't concretely benefit them or improve their prospects (e.g., Willis 1977/1981; Morris 2012; Lopez 2003; Epstein 1998; Carter 2005; McLeod 2009).[94]

In Prudence Carter's study of low-income African American and Latino teenagers in Yonkers, New York, the youth described the boy domain of "street smarts" versus the girl domain of "book smarts" (Carter 2005). Street smarts involve standing up for oneself and avoiding others' control. Carter observed different socially sanctioned gender roles, with males embracing rule breaking and viewing education as feminine. She concludes that the intersection of gender, race, and economic conditions influence different achievement patterns.

Edward Morris (2012) conducted an ethnographic study at two low-income high schools, one mostly African American and urban and the other mostly white and rural. He found that peer norms encouraged boys to appear unengaged in school and to avoid working hard to achieve academically. He found that although boys did not devalue test scores and grades, they devalued working hard for academic achievement and following the rules. By contrast, the girls made a conscious choice to try hard in school, a choice they often associated with independence and empowerment. Girls also viewed grades as an opportunity for recognition. Morris observed that in both schools, boys frequently engaged in fighting; however, the schools were not dangerous and the fighting did not dominate the school climate. Rather, fighting was a common rite of passage for boys. "Fighting allows

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[94] Mickelson and Green (2006) used survey data from a representative sample of middle schools in the Charlotte-Mecklenburg, North Carolina school system to investigate sources of gender differences in academic performance among African American middle school students. They found that males were more likely than females to perceive that their friends viewed too much education as conflicting with their authentic identities; this belief predicted lower test scores.

disadvantaged boys to simultaneously achieve recognition, protection, and manhood…while it follows cultural norms about masculinity, such as physical prowess and aggression, it openly defies the norms of the school." (p. 152). Fighting led to suspensions and trouble with school authorities and reduced attachment to school, resulting in lower achievement. Morris concludes that the boys' strategies of pursuing the power of masculinity conflict with successful strategies at school.

Amid popular concerns of a "boy crisis" in education, many sociologists have directed attention to an underlying issue of the social construction of masculinity. Foster, Kimmel, and Skelton (2001) argue: "The real boy crisis is a crisis of violence, about the cultural prescriptions that equate masculinity with the capacity for violence" (p. 16). Traditional notions of masculinity, and to some extent popular culture, promote toughness and physical aggression as a way to assert masculinity and power (Schrock and Schwalbe 2009; Phillips 2007). Although physical aggression and fighting are common among boys, prevalence of fighting is higher among youth from low-income than high-income families (Substance Abuse and Mental Health Services Administration [SAMSA] 2010). Violent behaviors are more prevalent in disadvantaged and dangerous environments and in male cultural environments that reinforce that type of behavior as part of masculine norms and identity (Schrock and Schwalbe 2009). Although toughness and willingness to fight and be violent are part of the repertoire of general masculine norms, this behavior can be accentuated in disadvantaged environments, where boys are exposed to more stress and violence. In more threatening environments, appearing tough may be a strategy to protect personal safety or negotiate race-related stress (Noguera 2003; Thomas and Stevenson 2009). Physical aggression also becomes a more important means to assert power and gain deference when other avenues are less available, such as for low-income and minority males (Schrock and Schwalbe, 2009). Connell argues that there are many different constructions of masculinity, including within a specific institution or cultural setting; however, some forms of masculinity may hold more "cultural authority," visibility, and leadership in a given setting (Connell 1996, p. 209).[95] In school environments in which aggressive behavior is more common, boys may invest less effort in study and have lower educational expectations than in

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[95] Rather than use the concept of "multiple masculinities," Schrock and Schwalbe (2009) prefer the concept of "manhood acts" that reflects men's agency in how they try to achieve dominance and "membership of the dominant gender group." (p. 281). They argue that all "manhood acts" "are aimed at claiming privilege, eliciting deference, and resisting exploitation" (p. 281).

schools in which masculine norms are more compatible with school norms and academic achievement.

Social class, status position, and local conditions influence boys' strategies for action at school. Several scholars have found that minority males in disadvantaged settings may encounter lower expectations and more negative responses from school personnel than black females or white males, which may reduce their educational engagement and expectations (Ferguson 2000 ; Lopez 2003; Wood, Kaplan, and McLoyd 2007; Noguera 2003; Davis 2003). In addition, the consequences of appearing tough or engaging in disruptive behavior at school may be more serious for disadvantaged and minority boys. Some studies reported that minority boys, in particular, are more likely to be viewed as threatening, labeled as "troublemakers" (e.g., Ferguson 2000; Lopez 2003; Davis 2003), and be disciplined and suspended (Skiba et al. 2002) than other youth for the same behavior. For example, based on her in-depth ethnography at a California elementary school, Ferguson observed that unfair and unduly harsh treatment of the African American boys marginalized and alienated them, reinforcing negative stereotypes about black males (Ferguson 2000). Deirdre Royster (2007) argues that "...less affluent black boys' and men's performances of American masculinity norms leave them especially vulnerable to sanction beyond their communities of origin," (p. 154). In a middle-class environment with greater expectations and opportunities, boys' performance of masculinity may elicit different responses and conflict less with an academic orientation.

Research Questions and Hypotheses

In summary, this chapter aims to understand how one dimension of the male climate in school—the concentration of aggressive and violent schoolmates—predicts the educational attainment of African American males and how this interacts with family disadvantage and schoolmate disadvantage.

I hypothesize that attending school with more violent male schoolmates will, on average, be associated with black males' lower educational attainment, net of individual violent behavior and other individual, school, family, and community factors. I expect that the relationship will hold true for boys in general, including white and African American males. Given that black males are exposed to more

disadvantaged neighborhoods and schools, on average, than white males, they are more likely to be

exposed to higher levels of aggressive schoolmates, compounding their disadvantage.

I also hypothesize schoolmate violence will amplify negative effects of individual family

disadvantage and concentrated schoolmate disadvantage on educational attainment of African

American males. As discussed previously, this could happen through a variety of mechanisms,

depending on the local circumstances, school climate, and the severity of the aggressive and violent

behavior.

Methods

Data and Measures

This chapter also uses the National Longitudinal Study of Adolescent Health (Add Health).

For this chapter, I have expanded the sample to include study participants who were in the 7th–10th

grade at Wave I to increase the sample size for increasing the power to detect interactions. (Even

with this larger sample size, there are still some sparsely populated cells at the more extreme values

of the distribution of schoolmate violent behavior.) Note that grade configurations within schools vary;

in the United States, the most common configurations related to grades 7–10 are: K–8, 6–8 (middle

school), 7–9 (traditional junior high school); and 9 or 10–12 (high school).

Dependent Variables

The study outcome is educational attainment at Wave IV, when the sample members are in

their mid- to late 20s. For this chapter, educational outcomes include high school degree completion

(versus a GED or dropping out) and college entry (versus a high school degree). Respondents were

asked (Q. H4ED2), "What is the highest level of education that you have achieved to date?" If

respondents answered "some college," "associates degree," or any higher degree, this was counted

as some college. Vocational or technical training after high school did not count as some college.

Key Independent and Moderating Variable

Median Violent Behavior of Male Schoolmates. The median level of violent behavior of

male schoolmates is an additive index of self-reported violent behavior in the past month or year,

aggregated to the school level. The behavior could have taken place anywhere, i.e., it is not specific

to school. The median schoolmate violent behavior index ranges from 0 to 3, with 3 the highest school median. Below are the survey questions used to construct the index.

The first four items are from the Add Health Delinquency Scale from Wave I in-home questionnaire. (This is based on a sample of students from each school, not a census.) Each item has a range from 0 to 3. Response options for the following items are: (0) never, (1) 1 or 2 times, (2) 3 or 4 times, (3) 5 or more times. (Note that I collapsed the second and third categories to make this response format compatible with other survey items in the index.) "In the past 12 months…"

1) "How often did you get into a serious physical fight?"

2) "How often did you hurt someone badly enough to need bandages or care from a doctor or nurse?"

3) "How often did you use or threaten to use a weapon to get something from someone?"

4) "How often did you take part in a fight where a group of your friends was against another group?"

The following four items are from Wave 1 in-home survey, Section 31 (Violence). Each item has a 0–2 range. Adding these items together created a 0 to 8 scale, where a higher number indicates a higher number of violent activities. "During the past 12 months, how often did each of the following things happen to you?" Answer options: (0) never, (1) once, (2) more than once.

1) "You got into a physical fight"

2) "You pulled a knife or gun on someone"

3) "You shot or stabbed someone"

4) "During the past 30 days, on how many days did you carry a weapon such as a gun, knife or club to school?" Based on the distribution, I collapsed the answer options to 0, 1, and 2 or more days, which provides a compatible scale with the other violence items.

Interaction Variables

I also investigate whether any negative association between median schoolmate violence and educational attainment will be stronger at higher levels of individual family disadvantage and schoolmate disadvantage. These two indices are outlined below.

Family disadvantage index (at the individual level). This chapter uses the same family disadvantage index presented in Chapter 2, described below. Each of these factors relate to children's educational attainment. I combined these items based on their face validity, not because of their correlation. The index has a total of 7 points, with 7 representing the greatest disadvantage.

1) **Parent's education**, based on the education of most highly educated parent, where 3=less than HS, 2=high school degree, 1=some college or equivalent but no degree, and 0=college degree or more.

2) **Poverty status**—Score 2 if household income in the past year (1994) was below the federal poverty threshold or the family received welfare within past month (AFDC, Food Stamps, or housing assistance). Score 1 if household income was between poverty threshold and 150% of poverty threshold. Score 0 if household income was at least 150% of poverty threshold. (Based on parent report.)

3) **Non-intact family**—Score 1 if not living with two biological parents. (Including all types of non-intact family status predicted educational attainment notably more than single-parent status alone.)

4) **Teenage mother**—Score 1 if Add Health participant was born to a teenage mother. (This variable was only computed for youth whose biological mother completed the parent survey.)

Median family disadvantage at the school level. This measures takes the family disadvantage index discussed above and creates a median score for each school to summarize the level of family disadvantage of its students. Hence, the value of family disadvantage varies by school. (This is the same index of median schoolmate disadvantage used in Chapter 3).

Control Variables

As described below, I control for relevant individual, family, school, and neighborhood factors at Wave I to try to address possible biases related to selection into schools and confounding factors.

Individual controls

- Index of individual self-reported violent behavior constructed from adding 8 survey items (same items as school-level index of violent behavior). Range: 0–16 points.

- Picture vocabulary test (PVT). This test measures verbal ability. This is the best available variable to control for a central individual determinant of educational attainment, ability. Although verbal ability is influenced by the quality of the environment, controlling for PVT in the final model is important because individual ability is a significant predictor of educational attainment.

Family control variables

This study includes many control variables to address family selection into schools.

- Individual-level family disadvantage index, discussed above. (This includes poverty/welfare status, parent's education, intact family status, and having had a teenage mother.)

- Parent's selection into schools—If parents' chose the neighborhood they live in because of school quality. This variable is included to try to address parent characteristics that may be associated with school choice.

   "Please tell me whether each of the following statements is true with regard to your present neighborhood:…(H.) You live here because the schools here are better than they are in other neighborhoods." (Parent Survey)

- Parent-child relationship—Parent's perception of getting along well with child:
   "How often would it be true for you to make each of the following statements about (your child)?... You get along well with (him/her)." Answer options: (1) always (2) often (3) sometimes (4) seldom (5) never.

- Parental aspirations for child's education—"How disappointed would you be if {NAME} did not graduate from college? Answer options: (1) very disappointed (2) somewhat disappointed (3) not disappointed.

- Parent born outside of the United States (yes or no). (This includes resident parents and any nonresident biological parents.)

School control variables

- School region (West, Midwest, South, Northeast);

- Type of school (public vs. private);

- School size (small, medium, large);

- Urbanicity (urban, suburban, rural);

- Racial composition (percent minority—black, Hispanic, or Native American).

- Measures of school quality:

  - Percentage of full-time classroom teachers holding master's degrees;

  - Average class size over 30 students.

- Measure of schoolmate disadvantage—School-level family disadvantage index (the index described in Chapter 3 that includes parent's education, poverty status, welfare receipt, non-intact family status, and having had a teenage mother).

In addition, I explore the relationship between median schoolmate violence and students' feeling unsafe at school, because feeling unsafe could be a potential mediator of the relationship between schoolmate violence and educational attainment.

Neighborhood controls

- Census tract poverty rate at Wave I

- Youths' perceived safety in their neighborhood ("Do you usually feel safe in neighborhood?" [yes or no])

- Parents' perception of extent to which drug dealing is a problem in their neighborhood ("In this neighborhood, how big a problem are drug dealers and drug users?")

Analysis Plan

Multivariate logistic models are used to investigate whether median schoolmate violence predicts educational attainment among African American males (additive model) and whether male schoolmate violence interacts with individual family disadvantage and schoolmate disadvantage (multiplicative model) in predicting educational attainment. The analysis also investigates variation in patterns at different levels of median violence and family and schoolmate disadvantage. The unit of analysis is the individual. The school values of the moderating variables are the same for each individual within a school.

I make strategic comparisons with white males, running separate models for black and white males. Progressive levels of educational attainment need to be conditional on achieving the prior level. Therefore, the subpopulation eligible to enter college must have completed either a high school diploma, GED, or certificate of high school completion. Following is an example of the basic equation for the logistic model with the interaction of family disadvantage and schoolmate violence:

$$\text{logit (college entry)} = \alpha + \beta_1 familydisadvantage + \beta_2 schoolmate\ violence +$$
$$\beta_3 familydisadvantage * schoolmate\ violence + \beta controls + \varepsilon$$

All models were statistically adjusted for survey weighting as well as clustering due to the non-independence of children sampled by school; this provides an unbiased estimate. Results are presented in odds ratios and translated into predicted probabilities to help with interpretation. Another benefit of predicted probabilities is that it allows for comparisons across group while avoiding the potential problem of unequal residual variance across groups.

In analyses presented below, cases with missing data (18%) have been deleted. The only items with significant missing are control variables from the parent survey. These include: concern about neighborhood drugs, 9.5% missing; the family disadvantage index, 7.6% missing; getting along with child, 6.8% missing; and parent expectations, 6.8% missing. Parent surveys are more likely to be missing from low SES households. Thus, lower SES youth and adolescents attending more violent schools may be disproportionately dropped, potentially leading to an underestimate of the results.

<center>**Results**</center>

Descriptive Results

Tables 4.1–4.2 present the distribution of median schoolmate violent behavior for black and white males. Black males most commonly attend schools with a median schoolmate violence score of 1 (36%) or 2 (35%); for white males, the modal score is 1 (46%). Fifty-eight percent of black males and 30% of white males attend a school with the median score of 2 or 3. The largest contrast between black and white males occurs at either extreme of the distribution. Nearly a quarter of white males attend schools with 0 median violence score, in contrast to 6% of black males; nearly one-quarter of black males attend schools with a median violence score of 3, compared with 4% of white males.

This also has implications for the analysis. Because so few white males attend schools with the highest level of median schoolmate violence, statistical power will be very limited for making comparisons with black males in the most disadvantaged category. Stronger comparisons can be made toward the middle ranges of the values.

Table 4.1. Distribution of Median Schoolmate Violence—Black Males in 7th–10th Grade

Median Schoolmate Violence	Distribution of Schools	Distribution of Students (Unweighted)	Weighted Percentage of Students
0	12	49	.06
1	38	343	.36
2	26	241	.35
3	7	80	.23
Total	83	713	1.0

Note: for the sample eligible to enter college, conditional on completing high school or GED, the sample size decreases to 635 black male students in 82 schools.

Table 4.2. Distribution of Median Schoolmate Violence—White Males in 7th–10th Grade

Median Schoolmate Violence	Number of Schools	Number of Students (Unweighted)	Weighted Percentage of Students
0	28	505	.24
1	56	1125	.46
2	31	424	.26
3	6	56	.04
Total	121	2110	1.0

Note: for the sample eligible to enter college, conditional on completing high school or GED, the sample size decreases to 1,962 white male students in 120 schools.

<center>111</center>

Tables 4.3–4.6 present unweighted [96] cross-tabulations for different levels of median

schoolmate violence tabulated with different levels of (a) family disadvantage and (b) schoolmate

disadvantage. This provides information on the sample distributions for the interactions that will be

investigated. The cross-tabulations also reveal that certain patterns tend to go together. For example,

Tables 4.5 and 4.6 show that schools with the lowest schoolmate family disadvantage (0) also have

lowest levels of median schoolmate violence (0). On the other end, schools with the highest level of

schoolmate disadvantage have at least moderate to high levels of schoolmate violence. Thus, in

schools with the highest median schoolmate disadvantage, there are no schools with low levels of

median violence to compare with for educational outcomes. (The analysis can only investigate the

range of distribution of the data.) The sample size in individual cells can get small at the more

extreme ends of the distribution. For example, there are only 9 white males attending schools with the

highest level of median schoolmate disadvantage and 8 white males in families with the highest levels

of family disadvantage.

Table 4.3. Cross-Tabulation: Individual Family Disadvantage and Median Schoolmate Violence—
Black Males in 7th–10th Grade (Unweighted)

Median Schoolmate Violence	Family Disadvantage Index Score								
	0	1	2	3	4	5	6	7	Total
0	3	15	9	7	8	6	1	0	49
1	41	82	59	48	46	40	20	7	343
2	36	46	45	35	30	28	17	4	241
3	5	6	14	10	14	17	10	4	80
Total	85	149	127	100	98	9	48	15	713
Correlation: .11									

Table 4.4. Cross-Tabulation: Individual Family Disadvantage and Median Schoolmate Violence—White Males in 7th–10th Grade (Unweighted)

Median Schoolmate Violence	Family Disadvantage Index Score								
	0	1	2	3	4	5	6	7	Total
0	142	150	106	56	29	12	9	1	505
1	272	291	243	132	99	59	24	5	1,125
2	72	112	89	72	42	19	16	2	424
3	14	12	10	8	4	5	3	0	56
Total	500	565	448	268	174	95	52	8	2,110
Correlation: .11									

Table 4.5. Cross-Tabulation: Median Schoolmate Disadvantage and Median Schoolmate Violence—Black Males in 7th–10th Grade (Unweighted)

Median Schoolmate Violence	Median Schoolmate Disadvantage Index Score						
	0	1	2	3	4	5	Total
0	7	13	29	0	0	0	49
1	0	78	144	53	68	0	343
2	0	30	97	40	52	22	241
3	0	13	4	35	0	28	80
Total	7	134	274	128	120	50	713
Correlation: .42							

Table 4.6. Cross-Tabulation: Median Schoolmate Disadvantage and Median Schoolmate Violence—White Males in 7th–10th Grade (Unweighted)

Median Schoolmate Violence	Median Schoolmate Disadvantage Index Score						
	0	1	2	3	4	5	Total
0	45	262	156	25	17	0	505
1	0	362	621	119	23	0	1,125
2	0	95	181	121	25	2	424
3	0	14	22	13	0	7	56
Total	45	733	980	278	65	9	2110
Correlation: .38							

Correlations

Among black males, schoolmate median violence is more negatively correlated to college entry[97] than to high school degree completion (corr=-.23 vs. -.14). Schoolmate median violence shows approximately the same correlation for the outcome of college entry as does individual violence (corr.=-.25) for this group.

White males show the reverse pattern: Correlations between median schoolmate violence and educational attainment are slightly stronger for high school degree completion than college entry (corr=-.11 for high school degree and -.08 for college entry, conditional on completing high school). The lower correlations among white males may be influenced by the very small percentage of white males who are in schools with the highest level of median schoolmate violence.

Median schoolmate violence has a .42 correlation with median schoolmate disadvantage among black males and .38 correlation among white males. After schoolmate disadvantage, the factor most correlated with median schoolmate violence is percentage minority (corr=.29 among black males and .38 among white males). Urbanicity is moderately correlated with median schoolmate violence among white males, with no correlation among black males (corr=.34 vs. .02). Individual family disadvantage shows a much weaker correlation to median schoolmate violence, .11 among both black and white males. Among black but not white males, individual family disadvantage is the variable most correlated to individual violence (corr=.23 vs. .11 for white males).

Perceived safety at school

There is no correlation between the median schoolmate violence score and feeling unsafe at school among black males (corr=-.02) and a very weak correlation among white males (corr=.12). Because schoolmate violent behavior shows little relationship to feeling unsafe at school, for most of these boys, feeling unsafe at school is not likely to be the primary mechanism through which schoolmate violent behavior affects educational attainment. Note that the violence measure in this study is more heavily weighted toward fighting than the most serious violence, which occurs less often. In addition, this study measures schoolmate violent behavior in general, not specifically at

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[97]Conditional on completing high school.

school. Most schools are able to maintain a reasonably safe environment. It's also possible that these youth may feel unsafe outside of school.

Among black males, there is a weak correlation between feeling unsafe at school and feeling safe in the neighborhood, corr=-.12; the correlation was relatively higher for white males, but still very modest: -.24. Feeling unsafe at school is not correlated with schoolmate disadvantage among black males, corr=.01, and only weakly correlated among white males, corr=.11. Feeling unsafe at school shows a .21 correlation with individual violent behavior among white males, but no relationship among black males, corr=.04. Among black males, the single item most strongly correlated with feeling unsafe at school is percentage of teacher's with a master's degree, which is mildly negatively correlated, -.14.

Regression Models

Main (Additive) Effects Models

High school graduation

Table 4.7 presents results of multivariate logistic regression models in which median schoolmate violent behavior predicts high school graduation among black and white males in the 7th–10th grade. Among black males, in a bivariate model (not shown), having a median schoolmate violence score of 3 vs. 0–1 is associated with a 77% decline in the odds of graduating high school (OR=.33, p=.00). In the full model, the relationship between median schoolmate violence and high school graduation is no longer statistically significant, after accounting for individual violence and other individual, family, school, peer, and community factors.[98]

Among white males, having a median schoolmate violence score of 2 versus 0–1 is associated with a 39% decrease in the odds of graduating from high school (OR=.61, p=.03). But change in predicted probability is very modest, from .87 to .82. Although negative in direction, there is no significant relationship between level 3 schoolmate violence and high school graduation among white males (OR=.81, p=.62). Few white males, however, attend schools with level 3 median schoolmate violence, so the sample size is small for this group.

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[98]For median violence score of 2 v. 0–1, OR=.73, p=.40; for median violence score of 3, OR=.89, p=.84.

Table 4.7. Schoolmate Median Violent Behavior Predicting High School Degree Completion (Logistic Regression Models)

Variable	Black Males		White Males	
	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval
Schoolmate median violence=2 (Ref=0-1)	.73	.35, 1.52	.61*	.38, .96
Schoolmate median violence=3 (Ref=0-1)	.89	.27, 2.89	.81	.35, 1.85
Individual violence index	.89**	.82, .96	.83***	.77, .90
School median family disadvantage index	.60**	.43, .82	.87	.66, 1.15
Individual family disadvantage index	.87	.74, 1.04	.64***	.58, .72
Immigrant parents	.55	.17, 1.83	1.18	.43, 3.22
Parents chose neighborhood for schools	.52*	.29, .94	1.16	.81, 1.65
Parent-child get along (reverse coded)	.65**	.49, .87	.77†	.58, 1.03
Parent college expectations (reverse coded)	.70*	.52, .96	.77†	.59, 1.01
Peabody Vocabulary Test Score	1.02†	1.00, 1.05	1.05***	1.03, 1.06
Public school (vs. private)	.85	.13, 5.75	.34*	.14, .80
School size=2 (1= Reference)	1.82	.74, 4.49	.74	.45, 1.21
School size=3 (1=Reference)	1.23	.36, 4.19	.74	.39, 1.41
Urban (vs. surburban)	.79	.31, 2.03	1.54	.82, 2.92
Rural (vs. suburban)	1.72	.79, 3.73	.99	.59, 1.67
Class size >30	.55	.12, 2.62	.65	.30, 1.39
% Teachers with master's degree	.93	.16, 5.49	2.86*	1.23, 6.62
% Minority students	3.04	.69, 13.40	.53	.13, 2.26
Southern region (West=Reference)	.07***	.02, .32	.62	.28, 1.35
Midwestern region (West=Reference)	.11*	.02, .77	.53	.24, 1.14
Northeastern region (West=Reference)	.12†	.02, 1.03	1.00	.46, 2.19
Census tract poverty rate	.69	.13, 3.58	3.27	.18, 60.70
Usually feel safe in neighborhood (student)	.48†	.21, 1.07	.92	.46, 1.83
Drug problem in neighborhood (parent)	.57**	.40, .82	.75*	.58, .96
Constant	695***	26.6, 18,130	4.82	.70, 33.30
Observations	713		2110	

*** p<0.001, ** p<0.01, * p<0.05, † p<0.10

For both black and white males, individual violence predicts lower odds of graduating from high school. Each point increase on the individual violence scale is associated with an 11% decline in the odds of completing high school among black males (OR=.89, p=.004) and a 17% decline among white males (OR=.83, p=.000).

College entry

Table 4.8 presents results of logistic regression models for the outcome of college entry, conditional on completing a high school degree or equivalent. Among black males, attending school with boys who engage in relatively high levels of physically aggressive and violent behavior is negatively associated with the outcome of college entry, after accounting for their own violent behavior and other individual, family, school, and community covariates. For black males in schools with the highest median level of schoolmate violent behavior (3 versus 0–1), the odds of college entry decrease by 79% (OR=.21, p=001). The predicted probability of entering college decreases from .56 to .29 as median schoolmate violence increases from 0–1 to 3. Although negative in direction, the relationship is not statistically significant for level 2 median schoolmate violence compared with level 0–1.

Among white males, there is no statistically significant relationship between median schoolmate violence and college entry, conditional on completing high school or equivalent. The relationship approaches significance for the highest level of violence (level 3 vs. 0–1), (OR =.52, p=.19), but the sample is very small for the highest level of schoolmate violence. The predicted probability of entering college decreases from .68 at level 0–1 violence to .56 at level 3 violence.

For both black and white males, their own violent behavior (individual level) is associated with lower odds of entering college, conditional on completing high school or equivalent. In addition, each point increase on the individual violence scale is associated with a 15% decline in the odds of entering college among black males (OR=.85, p=.000) and a 14% decline among white males (OR=.86, p=.000).

Table 4.8. Schoolmate Median Violent Behavior Predicting College Entry (Logistic Regression Models)

	Black Males		White Males	
		95% Confidence		95% Confidence
Variable	Odds Ratio	Interval	Odds Ratio	Interval
Schoolmate median violence=2 (Ref=0-1)	.87	.48, 1.58	.87	.61, 1.25
Schoolmate median violence=3 (Ref=0-1)	.21**	.08, .53	.52	.19, 1.39
Individual violence index	.85***	.78, .93	.86***	.81, .92
School median family disadvantage index	.77	.53, 1.13	.75*	.59, .95
Individual family disadvantage index	.68***	.56, .82	.67***	.60, .75
Immigrant parents	.60	.21, 1.75	.55*	.31, .99
Parents chose neighborhood for schools	1.31	.71, 2.43	1.40*	1.01, 1.94
Parent-child get along (reverse coded)	.79	.54, 1.15	.82	.64, 1.05
Parent college expectations (reverse coded)	.83	.55, 1.26	.60***	.50, .72
Peabody Vocabulary Test Score	1.03**	1.01, 1.05	1.04***	1.03, 1.06
Public school (vs. private)	1.18	.46, 3.00	.69	.34, 1.41
School size=2 (1= Reference)	.51	.22, 1.23	1.04	.59, 1.82
School size=3 (1=Reference)	.87	.35, 2.19	1.26	.70, 2.29
Urban (vs. surburban)	.68	.37, 1.26	1.18	.80, 1.75
Rural (vs. suburban)	.45†	.20, 1.02	1.09	.71, 1.67
Class size >30	.90	.32, 2.53	1.33	.80, 2.20
% Teachers with master's degree	.42	.13, 1.39	1.50	.90, 2.48
% Minority students	1.76	.56, 5.61	1.04	.35, 3.11
Southern region (West=Reference)	1.26	.31, 5.23	1.41	.85, 2.35
Midwestern region (West=Reference)	3.64	.56, 23.83	1.00	.61, 1.64
Northeastern region (West=Reference)	1.39	.25, 7.70	1.26	.80, 1.99
Census tract poverty rate	.33	.06, 1.93	1.49	.23, 9.54
Usually feel safe in neighborhood (student)	1.42	.65, 3.07	.63	.29, 1.41
Drug problem in neighborhood (parent)	.94	.66, 1.35	1.09	.89, 1.33
Constant	1.87	.14, 25.44	.52	.07, 3.66
Observations	635		1962	

*** p<0.001, ** p<0.01, * p<0.05, † p<0.10

Interaction of Schoolmate Violence with Other Disadvantages

This section explores possible interactions of median schoolmate violent behavior with median schoolmate family disadvantage (macro-level interaction) and with individual-level family disadvantage (micro-macro interaction). Does the relationship between schoolmate violence and educational attainment intensify in the presence of these other disadvantages? Whereas the previous models examined additive relationships between schoolmate violence and educational attainment,

this section will examine multiplicative relationships. Table 4.9 at the end of this section presents the statistical results from the Wald tests of interactions.
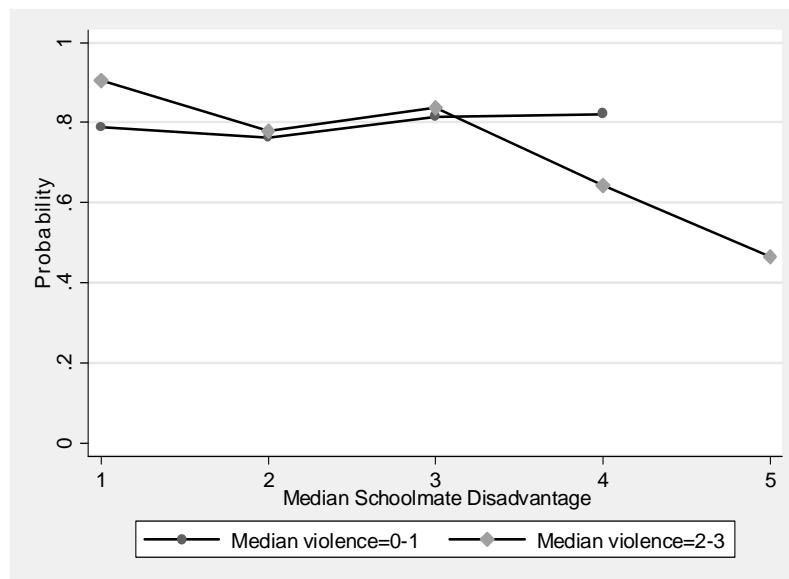
A. Schoolmate median violence and schoolmate family disadvantage

Black males

Among 7th–10th grade black males, the relationship of median schoolmate violence to high school graduation and college entry depends on the level of schoolmate disadvantage. This interaction appears to be stronger and more consistent for college entry, given available data.

For the outcome of high school graduation among black males, higher levels of schoolmate violence (level 2–3 vs. 0–1) negatively interact with high levels of median schoolmate disadvantage (level 4–5 vs. <4), (F=14.32, p=.00), controlling for all covariates. Translating these regression results into predicted probabilities, black males attending schools with only one of these negative factors has a .82–.83 predicted probability of graduating; however, the predicted probability of graduating declines to .54 when median schoolmate disadvantage and violent behavior are both relatively high.[99]

Figure 4.2. Black males—predicted probabilities of high school graduation. Interaction of schoolmate violence and schoolmate disadvantage.


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[99] These results are based on patterns for 120 boys in schools with level 4 schoolmate disadvantage, comparing 68 of these boys in schools with median level of 1 schoolmate violence with 52 boys in schools with median level of violence. All of the black males in schools with the highest level of median schoolmate disadvantage, level 5, also had relatively high schoolmate violence, level 2–3; thus, there were no black males to compare with in cells with lower levels of median schoolmate violence.

Figure 4.2 graphically depicts the predicted probabilities of high school graduation for this interaction of low vs. higher schoolmate violence at different levels of schoolmate disadvantage. As displayed in Figure 4.2, a stronger negative association becomes apparent at higher levels of schoolmate disadvantage, level 4; however, data are sparse at level 5 schoolmate disadvantage.

Interaction results are sharply negative for the outcome of college entry, conditional on completing high school or equivalent. Among black males, high median schoolmate violence (level 3 vs. 0–1) interacts very negatively with moderate to high levels of schoolmate disadvantage (3–5 vs. <3), with significant Wald test for interaction ($F=7.68$, $p=.01$). This negative interaction becomes clear at level 3 schoolmate disadvantage. Translating regression results into predicted probabilities, black males attending schools with moderate to high schoolmate disadvantage but low schoolmate violence, have a .62 predicted probability of entering college. If this schoolmate disadvantage is coupled with high schoolmate violence, the predicted probability of entering college drops to .21. Figure 4.3 graphically displays this relationship.

Figure 4.3. Black males—predicted probabilities of college entry. Interaction of schoolmate violence and schoolmate disadvantage.
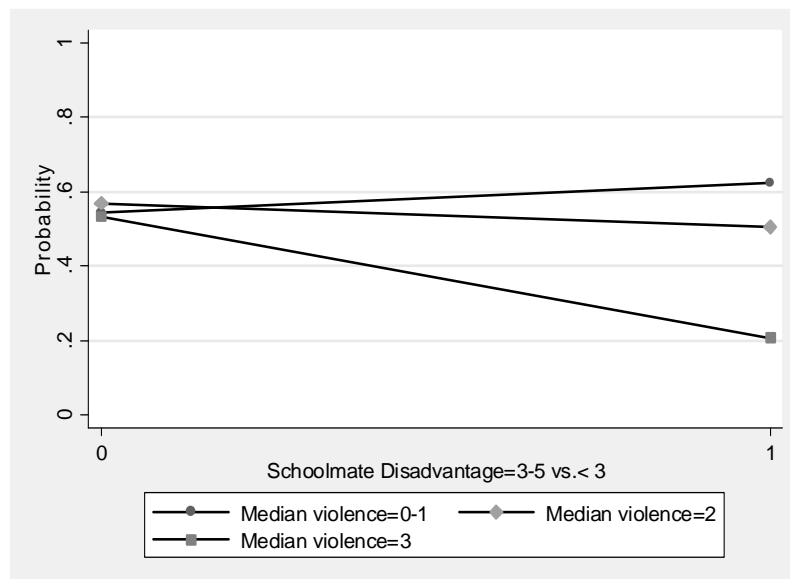
White males

Among white males, the relationship between schoolmate violence and high school degree completion depends on the level of schoolmate disadvantage. For college entry, the relationship is in a similar direction, but it does not reach statistical significance. (See Table 4.9.)

Specifically, white males attending schools with higher median schoolmate violence of 2–3 (vs. 0–1) show a negative relationship to educational attainment when there is moderate to high median schoolmate disadvantage (3–5 vs. <3); (F=3.45, p=.07). Translating the regression models into predicted probabilities, white males attending schools with either of these disadvantages have a .87–.90 predicted probability of graduating high school. White males attending schools with both of these disadvantages have a .76 predicted probability of graduating. Figure 4.4 illustrates this relationship graphically. The relationship is modest within the available range of data.

Figure 4.4. White males—predicted probabilities of high school graduation. Interaction of schoolmate violence and schoolmate disadvantage.
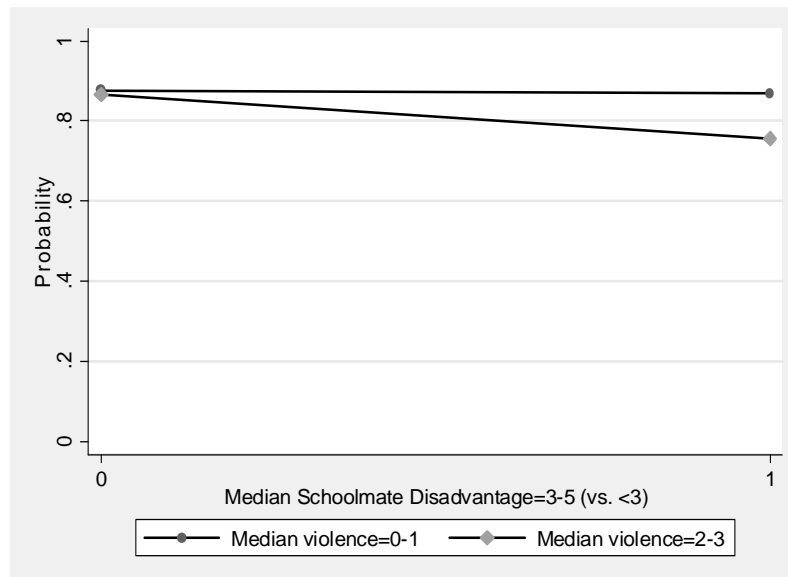

B. Schoolmate median violence and Individual level family disadvantage

Black males

For the outcome of high school graduation, there is a statistically significant, though modest, negative interaction between higher levels of family disadvantage (5–7 vs. <5) and the highest median schoolmate violence (3 vs. <3); (F=4.30, p=.04). Translating this into predicted probabilities,

the predicted probability of graduating high school goes from .71 for black males from disadvantaged families (score of 4–7) to .62 when these youth attend school with more violent schoolmates. Figure 4.5 below displays predicted probabilities graphically. Note that higher schoolmate violence negatively predicts high school graduation only when family disadvantage is high; note the crossover pattern.

Figure 4.5. Black males—predicted probabilities of high school graduation. Interaction of schoolmate violence and family disadvantage.
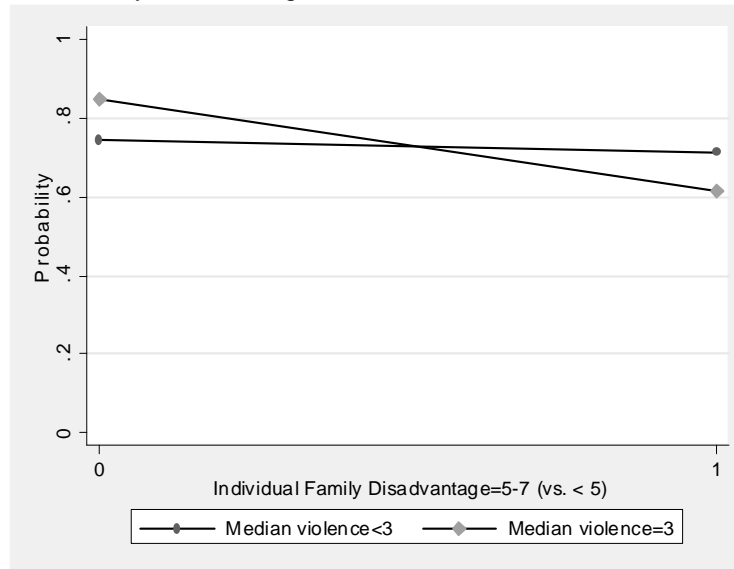
For the outcome of college entry, conditional on completing high school, the relationship is in a similar negative direction but is not statistically significant (F=1.57, p=.21).[100] The sample size limits precision for this analysis: 119 black males have high family disadvantage (score of 5–7) but only 16 of these youth attend schools with the highest level of median schoolmate violence (level 3).

White males

Among white males, there is a significant negative interaction between high median schoolmate violence (3 vs. < 3) and high family disadvantage for the outcome of high school degree completion. For the outcome of college entry, the relationship exhibits a similar negative direction but does not quite reach statistical significance.

For high school degree completion, white males from highly disadvantaged families (5–7 vs. < 5) show steep declines in their likelihood of completing high school if median schoolmate violence is

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[100] This model interacts level 5–7 family disadvantage with high median schoolmate violence (level 3 vs. <3).

also high (3 vs. 0–1); (F=3.13, p=.08 for the Wald test for interaction). However, of the 155 white males from highly disadvantaged families, only 8 attend schools with high median schoolmate violence (level 3), therefore statistical precision is limited. The predicted probability of graduating high school among youth from disadvantaged families with low median schoolmate violence is .77; this probability drops to .53 when median schoolmate violence is also high (level 3). Figure 4.6 graphically illustrates the patterns of relationship in terms of predicted probabilities. As family disadvantage increases, having more violent schoolmates (median of 3) displays a more negative relationship to graduation (compared with have less violent schoolmates).

Figure 4.6. White males—predicted probabilities of high school graduation. Interaction of schoolmate violence and family disadvantage.
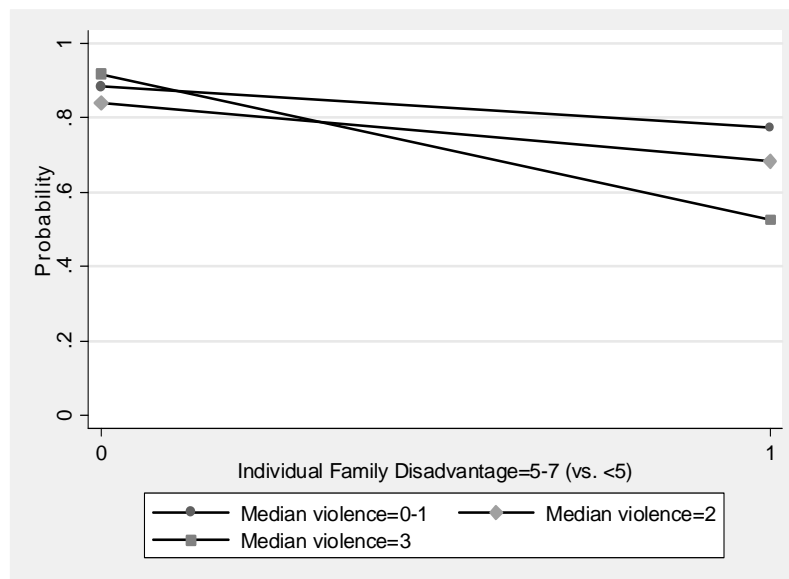

Table 4.9 summarizes all of the results of the Wald tests of interactions.

Table 4.9. Summary of Results of Wald Tests of Interactions

Interaction of Median Schoolmate Violence and Schoolmate Family Disadvantage			
	Interaction Measure	F(1,128)	P-Value
Black Males			
High School Degree	Schoolmate violence (2-3 vs. 0-1) x Schoolmate disadvantage(4-5 vs. <4)	14.32	.000
College Entry	Schoolmate violence (3 vs. 0-1) x Schoolmate disadvantage(3-5 vs. <3)	7.68	.006
White Males			
High School Degree	Schoolmate violence (2-3 vs. 0-1) x Schoolmate disadvantage(3-5 vs. <3)	3.45	.065
College Entry	Schoolmate violence (2-3 vs. 0-1) x Schoolmate disadvantage(4-5 vs. <4)	1.81	.181
Interaction of Median Schoolmate Violence and Individual Family Disadvantage			
	Interaction Measure	F(1,128)	P-Value
Black Males			
High School Degree	Schoolmate violence (3 vs. 0-2) x Individual family disadvantage(5-7 vs. <5)	4.30	.040
College Entry	Schoolmate violence (3 vs. 0-2) x Individual family disadvantage(5-7 vs. <5)	1.57	.212
White Males			
High School Degree	Schoolmate violence (3 vs. 0-2) x Individual family disadvantage(5-7 vs. <5)	3.13	.079
College Entry	Schoolmate violence (3 vs. 0-2) x Individual family disadvantage(4-7 vs. <4)	2.13	.147

Discussion

Summary of Results

Among black males in 7th–10th grade, there is a strong and consistent negative relationship (main effect) between median schoolmate violence and college entry, conditional on completing high school or equivalent.

The relationship between median schoolmate violence and educational attainment also depends on the presence of other disadvantages. The interaction results are strongest at the macro level, when schoolmate violent behavior combines with schoolmate disadvantage. When a significant proportion of schoolmates come from disadvantaged family backgrounds, then their violent behavior reduces the likelihood of high school graduation and college entry among black males. Together, these two characteristics of the peer environment amplify educational risk for black males. When schoolmates are not disadvantaged, their aggressive and violent behavior does not, on average, predict lower educational attainment for black males.

In addition, having a higher prevalence of violent schoolmates decreases the likelihood of high school graduation when black males come from disadvantaged families but not otherwise. Black

males show more sensitivity for the outcome of college entry. Having more violent schoolmates reduces the likelihood of college entry among black males at every level of family background. The results suggest that this negative relationship intensifies as family disadvantage increases among black males. In summary, attending school with more aggressive and violent schoolmates accentuates other disadvantages commonly experienced by black males—in particular, attending schools with high concentrations of disadvantaged peers.

To have a point of reference, this study also examines patterns among white males. Because the distributions of schoolmate violence, schoolmate disadvantage, and family disadvantage differ considerably between black and white males, comparisons are generally not equivalent. However, I did find a very modest negative relationship between moderate levels of median schoolmate violence (2 vs. 0–1) and high school graduation. Data are too sparse to properly assess the relationship for high levels of schoolmate violent behavior with only 4% of the white males attending schools that possess this level of median schoolmate violence. Among white males, higher median schoolmate violence interacted with schoolmate disadvantage and individual family disadvantage in predicting a lower likelihood of completing high school. (Sparse distribution of the data limited the ability to test for interactions for the outcome of college entry.) As with black males, higher median schoolmate violent behavior reduces the likelihood of high school graduation only if other disadvantages are present, specifically individual family disadvantage and concentrated schoolmate family disadvantage.

Study Limitations

Although the study has the strength of a longitudinal design, as an observational study of school effects, challenges include potential biases due to selection and confounding. To address selection into schools, the study controlled for factors associated with parental school choice; I also controlled for measures of each student's cognitive ability and violent behavior.

To avoid confounding with other school factors, the analytic models control for several dimensions of schoolmate family background and many other factors associated with school quality and educational outcomes.[101] Another potential concern is confounding of schoolmate violent

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[101] Although I control for many factors related to teaching quality, I am not able to directly control for teaching quality; however, reduced teaching quality may be one of many ways in which schoolmate aggressive behavior

behavior with the effect of neighborhood disadvantage and violence. Although I do not have a direct measure of neighborhood violence, I was able to control for several variables related to neighborhood violence.[102] I controlled for the extent to which the students feel safe in their neighborhood and parent's perception of the extent to which drugs are a problem in the neighborhood. In addition, I controlled for census tract poverty rate. High-violence neighborhoods also have high levels of poverty.

Other research suggests that patterns of school violence are distinct from neighborhood violence. In her study of school violence and achievement in Chicago high schools, Burdick-Will (2013) found a low association between neighborhood violent crime and school violent crime. Schools with low violence were closely interspersed with many of the schools with the highest violence, drawing from the same neighborhood. In addition, neighborhood fixed-effects models, controlling for neighborhood violent crime, did not alter the negative relationship between school violence and achievement (test scores) in her study.

Another limitation is that the distribution of the data sometimes limited the range of values that could be examined, especially for white males, who had less exposure to the most disadvantaged circumstances. Finally, this study does not examine possible heterogeneity of patterns based on the type and severity of violent behavior.

Contribution and Future Research

This study adds to our understanding of how boys' exposure to aggressive and violent school peer environments in early to mid-adolescence relates to a central developmental and life-course outcome, educational attainment. Chapter 3 showed how concentrated schoolmate disadvantage is a strong negative factor in the educational attainment of black males. This chapter illustrates how disadvantages tend to cluster, in that schools with high concentrations of disadvantage are also more likely to have youth with aggressive and violent behavior. This creates a negative academic environment for boys, in particular disadvantaged and minority boys who are more likely to come from

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contributes to lower educational outcomes for boys. The relationship may be to some extent reciprocal: Teaching quality may also affect problem behavior in school and how well the classroom is managed.

[102] Controlling for violent crime rate at the county level did not change results for black males; however, this variable was missing for a significant number of the white males. In addition, county level violent crime rate is not sufficiently precise to reflect variations in violent crime in different neighborhoods.

low-income families and attend lower-quality schools with other disadvantaged youth. Exposure to a higher concentration of aggressive boys is one way in which concentrated schoolmate disadvantage can negatively affect African American males.

This study also adds to the developmental literature related to cumulative risk and how detrimental social conditions can interact to accentuate risk. Attending school with more aggressive and violent boys shows a significant negative additive relationship to educational attainment among both black and white males; this negative risk is multiplied in the presence of other disadvantages: individual family disadvantage and school environments with high concentration of disadvantaged peers. These results are consistent with some studies that have identified negative interactions among risk factors among disadvantaged children. For example, in a study of cumulative neighborhood disadvantage in childhood, Wheaton and Clarke (2003) revealed a more negative effect on externalizing problems in adolescence and young adulthood among individuals from lower SES backgrounds (with less-educated parents). They argued that to understand the effects of individual-level social class, we need to consider "the interdependence between individual and contextual components of social class…individual and aggregate sources of variation in socioeconomic status must be considered jointly" (p. 702).

Because black males have relatively high exposure to all of these sources of disadvantage— family disadvantage, concentrated schoolmate disadvantage, and aggressive schoolmates— exposure to schoolmate aggression and violence poses a relatively larger risk to their educational attainment at the population level. Compound disadvantages early in life contribute to growing inequality over the life course. At the macro-level school environment, the combination of concentrated schoolmate disadvantage and schoolmate aggression can create a deleterious academic environment for black males in particular.

Our understanding of these findings can be expanded by investigating mechanisms through which schoolmate aggressive behavior may affect educational attainment and how patterns operate over time. It would also be helpful to extend this work to additional populations such as Hispanic males, who also have relatively high exposure to disadvantaged school environments. Also, what impact does this type of school climate have for girls? More research would be beneficial in

identifying successful strategies to improve school climates in these high-risk environments as well as

population-level strategies to reduce aggression and violence among boys.

CHAPTER 5. CONCLUSION

Countless studies have demonstrated that children exposed to disadvantaged families and disadvantaged schools are at risk for low educational attainment. My dissertation shows the importance of looking at the interplay of race and gender in influencing these relationships. For black males, race and gender accentuate the negative relationship of family disadvantage and schoolmate disadvantage to educational attainment. Exposure to cumulative family disadvantage and concentrated schoolmate disadvantage also interact to create compound disadvantage for their educational attainment.

In this concluding section, I summarize the most significant results of the three empirical chapters. Then I discuss the significance of this research for developmental science and for social stratification in relation to race and gender gaps in educational attainment. Finally, I also discuss how this research points to possible directions for future research, both for my work and the field.

Summary

Using the National Longitudinal Study of Adolescent Health, this dissertation investigates the relationships among family disadvantage, school context, and educational attainment among African American males. Chapter 2, the first empirical chapter, begins with the most proximal and important ecological context for children, the family. This chapter demonstrates how the intersection of multiple status configurations in early adolescence—race, gender, and family disadvantage—is associated with educational attainment. High levels of family disadvantage show a more negative relationship to college entry among black males than among black females and white youth (net of cognitive ability, other family factors, and schoolmate socioeconomic status). Among black males in the 7th–8th grade, the predicted probability of entering college steadily declines toward 0 as cumulative family disadvantage becomes high.[103] Chapter 2 also reveals how gender patterns can differ depending on the educational outcome. The relationship of cumulative family disadvantage to high school

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[103] In the model with full controls, the predicted probability that black males will enter college falls from .71 at 0 disadvantages, to .37 with a score of 4, and .09 with a score of 6-7.

graduation—strongly negative—does not substantially differ by gender, after accounting for cognitive ability and schoolmate socioeconomic status in the final models. By contrast, race and gender patterns diverge for college entry. Although black youth show a substantial gender gap in predicted probability of college entry at every level of family disadvantage, the gap increases dramatically at high levels of family disadvantage. Among white youth, the gender gap in predicted probability of entering college is more modest until high levels of family disadvantage, where the gender gap is still smaller in magnitude than among blacks.

Nearly 40% of African American youth studied have high cumulative family disadvantage, compared with 9% of white youth. Thus, at a population level, cumulative family disadvantage has a disproportionately large effect on African Americans. Moreover, among African American males, race and gender status compound the negative relation between cumulative family disadvantage and college entry.

Chapter 3 moves the reader from the family environment to the school environment, the next most proximate context for children's development. This chapter focuses on the role of schoolmate disadvantage. Among black males, the concentration of schoolmate disadvantage shows a strongly negative relationship to both high school degree completion and college entry. The results are most negative for college entry. Among black females, concentrated schoolmate disadvantage shows no significant relationship to high school degree completion (although these results do not statistically differ from black males). Consistent with black males, highly concentrated schoolmate disadvantage reduces the likelihood of college entry among black females; however, the relationship appears to be more detrimental for black males. Among black males only, individual family disadvantage is no longer significant in predicting high school graduation in the final models, in which schoolmate disadvantage, census tract poverty rate, mother-child relationship, and region are the most significant predictors of high school graduation among black males. The results in Chapter 3 also highlight the importance of the quality of the mother-son relationship in predicting high school graduation among black males.

The findings in Chapter 3 are consistent with growing research that suggests that within the same disadvantaged neighborhoods and schools, adolescent boys and girls may be experiencing a

different environment in ways that matter for developmental and educational outcomes. The findings of this chapter also echo patterns identified in the neighborhood effects literature. Recent quasi-experimental research among 5th graders in Berlin found that boys' performance in school is more sensitive than girls to peer socioeconomic composition of the school (Legewie and DiPrete 2012). Schoolmates are an important component of the school environment, contributing to gender and race-gender variation in educational attainment.

Chapter 4 aims to unravel dimensions of the schoolmate environment that may matter differentially by gender, focusing on schoolmate aggression and violence. Consistent with the life-course and ecological models, this chapter also investigates interdependencies of the micro and macro environments—family background and school climate. This chapter adds to the developmental literature related to cumulative risk and how detrimental social conditions can interact to accentuate risk. Attending school with more aggressive and violent boys shows a significant negative additive relationship to educational attainment among both black and white males; this negative risk is multiplied in the presence of other disadvantages: individual family disadvantage and school environments with high concentration of disadvantaged peers.

Among black males in 7th–10th grade, there is a strong and consistent negative relationship (main effect) between median schoolmate violence and college entry, net of individual violence and other individual, family, school, and neighborhood factors. The relationship between median schoolmate violence and educational attainment also depends on the presence of other disadvantages. The interaction results are strongest at the macro level, when schoolmate violent behavior combines with schoolmate disadvantage. When a significant proportion of schoolmates come from disadvantaged family backgrounds (cumulative disadvantage index), then schoolmate violence reduces the odds of high school graduation and college entry among black males. When schoolmates are not disadvantaged, their aggressive and violent behavior does not, on average, predict lower educational attainment among black males. In addition, attending school with more violent schoolmates reduces the likelihood of high school graduation when black males themselves come from disadvantaged families but not when they have low family disadvantage. Although the relationships are in a consistent direction for white males, comparisons are not equivalent because

the distributions of schoolmate violence, schoolmate disadvantage, and family disadvantage differ considerably between black and white males.

This chapter illustrates how disadvantages tend to cluster, in that schools with high concentrations of disadvantaged youth are also more likely to have boys with aggressive and violent behavior. Together, these two characteristics of the peer environment amplify educational risk for boys. This creates a negative academic environment for boys, in particular socioeconomically disadvantaged and African American boys, who are more likely to attend lower-quality schools with other disadvantaged youth. Exposure to a higher concentration of aggressive boys is one way in which concentrated schoolmate disadvantage can negatively affect the educational attainment of African American males.

Significance

My dissertation draws from the life-course perspective (Elder 1974/1999) and the ecological model of human development (Bronfenbrenner 1979, 1994) to understand how disadvantaged family and school contexts in early to middle adolescence influence educational attainment among African American males. Early to middle adolescence is a critical time of transition both developmentally and academically, setting the stage for high school and higher education. This is also the period when disadvantaged youth begin to assess their prospects and lower their educational expectations (Jacob and Linkow 2011).

According to both ecological and life-course models, human development occurs through a process of dynamic interaction between individuals and their social context over time. My dissertation is premised on the interdependence of two primary developmental contexts—the family and the school—and how they individually and jointly contribute to educational attainment. Consistent with the ecological model, this dissertation employs the concept of cumulative risk (Rutter 1979) to understand how multiple disadvantages in family and school relate to educational attainment. Each chapter attempts to uncover particular patterns and dynamics associated with the educational attainment of disadvantaged black males by investigating family and school domains and their interrelationships.

In addition to trying to understand the multiple dimensions of the environment, this research considers the importance of multiple dimensions of social status and identity simultaneously. Ever

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since the early status attainment research, social scientists have documented the importance of family socioeconomic status in educational achievement. Decades of research have also focused on the black-white achievement gap. Recently, more scholarly attention has turned to gender gaps in educational achievement and attainment. Racial/ethnic background adds another layer of complexity to the gender and socioeconomic gaps.

This dissertation moves beyond binary categories to take a more multidimensional approach, one consistent with the idea behind intersectionality.[104] For all groups, overlapping status configurations and social identities systematically structure the environment and experience in ways that affect development over the life course. For the outcome of educational attainment, being black, male, or socioeconomically disadvantaged is each associated with lower educational attainment on average than being white or female or socioeconomically advantaged. Those separate categories still do not fully capture lived experience and how a particular race, gender, and class position may be associated with life conditions and experiences that influence development and life outcomes such as education. To be sure, we must recognize that even with more multidimensional categories, there is still great heterogeneity of experience.

Due to the history of race relations and discrimination in the United States, African American youth often live in highly segregated neighborhoods and attend segregated schools with concentrated disadvantage. Although the black middle class has grown, black males have disproportionately high exposure to family disadvantage, concentrated schoolmate disadvantage, and aggressive schoolmates. Each of these factors negatively relates to boys' educational attainment; in combination, they amplify educational risk. Because of black males' relatively high exposure to these disadvantages, these factors pose relatively larger risk to their educational attainment at the population level.

As discussed in this dissertation, studies focused on African American youth have documented gender differences in multiple life domains that could contribute to differential educational outcomes between black males and females. Generally correlated with socioeconomic disadvantage, contributing factors could include: family structure and gender-related parenting

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[104] The term originally focused on oppression of black females related to combined disadvantaged statuses of race and gender (Crenshaw 1994; Collins 1991).

strategies and expectations; different teacher expectations; high rates of placement of black males into special education and high suspension rates; gender-gaps in learning-related behaviors; the male peer environment in schools with concentrated disadvantage, where masculinity norms may conflict with high academic effort; more exposure to neighborhood danger and violence; negative stereotypes of black males that undercut high educational expectations and achievement; greater discrimination of black men in the labor market and criminal justice system; and higher returns to education among black females.

My dissertation found that compound disadvantages intersect among many African American males to impede attainment of a high school degree and college enrollment. Although rates of college entry among black males have been increasing, disadvantaged black males face distinct hurdles to college entry. The gender gap in educational attainment among blacks has long historic roots (McDaniel et al. 2011). Coming from a historically disadvantaged position, African American males have the largest educational gap to overcome.

This dissertation research contributes to knowledge in developmental science, illustrating how overlapping social statuses, specifically, race, gender, and class, and interdependent ecological contexts relate to educational attainment. It also highlights the importance of the early to mid-adolescence period for research on educational attainment. Complementing existing qualitative research, this national population-based study adds to limited quantitative research related to the gender gap in education among African Americans. It furthers our understanding of factors related to different levels of educational attainment, showing variation in race-gender patterns depending on the level. Most studies focus on educational achievement rather than attainment. Finally, by using multiple demographic indicators of family disadvantage, this study measures family background factors at the individual and school level in a more comprehensive way than most research in this area.

Future Research

Based on my prior work in public health and criminal justice policy, I was drawn to study education in my dissertation because of its profound effect on major life outcomes and its role in life-course and intergenerational inequality. I am broadly interested in understanding processes through

which disadvantages in earlier life affect later life outcomes. For my next project in my postdoctoral work, I will extend my dissertation work to examine how inequalities in educational attainment and processes of upward and downward mobility are associated with the mental health of African American men and women at midlife.

Gender differences in educational processes and outcomes among African Americans and other racial/ethnic groups warrant more attention. This dissertation points directly to the need to understand the mechanisms through which family disadvantage, schoolmate disadvantage, and schoolmates' aggressive behavior relate to the educational attainment of boys. In addition, we need to better understand how race-gender inequalities in educational attainment relate to social stratification and well-being over the life course. More broadly, further research is needed to understand how developmental processes and outcomes over the life course vary related to gender, race, and class, and how multiple contexts (e.g., families, schools, and communities) combine to affect development.

Topics for future research directly related to my dissertation might include:

- How parental resources and family structure relate to parenting and family processes in ways that may differentially affect educational outcomes by gender and race/ethnicity;

- Tracing the development of divergent academic pathways for boys and girls, including identities, self-efficacy, expectations, and behaviors, and considering the role of families and schools; and

- Factors associated with gender gaps in educational outcomes at the school level.

Intervention research in education might fruitfully explore strategies to: a) foster disadvantaged boys' identification with school success as socially rewarding and compatible with masculinity; b) strengthen boys' non-cognitive skills related to educational achievement; and c) scale-up proven interventions and practices at public schools serving disadvantaged and minority youth.

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