

SCHOOLS UN/BOUNDED:  
THE UTILITY OF SCHOOL ZONE BOUNDARIES

by

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and approved by

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## ABSTRACT OF THE DISSERTATION

Schools Un/Bounded:

The Utility of School Zone Boundaries

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The school-neighborhood bond has been a central feature of the public education system since its origin. Today, the rise in school choice models is leading to an increase in the number of children who attend schools that are detached from a neighborhood. Despite the fact that prior scholarship has not evaluated the utility of the school-neighborhood bond, reformers who promote school choice are dismantling this construct.

Disconnecting public schools from neighborhoods affects children and entire communities. While some theoretical and empirical work indicate that positive outcomes are associated with severing the school-neighborhood bond, others indicate that the results of such actions are harmful to children and communities. The most compelling arguments to eliminate school assignment practices based on residence maintain that such actions are necessary to desegregate schools. Conversely, theories of collective efficacy and social capital indicate that zoned schools can serve as anchors of communities and unite neighborhood residents in an effort to work towards the common good. Using New

York City as a case study, this dissertation presents a set of analyses that aids in clarifying the positive and negative effects of the school-neighborhood bond.

Findings from the analysis of school segregation in New York City indicate that—in the absence of policies requiring school integration—segregation persists regardless of school assignment practices. In addition to demonstrating that school choice models in New York City are associated with higher levels of segregation than neighborhood schools, this dissertation also shows that increased levels of diversity correlate with higher rates of proficiency in math and English language arts. Evidence shows the benefits of school integration; however, there is no indication that the school-neighborhood bond must be eliminated to desegregate schools.

This dissertation also presents a geostatistical study analyzing the association between neighborhood collective efficacy and educational outcomes. The analysis uses multiple large-scale datasets to create a measure of neighborhood collective efficacy across elementary school zones. After using a spatial weighting algorithm to estimate neighborhood-level variables within elementary school zone boundaries, these neighborhood-level variables are analyzed along with the school-level data for each community's corresponding zoned school. A treatment effects model demonstrates that high neighborhood collective efficacy has a significant positive effect on school performance, indicating the value of the school-neighborhood bond.

The results of this dissertation have immense policy implications in an age of school choice reform. Evidence from this study suggests the need for a large-scale effort to desegregate schools without dispersing children to educational institutions that are



untethered from neighborhood life. The dissertation offers a number of suggestions for achieving this goal.

## **Dedication**

Parts of this dissertation get quite technical and the methods I use inherently produce a scenario in which numbers replace the individuals they represent. However, as you read this study, I urge you to think of the people in your life who turn your neighborhood into a community. Do not lose sight of the fact that the numbers presented in this text represent people. It is my belief that the people behind the numeric data in this study are our best hope for improving our neighborhoods and, in turn, our public education system.

While working towards the completion of my dissertation, my block lost the person most responsible for shaping our neighborhood into a community. This study is dedicated to that person, Michael Lancaster. Our community will never be the same without Michael watching over it from his spot on the stoop of our building, but we will always be stronger because of the kindness, genuine care, and love that Michael shared with us.

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*In the matter of reforming things, as distinct from deforming them, there is one plain and simple principle; a principle which will probably be called a paradox. There exists in such a case a certain institution or law; let us say for the sake of simplicity, a fence or a gate erected across a road. The more modern type of reformer goes gaily up to it and says, "I don't see the use of this; let us clear it away." To which the more intelligent type of reformer will do well to answer: "If you don't see the use of it, I certainly won't let you clear it away. Go away and think. Then, when you can come back and tell me that you do see the use of it, I may allow you to destroy it"* (Chesterton, 1929).

## **Chapter One – Introduction**

### **The Role of Boundaries in Society**

Our society is made up of boundaries. Physical boundaries such as mountains, bodies of water, and highways are easy to identify and shape human life in obvious ways. Political boundaries such as national, state, and municipal borders drive a wide range of social and economic processes in our world. Governments define a collection of functional boundaries such as police precincts, voting districts, and school attendance zones, all of which affect the day-to-day experiences of the people who live within these borders. Private citizens and groups create boundaries to meet specific needs: parents delineate the border of a neighborhood in which their children are allowed to explore freely, gangs establish borders of an area that they control, and neighborhood associations define the borders of their communities.

Boundaries simultaneously bring those within them together and separate bounded groups from one another. Depending on how people in our society employ boundaries, these borders can advance common goals and improve the quality of life for all or create divisions that produce inequalities and engender fear, distrust, and even hatred.

Our world is far too big to live without boundaries. When constructed thoughtfully, boundaries can provide people with the opportunity to build intimate relationships characterized by compassion and empathy. Boundaries focus an individual's attention on a manageable group of people and allow them to listen to and to be heard by one another. Such interactions produce the conditions in which a neighbor's concerns become a community's concerns. Without boundaries, it is impossible for a group of

people to provide public goods or to stand up for the needs and interests of their community. Of course, boundaries do not guarantee any of the positive social, economic, or political outcomes that are possible when people come together. Individuals in bounded groups must effectively communicate with each other, have access to the resources required to accomplish their goals, and maintain an openness to working with others towards common ends. When these conditions are met, boundaries can bring about tremendous good.

Boundaries can also do harm. Oftentimes boundaries create divisions that seek to keep people out rather than bring a group of people together. Throughout human history, people have had a tendency to use boundaries to protect a group's interests at the expense of others. One of the central campaign promises in Donald Trump's run for President in the 2016 election and one of his first executive actions was to allocate funds to build a wall that separates the United States from Mexico. The Trump administration contends that a wall is necessary to keep U.S. citizens safe from a range of social and economic problems they claim are traveling across the border between Mexico and the United States. Boundaries of this kind prevent people from connecting with one another and creating a peaceful and prosperous world for all; instead, they ignite xenophobia and generate ignorant and unfounded fears of crime and economic decline. Although Trump's wall is an extreme example, boundaries that seek to divide and protect the interests of one group from another are commonplace.

Contemporary society is plagued by boundaries that either explicitly or surreptitiously seek to divide us; boundaries of this nature are antithetical to borders created to provide groups of people with the opportunity to come together not in

opposition to outsiders but for the practical purpose of working with a manageable number of individuals. While some of the racial, ethnic, religious, and socioeconomic segregation that exists in our society is self-imposed, a good portion of it is structurally enforced by man-made boundaries. The history of redlining established boundaries between white and black neighborhoods that persist today, and ineffective zoning laws and housing policies are leading to further socioeconomic divisions. Data show that many municipalities and neighborhoods have actually become more segregated in recent years (Reardon and Owens, 2014). Furthermore, the persistent racial crisis in the United States indicates that our boundaries are preventing people from building relationships in diverse communities. The lack of diversity in neighborhoods, churches, workplaces, and schools makes it nearly impossible for people to develop genuine concern for the well-being of people from different backgrounds. When people fail to build relationships with a diverse group of people, they have a much harder time understanding alternate perspectives on social issues, developing empathy for others, and collaborating with people of all backgrounds.

Despite the overwhelming tendency of people and institutions in the United States to employ boundaries to protect the perceived interests of individuals and divide groups by racial, ethnic, religious, and socioeconomic characteristics, some have made efforts to break down these kinds of borders. In the United States, no type of boundary has received more attention in this battle between isolationism and openness than school attendance zone boundaries. From Supreme Court cases such as *Brown v. Board of Education* in 1954 and *Milliken v. Bradley* in 1974 to state and local battles over school zoning

policies, people have heatedly debated society's approach to creating boundaries for the purpose of delineating where children go to school.

During the early years of public schooling in the United States, school attendance zone boundaries were not a topic of debate. The first compulsory public education law of note, Massachusetts' 1647 Old Deluder Satan Law "ordered that every township in this jurisdiction, after the Lord hath increased them to fifty households shall forthwith appoint one within their town to teach all children" (Farrand, 1929). In large part, school assignment practices have always centered on geographic proximity and municipal boundaries in the manner that the 1647 law in Massachusetts established. The early school districts that resulted from this law did not use borders to exclude outsiders; rather the law guided individual households to work together to ensure that children in a community received a basic education.

Over time, disputes about school funding and racial segregation complicated school assignment practices. Today, school zone boundaries and school assignment practices are hotly debated education policy issues. While school zone boundaries continue to bring people together to promote the welfare of community members, some people also use these borders to exclude groups of people in an effort to protect the desires of insiders. Complicating the matter further, many states now have alternative education systems that transcend district boundaries and allow for new kinds of school choice and a dissolution of the bond between neighborhood and school. Given the complexity of school assignment practices and the lack of knowledge about the benefits and drawbacks of boundaries in the public education system, this study seeks to develop a better understanding of the utility and disutility of school attendance zones.

## Study Overview

More than at any other time since the historic *Brown v. Board of Education* Supreme Court decision, the public is engaged in a debate about how to assign children to schools in a fair and efficient manner. School choice reforms are increasingly severing the historical bond between neighborhoods and public schools. The rapidly increasing number of children who make use of charter schools, school voucher programs, magnet schools, interdistrict choice options, and intradistrict choice models often travel beyond the boundaries of their communities to receive their formal education. The implications of disconnecting public schools from neighborhood life are potentially enormous, but prior research has yet to consider this topic. The overarching objective of this study is to elucidate the complex relationship between school and community with the hope of identifying the benefits and drawbacks of cutting the historical bond between neighborhoods and schools.

Most research in the field of education relies on student-level data, school-level data, or the aggregate of these across districts, municipalities, states, or nations; this study, however, draws upon neighborhood-level data in an effort to better understand the relationship between schools and communities. Neighborhoods provide one of the most important units of analysis for social outcomes. Despite massive changes to our society with technological advances and globalization, local context continues to matter and has a profound effect on shaping human interactions and individual progress. Beyond determining access to opportunity, locality and the conditions of a space influence social interactions and community cohesion in ways that determine the local structures that come to hinder or propel an individual's life outcomes.

Public schools have been one of the key neighborhood institutions that have the potential to shape opportunities and life outcomes. In general, a neighborhood's social, economic, and physical attributes correlate with school quality. As a result, better-resourced schools with higher caliber teachers, more involved parents, and a lower ratio of struggling students to teachers and counselors are often associated with more advantaged neighborhoods (Sadovnik, Cookson, & Semel, 2013). A combination of these within-school attributes and out-of-school factors such as student access to good nutrition, healthcare, stable housing, safe home environments, and supplementary learning experiences influence educational outcomes.

Beginning with the work of James Coleman in 1966, scholars have debated the degree to which within-school and out-of-school factors affect the educational achievement of students (Borman, 2010; Coleman, 1966; Downey & Condrón, 2016). This study seeks to add to this ever-growing body of literature by analyzing the relationship between a range of neighborhood-level variables and the educational outcomes of the schools within these neighborhoods in order to develop a better understanding of the degree to which out-of-school factors affect the work that occurs in local schools. More specifically, this study seeks to understand how school zone boundaries shape educational opportunity and achievement. As noted earlier, boundaries can be used as tools for exclusion as well as implements for bringing people together. This study considers both the ways that school zone boundaries can hinder and propel the goals of our public education system.

The first part of this study focuses on one of the largest exclusionary effects that results from most systems of school zone boundaries—segregation. High levels of



residential segregation by race and class lead to high levels of school segregation in systems where an individual's address determines school attendance. Given that school funding is tied to local taxes in many parts of the country, segregation often leads to conditions in which schools in wealthy areas have unlimited access to resources while schools in impoverished areas struggle to provide basic resources to their students. Even when efforts are made to equalize funding across districts with unequal tax bases, the deleterious effects of segregation do not disappear (Yaffe, 2007).

A growing body of research shows that attending schools with diverse populations is beneficial to children of all backgrounds (Amy Stuart Wells, Fox, & Cordova-Cobo, 2016). Diverse student populations provide children with the opportunity to learn about differences in the human experience and to think critically about how identity and socioeconomic status shape life in our society. In addition to the learning opportunities associated with diverse student populations, integration makes it easier for schools to meet the needs of all students. In segregated systems, high-needs students who live in poverty, face discrimination in their day-to-day lives, struggle with learning disabilities, or have limited English proficiency are frequently concentrated in specific schools. These schools are overburdened with challenges and are often unable to meet the needs of their students; however, when the proportion of high-needs students is more evenly spread amongst schools, school personnel can better serve all children (Bryk, Bender Sebring, Allensworth, Luppescu, & Easton, 2010). While there is a large body of literature on the extent of school segregation and a growing body of literature on the effects of school segregation, more research is needed on the ways in which boundaries and school assignment practices shape segregation. The first part of this study offers an in-depth

quantitative analysis of neighborhood-level and school-level segregation in New York City and seeks to identify the extent to which school zone boundaries and other school assignment practices influence levels of segregation.

After analyzing the exclusionary effects of school zone boundaries through an analysis of school segregation, the study shifts attention to consider the potential for school attendance zones to unite a community and serve the common good. One of the out-of-school *neighborhood effects*—the amalgamation of social, political, economic, and physical attributes of a space—that may influence the educational outcomes of local schools is *collective efficacy* (Sampson, 2012). Robert Sampson’s work on collective efficacy suggests that a range of positive outcomes is associated with an increase in social cohesion and shared expectations for control. Theoretically, a neighborhood where people maintain strong social connections and a focus on ensuring the safety and well-being of all community members should have a positive influence on education at the local school. While there is a growing body of empirical evidence that demonstrates the ways in which collective efficacy influences social processes such as crime, there is little to no data supporting the theoretical relationship between collective efficacy and educational outcomes. As such, the second part of this study seeks to measure and analyze collective efficacy at the neighborhood-level in an effort to determine if there is a correlation between collective efficacy and educational outcomes.

This study provides an in-depth quantitative analysis of New York City neighborhoods and zoned elementary schools. After constructing a geostatistical model that analyzes neighborhood-level variables across elementary school zones, the study seeks to identify the ways in which school zone boundaries are currently hindering or

augmenting educational advancements. New York City provides an ideal location for this study. The New York City Department of Education (DOE) holds the odious position of overseeing the country's most segregated education system (Kucsera & Orfield, 2014). Relatedly, New York City has one of the highest rates of residential segregation (Logan, 2011). The dramatic variation between different neighborhoods and schools generates a wide-ranging sample that makes for compelling research. While the New York City DOE has initiated a range of school choice options that are weakening the tie between neighborhood and school, most students at the elementary level continue to attend schools within their communities—making it possible to study the relationship between neighborhood and school in this locality. As school choice rises in New York City, the current mayor and school chancellor have made small efforts to deepen the connection between neighborhoods and schools by funding community schools. Additionally, the current mayor and school chancellor have acknowledged the problem of school segregation and initiated efforts to address the problem. Given this significant shift in New York City education policy, there is no better time to study the relationship between neighborhoods and schools in this space.

### **Research Questions**

The following primary research question guides this study:

What is the utility of the school-neighborhood bond?

In order to determine the utility of the school-neighborhood bond, this study seeks answers to the following questions:

1. What function has the school-neighborhood bond served throughout history?
2. How do different school assignment practices, including traditional neighborhood schools, affect levels of school segregation?
3. Does neighborhood-level collective efficacy affect educational outcomes at zoned schools?

The first question is answered through an extensive literature review in Chapter Two. A quantitative analysis of school segregation in Chapter Four seeks to answer the second question. And the analysis of neighborhood collective efficacy in Chapter Five answers the third question. By considering the utility of the school-neighborhood bond throughout history, the ways in which this bond perpetuates segregation, and the ways in which this bond can enhance social cohesion and educational outcomes, this study is able to offer new insight into the overall utility of the school-neighborhood bond. Table 1 provides a summary of these research questions along with a collection of more targeted questions that this study answers.

<b>What is the utility of the school-neighborhood bond?</b>		
<i>Literature Review</i>	<i>Segregation Analysis</i>	<i>Collective Efficacy Analysis</i>
<p>What function has the school-neighborhood bond served throughout history?</p> <p>A. What are the origins of the school neighborhood bond?</p> <p>B. In what ways has the school-neighborhood bond enhanced the lives of students and neighborhood residents?</p> <p>C. In what ways have school-neighborhood boundaries been used to exclude specific groups of people, isolate privilege, and concentrate disadvantage?</p> <p>D. What are the theoretical benefits and drawbacks of the school-neighborhood bond?</p> <p>E. In what ways do different education reform models sever or strengthen the school-neighborhood bond?</p>	<p>How do different school assignment practices affect levels of school segregation?</p> <p>A. Which school assignment practices produce high levels of school segregation?</p> <p>B. Which school assignment practices mitigate school segregation?</p> <p>C. How does neighborhood segregation relate to school segregation?</p> <p>D. How does school segregation affect the educational outcomes of students?</p> <p>E. Does school segregation have a distinct effect on the educational outcomes of different racial and ethnic groups?</p>	<p>Does neighborhood-level collective efficacy affect educational outcomes at zoned schools?</p> <p>A. Do communal 311 calls and voter turnout rates correlate with demographic variables in a manner that is consistent with collective efficacy theory?</p> <p>B. How do demographic patterns and housing characteristics differ in elementary school zones with high and low neighborhood collective efficacy?</p> <p>C. How do demographic patterns and achievement levels differ in schools bonded to elementary school zones with high and low neighborhood collective efficacy?</p> <p>D. What is the treatment effect of high neighborhood collective efficacy on educational achievement at zoned schools?</p>

*Table 1: Research Questions*

## **Theoretical Framework and Conceptual Model**

Throughout human history, people have developed a complex system of attaching value to tangible and intangible items. Societies have come to rely heavily on economic capital

to construct a vision of the relative value of tangible goods and services. While the practical use of economic capital is complex and the attached values of tangible items is ever-changing, the use of a monetary system for such items allows people to make sense of this form of valuation with relative ease. Societies also place value on intangible items and concepts such as individual traits, personal beliefs, and human relationships. These intangibles, often referred to as *cultural capital* and *social capital*, can be abstract, complex, and difficult to quantify, because there is no practical way to assess or assign specific value to them. However, these intangibles play an essential role in mitigating people's ability to access economic capital and to achieve other types of worth in society.

People access both tangible and intangible forms of capital in two ways: (1) through *birth* children inherit innate characteristics and join a family and a community with an existing set of resources, and (2) through *life experiences* people accumulate knowledge, relationships, and a personal demeanor. As a member of society that purports to value equality and justice, there is a pressing need to ensure that our social, economic, and political structures allow all people a fair chance of accessing the tangible and intangible forms of capital. The undeniable reality is that the conditions in which people are born and the life experiences that they access are anything but equal and just. Structures abound that favor certain groups of people and allow them to accumulate various forms of capital with ease; simultaneously, certain structures create serious obstacles for other groups of people, devalue the capital that they do possess, and make it difficult for them to advance.

This study relies on social capital theory and cultural capital theory as well as theories of social reproduction and structural violence to evaluate some of the ways in

which neighborhoods and schools serve as pathways for dispensing intangible forms of capital. Central to the use of these theories is the hypothesis that schools could be altered or enhanced to more effectively guide students and other members of a community in developing the valuable intangible forms of capital discussed above. Given that schools are a government-funded public good that all members of society have a right to utilize, schools are a potential route to building a more just and equitable society if they broker intangible forms of capital effectively.

Another key element of the theoretical framework that this study employs is the importance of the neighborhood unit and the ways in which collective action can enhance some of the intangible forms of capital outlined above. There has been a steady progression towards using the neighborhood unit to evaluate social processes in cities. Social scientists in the United States, beginning with Park and Burgess in the early 1900s, have recognized the complexities of the social, economic, and political processes that take place in urban areas (R. E. Park & Burgess, 1921). This foundational work in the field of urban sociology drew attention to the clear patterns in the ways that residents of cities interact with each other and their space. Building upon the work of sociologists such as Park and Burgess, Sampson constructed a theory on *neighborhood effects* (Sampson, Morenoff, & Gannon-Rowley, 2002). Neighborhoods are an essential unit of analysis within cities because the people who live in a shared space encounter the same physical structures, access similar resources, experience similar levels of safety, and frequently share similar socioeconomic and cultural backgrounds. All of these processes and experiences combine to have a neighborhood effect that can either constrain or enhance life outcomes for individuals within the space. An extensive body of literature on

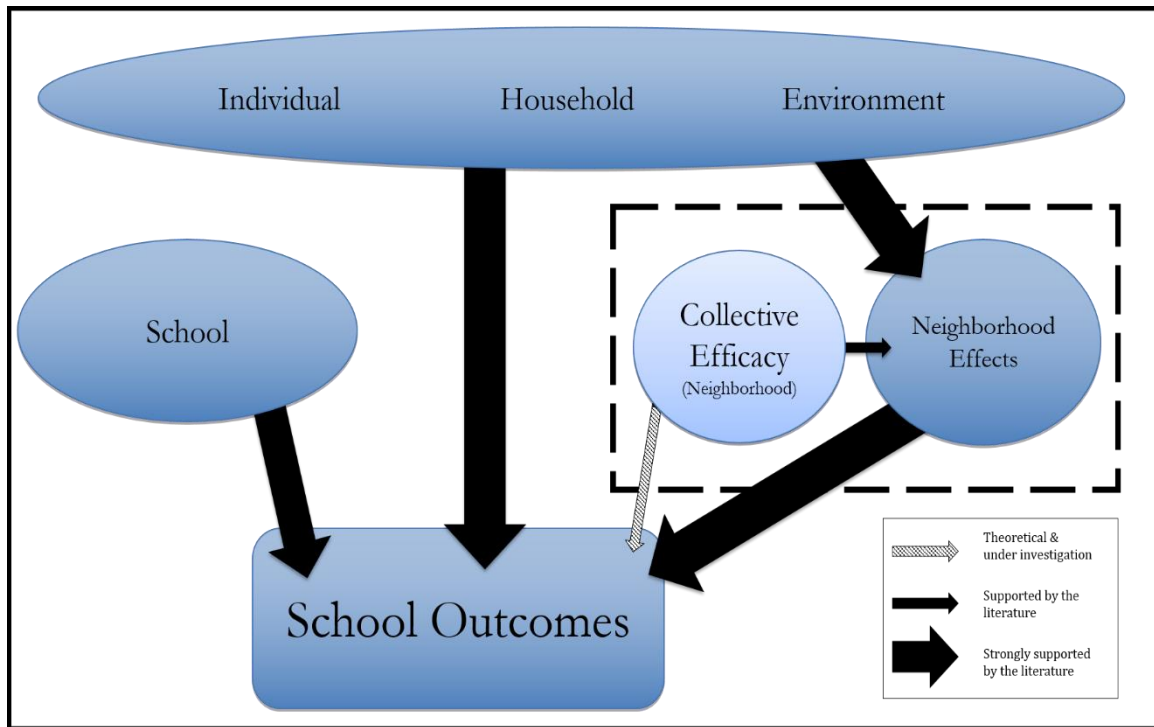
the theoretical importance of place supports the argument that neighborhood effects shape human experience in profound ways. This study builds on theories of neighborhood effects and seeks to better understand the relationship between neighborhood effects and educational outcomes.

One element of neighborhood effects that Sampson elaborates on extensively is *collective efficacy*. Collective efficacy is rooted in social capital theory and considers the degree to which the residents of a community trust one another and are willing to take action for the common good (Sampson, Raudenbush, & Felton, 1997). Prior research shows that increases in collective efficacy are associated with positive social outcomes. This finding aligns with earlier work on the positive relationship between social capital and educational outcomes (Bryk, Lee, & Holland, 1993; Coleman, 1988; Putnam, 2015). The missing piece between Sampson's work on collective efficacy and the work of other sociologists on social capital and education is that the literature has yet to consider the relationship between social capital on a neighborhood level—essentially collective efficacy—and the educational outcomes of the children in a given area. This study strives to build upon theories of social capital, neighborhood effects, and collective efficacy to both answer the research questions and extend these theoretical conversations.

Figure 1, the conceptual model developed for this study, shows how a range of within-school and out-of-school factors influence school outcomes. Black arrows illustrate relationships that prior scholarship has demonstrated have both theoretical and empirical validity. Larger arrows highlight relationships that are most strongly supported by the literature and have the most powerful influence on school outcomes. The patterned arrow shows a relationship that has theoretical support but has not yet been studied



empirically. The focus of this study is to determine the empirical significance of this previously unstudied relationship and to contribute to the literature concerning the ways in which the other factors influence school outcomes.



*Figure 1: Schools Un/Bounded Conceptual Model*

As this conceptual model illustrates, school outcomes are influenced by a wide range of factors. While no single model could fully account for all variation in school outcomes, this model highlights some of the factors that have been shown to have the greatest influence and offers a depiction of the role of collective efficacy. As discussed above, prior scholarship demonstrates that individual and household traits (e.g., race, ethnicity, economic stability, educational attainment, etc.) along with environmental factors (e.g. crime) have a strong influence on school-level outcomes (Tate, 2012).

Additionally, the literature shows that countless individual, household, and environmental

traits combine to have a neighborhood effect that shapes opportunities, including school outcomes, for area residents. Sampson argues that an important component of neighborhood effects is collective efficacy, or the degree to which neighbors trust each other and are willing to act on behalf of the common good (2012). The conceptual model illustrates that while neighborhood-level collective efficacy is a component of neighborhood effects, for the purposes of this study it will be evaluated independently in order to determine its potential to influence school outcomes.

Another factor that plays an essential role in shaping school outcomes are the characteristics of schools themselves. While it is undeniable that the individual, household, and environmental factors discussed in the previous paragraph shape schools, this conceptual model considers the effects of within-school factors and out-of-school factors on educational outcomes separately. Within-school factors such as teacher quality, curriculum, and resources affect educational outcomes in profound ways; however, these variables are beyond the scope of this particular study.

The central concern of this study is whether or not the school-neighborhood bond, which has historically been a dominant feature in the public education system, has utility. In Figure 2, neighborhood-level collective efficacy and neighborhood effects are in a cut-out box to illustrate that these factors are eliminated from the conceptual model in the event that the school-neighborhood bond is severed through the implementation of a school model such as a voucher system. While individual characteristics, household characteristics, and environment continue to influence school outcomes when the school-neighborhood bond is broken, the potential for neighborhood-level collective efficacy to

contribute to improved school outcomes is weakened without the direct relationship between neighborhood and school.

### **Significance**

Historically, schools have served a local population; however, the advent of school choice has begun to separate the link between neighborhood and school. The general argument for establishing greater levels of school choice is that it will give families more agency in the education of their children, it will foster innovation at the school-level as schools compete for students, it will allow students trapped in “failing” schools to move into more effective schools, and it can aid in school desegregation efforts. Existing scholarship on school choice focuses on the degree to which these kinds of reforms affect educational outcomes and who benefits most from these reform models. One of the issues yet to be explored in any substantive manner is the ways in which separating schools from community life affects children, families, school culture, and neighborhood units. This study provides a significant addition to the literature by evaluating the link between neighborhood-level variables and local educational outcomes as well as by questioning the power of collective efficacy to improve life chance. On one hand, the study may support arguments for removing students from disadvantaged neighborhoods, through interventions such as school choice, in hopes of positively affecting their education.<sup>1</sup> On the other hand, a consideration of the link between collective efficacy and improved

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<sup>1</sup> It is important to note that such a model often leaves students to face the conditions of their home neighborhoods when not in school, potentially negating any effect of traveling out of the space for schooling. There are a small number of interventions that attempt to completely separate children from their neighborhoods for both schooling and day-to-day living through residential schools and housing vouchers that provide families with the support and resources to move to wealthier areas. These interventions are discussed in Chapter Two.

educational outcomes may suggest that separating schools from neighborhood life has a detrimental effect on both community cohesion and schooling.

This study provides significant insight into the value of the bond between school and neighborhood and offers new methodological approaches for this type of research. First, the study provides a significant addition to the literature through its analysis of the relationship between neighborhood-level variables and elementary school outcomes across the 637 elementary school zones and their districted schools in New York City. By employing a spatial weighting method to analyze a range of census and non-census variables within the authentic boundaries of the school zone rather than the areas delineated by the census bureau or other agencies, the study is able to offer a clear analysis of the relationship between neighborhoods and schools. Second, the use of previously untapped data types for assessing collective efficacy on a large scale will provide a significant addition to the literature. Finally, this study's effort to frame the school choice debate around an analysis of the utility of school zone boundaries offers a new perspective for considering important education policy questions. Beyond the fact that the results of this study have direct implications for New York City, the large sample size and the breadth of schools and neighborhoods make it possible to draw upon the results and synthesize more universal conclusions about the relationship between neighborhoods and local schools.

## **Conclusion**

When French scholar Alexis de Tocqueville visited the United States in 1831, during the country's infancy, he observed that the strength of the new nation lay in the human

associations and organizations that serve as the foundation of democracy. Tocqueville focused attention on the building blocks of American democracy—local politics. He wrote, “local assemblies of citizens constitute the strength of free nations. Town meetings are to liberty what primary schools are to science; they bring it within the people’s reach, they teach men how to use and how to enjoy it” (Tocqueville, 1838). Countless scholars have written about the importance of local democratic processes in bringing people together to shape their own destiny. Much of John Dewey’s work focused on this very topic and argued that schools should serve as centers of community life and act as both a tool for instructing children how to be members of society and an institution that serves as a town meeting place to practice democracy (Dewey, 1916). Echoing a similar theme, Jane Jacobs’ critique of urban planning, *The Death and Life of Great American Cities*, notes that “Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody” (Jacobs, 2011, p. 312). Diane Ravitch, who paid homage to Jacobs’ vision of community-control in her book, *The Death and Life of the Great American School System: How Testing and Choice are Undermining Education*, builds upon the work of Tocqueville, Dewey, and Jacobs to argue for the importance of neighborhood schools. Ravitch writes,

Do we need neighborhood public schools? I believe we do. The neighborhood school is the place where parents meet to share concerns about their children and the place where they learn the practice of democracy. They create a sense of community among strangers. As we lose neighborhood public schools, we lose the one local institution where people congregate and mobilize to solve local problems, where individuals learn to speak up and debate and engage in democratic give-and-take with their neighbors. For more than a century, they have been an essential element of our democratic institutions. We abandon them at our peril. (Ravitch, 2010, p. 220)

This study acknowledges the work of these great scholars, but questions whether the belief in the power of community and the bond between neighborhood and school is sentimental and over-idealistic. In theory, schools and neighborhoods that construct social bonds and build collective efficacy should produce strong educational outcomes and improve life for community members. However, there is little evidence that such processes are happening on a large scale, particularly given the harsh realities brought on by rampant inequality and unwavering segregation. Now that a sect of education reformers is advancing interventions that sever the bond between school and neighborhood, it is essential to question whether or not this relationship has utility. If there is evidence demonstrating that the bond between school and community can enhance the lives of children, then policy makers must heed Ravitch's warning that "we abandon [neighborhood schools] at our peril." However, if data indicate that the school-neighborhood relationship serves no function, policy makers can continue to evaluate the potential benefits of reforms that allow for school choice and set aside nostalgic visions of the neighborhood school.

## **Chapter Two – Literature Review**

This study builds upon the work of countless scholars, crosses several disciplines, and integrates a number of theoretical perspectives in an effort to understand a complex set of social, economic, political, and structural issues that shape neighborhoods and traditional public schools. The existing literature on these topics is immense, yet the following pages attempt to review key elements of prior scholarship that both support and problematize the major topics explored in this study. In order to highlight prior scholarship that speaks most directly to this study, the following literature review is organized around four primary topics: (1) the roots of educational inequality; (2) the significance of neighborhoods; (3) the continuum of interventions that separate schooling from neighborhood life; and (4) the community school model in theory and practice.

Before considering the relationship between schools and neighborhoods and questioning whether or not the bond between them can serve as a tool for progress, the literature review presents a discussion about a number of theoretical and practical matters relating to schools and neighborhoods. The first section of the literature review discusses key patterns in educational outcomes in the United States and reviews some of the major explanations for different levels of academic achievement. Because this study seeks to better understand the relationship between neighborhoods and schools, this section focuses primarily on out-of-school factors that shape achievement. The second section of the literature review presents a discussion of the significance of neighborhoods and the human interactions that form within their boundaries. Combined, the first two sections of the literature review demonstrate both the practical and theoretical bonds between neighborhoods and schools.

The third and fourth sections of the literature review consider different reforms that seek to both improve educational outcomes and diminish poverty in our society. Section three reviews the literature on a range of interventions that separate children from their neighborhoods for the purpose of schooling. Conversely, the fourth section of the literature review considers a reform—the community school model—that strengthens the bond between neighborhood and school and seeks to build collective efficacy while providing a range of supports to all people in a school zone.

### **The Roots of Educational Inequality**

Education scholars bemoan the fact that policymakers, journalists, and many citizens use public schools as a punching bag for all of society's problems. Historian Diane Ravitch and sociologist Charles Payne both note that *No Child Left Behind* and *Race to the Top* increased the degree to which people target schools as the root of failure in all areas of society (Payne, 2008; Ravitch, 2013); however, other scholars contend that the people of the United States have consistently deemed public education a failing enterprise throughout history (Rothstein, 1998). Despite the fact that education has been the scapegoat for myriad social problems, some scholars are quick to argue that while imperfect, public education is in fact a largely successful and vibrant institution that is constantly evolving (Tyack & Cuban, 1995).

Perhaps the reason that the debate about the quality of public education in America continues to rage is that there are stark differences in the schooling experience and in student outcomes. Scholars have worked to understand these differences in schooling from two primary lenses—some argue that within-school factors such as



curriculum, discipline, pedagogy, and teacher quality are responsible for student outcomes while others argue that out-of-school factors such as poverty, family composition, health, and culture determine how well children do in school (Sadovnik et al., 2013). James Coleman's 1966 "Equality of Educational Opportunity" report framed the unsettled debate concerning the power of within-school factors and out-of-school factors. Coleman's analysis indicated that schools have very little impact on educational outcomes and that differences among students do a better job of explaining academic performance (Coleman, 1966). While countless scholars have presented research that supports Coleman's 1966 report, an equally large number of studies have contradicted these findings. In fact, Coleman himself has presented research that shows the significant impact schools can have on educational outcomes (Coleman & Hoffer, 1987; Coleman, Hoffer, & Kilgore, 1982; Downey & Condrón, 2016). The obvious conclusion is that both within-school and out-of-school factors influence educational outcomes.

### *Opportunity vs. Achievement*

Before reviewing the range of theories that offer insight into the debate about sources of educational inequality, it is essential to consider both the ways in which scholars and policy makers frame this conversation and the various data they use. During the past decade, discussions about the achievement gap have become commonplace in both scholarly literature on education and in the mass media. James Crawford, an education scholar and advocate, conducted an analysis of the use of the phrase "achievement gap" in major newspapers and education journals between 1981 and 2006. As suspected, Crawford found that there was a major shift from discussions of educational opportunity to a focus on the achievement gap that occurred at the beginning

of the twenty-first century (Crawford, 2007). Numerous scholars have brought attention to this move away from considerations of educational opportunity and towards the achievement gap since Crawford's original analysis (D. C. Berliner, 2006; Welner & Carter, 2013). For many, this ideological shift is troubling. As Welner and Carter write, "Opportunity and achievement, though inextricably connected, are very different goals... Thinking in terms of 'achievement gaps' emphasizes the symptoms; thinking about unequal opportunity highlights the causes" (Welner & Carter, 2013). While many education reforms seek to reduce the achievement gap without a consideration of the causes that create unequal outcomes, others such as the community school reform model specifically seek to eliminate unequal opportunity by addressing poverty and providing for students' needs.

Countless data points highlight the gaps in educational outcomes and unequal access to opportunity. The data on achievement gaps is readily available and frequently cited. For example, in 2015, black twelfth-graders scored an average of twenty-nine points below white twelfth-graders on the National Assessment of Educational Progress (NAEP) reading exam (U.S. Department of Education, 2016). Similarly, black twelfth-graders scored an average of thirty points below white twelfth-graders on the NAEP math exam (U.S. Department of Education, 2016). With respect to attainment, in 2014, eighty-seven percent of white students graduated from high school within four years, whereas only seventy-three percent of black students graduated from high school within the same time frame (U.S. Department of Education, 2016). An ever-growing body of research demonstrates that socioeconomic status is a strong predictor of achievement as well (Anyon, 2005; Ladd, 2012). In fact, Reardon argues that SES serves as a stronger

predictor of educational achievement than race (S. Reardon, 2011). In 2014, only fifty-two percent of high school graduates from low-income families enrolled in college, whereas eighty-one percent of high school graduates from high-income families enrolled in college (U.S. Department of Education, 2016).

As troubling as the data on unequal educational outcomes are, the elusive statistics that highlight gaps in educational opportunity are even more alarming. In *The Flat World and Education*, Linda Darling-Hammond presents data that starkly display the extreme levels of inequality of educational opportunity that persist in the United States. Darling-Hammond demonstrates inequality in access to high-quality pre-kindergarten programs, in per pupil school spending, in access to highly-qualified teachers, and in access to challenging curriculum and advanced placement courses (Darling-Hammond, 2010). On average, students living in poverty and nonwhite students receive shockingly fewer educational resources than their wealthy, white counterparts.

David Berliner also presents a range of data highlighting inequality of opportunity; however, his work focuses on out-of-school factors. Berliner demonstrates that unequal access to healthcare, food security, stable housing, healthy living environments, nurturing families, safe neighborhoods, and out-of-school learning opportunities place poor students at an extreme disadvantage (D. Berliner, 2009). Berliner, along with a growing number of scholars, draws support for this argument about the influence of out-of-school factors on educational outcomes from literature that crosses the fields of health, environment, and education (Noguera & Wells, 2011).

### *Sociological Explanations of Inequality*

Darling-Hammond and Berliner's research is reminiscent of William Julius Wilson's seminal work, *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy* (1987). Both Darling-Hammond and Berliner highlight many of the unequal opportunities that are experienced by the population of "truly disadvantaged" children and adults described by Wilson. According to Wilson, a range of institutional, historical, and structural factors constrain the lives and opportunities of a growing underclass (Wilson, 1987). While the institutional, historical, and structural explanations of disadvantage proffered by Wilson and countless others offer important insight into the development and persistence of an underclass, there are a number of other influential theories developed by sociologists that attempt to explain how poverty persists and why it impacts certain people more than others. A few of the most notable sociological theories relating to unequal educational opportunities and outcomes include the culture of poverty, social reproduction theory, theories of social capital and cultural capital, and habitus. These theories have assisted scholars in interpreting their observations of inequality to varying degrees of success. While each of these theories has weaknesses, using them together to view real-world conditions allows for a deeper appreciation of the complex processes that subjugate some populations and elevate others.

The culture of poverty is a controversial social theory that attempts to describe how poor and nonwhite populations ensnare themselves in cycles of poverty that they transmit from one generation to the next. Anthropologist, Oscar Lewis, first presented this theory in his 1959 ethnography, *Five Families: Mexican Case Studies in the Culture of Poverty* (Lewis, 1975). Central to this concept is the belief that over time, poor populations develop a culture of failure and hopelessness that perpetuates their own

poverty. Lewis' work makes poor populations the focal point and essentially blames them for their persisting poverty. While the theory of the culture of poverty is deeply flawed because of its failure to consider the structural conditions that shape poverty, Lewis' work does aid in revealing how a sense of hopelessness can embed itself into a population and make entire groups of people feel as though they are trapped.

Even though there is evidence that people living in impoverished communities can develop a sense of hopelessness that drives some to give up, accept unemployment, turn to drugs, and even partake in criminal activities, an overwhelming majority of people living in disadvantaged neighborhoods do not fit such a description. Other theories, such as social reproduction theory, offer more useful explanations of poverty by looking at structural conditions that make it difficult to break through the barriers that separate different socioeconomic classes and racial groups. As MacLeod writes in *Ain't No Makin' It*, "Social reproduction theory identifies the barriers to social mobility, barriers that constrain without completely blocking lower and working-class individuals' efforts to break into the upper reaches of the class structure" (MacLeod, 2009, p.297). Building on the work of Weber, Durkheim, and Marx, MacLeod focuses his readers' attention on the structures that perpetuate a class society in the United States. MacLeod expands upon his model by turning to the work of Bowles and Gintis. According to Bowles and Gintis, as well as a growing number of sociologists such as Jean Anyon and David Berliner, school systems in the United States continue to be segregated by race and income. This segregation allows wealthy schools to prepare students for positions of power in society and schools in disadvantaged neighborhoods to prepare students for roles in the underclass (Anyon, 1997; D. C. Berliner & B. J. Biddle, 1997; Bowles & Gintis, 2011).

Instead of fulfilling its promise to equalize opportunity, the U.S. public school system frequently contributes to a social, political, and economic system that reproduces inequality.

While social reproduction theory provides an overview of how structural conditions in society perpetuate class differences, other theories are needed to help explain the intra- and inter-group mechanisms that allow these structures to persist. Theories of social capital and cultural capital are useful tools for understanding the specific dynamics that allow for social reproduction. The work of James Coleman demonstrates the connection between social capital—an individual's human network and group membership—and personal advancement. According to Coleman, strong social networks and connections with influential groups allow an individual to attain greater success in school and the job market (Coleman, 1988). Cultural capital works in similar ways as social capital, is generally transmitted from parent to child, and consists of the “general cultural background, knowledge, disposition, and skills” of a group of people (MacLeod, 2009, p.405). Bourdieu’s theory of cultural capital, suggests that schools reward the dominant class by relying on that class’ cultural capital and devaluing the culture of other groups of people (Bourdieu & Passeron, 1977). Because schools, along with many other institutions in our society, place a greater value on the social and cultural capital of the middle and upper classes, members of the lower class find themselves at a disadvantage at school and in the job market (Bernstein, 2003).

Pierre Bourdieu uses the concept of habitus to further explain social and cultural capital. According to Bourdieu, habitus is “a general, transposable disposition which carries out a systematic, universal application—beyond the limits of what has been

directly learnt—of the necessity inherent in the learning conditions (Bourdieu, 1984, p.170). In other words an individual's cultural background and social upbringing establish a sense of what is natural and comfortable in the world, and this consciousness drives a person's beliefs and actions. In MacLeod's *Ain't No Makin' It*, he uses the concept of habitus to demonstrate how his informants' cultural and social worlds shape their attitudes, beliefs, and actions. MacLeod argues that part of the habitus of low-income urban youth is the fact that other people around them have been unable to rise from poverty. This landscape reduces the aspirations of low-income urban youth and almost guarantees that individuals with this habitus will remain in poverty throughout their lives. Furthermore, MacLeod argues that our current education system perpetuates social inequality by validating middle-class culture and discarding the cultures and habitus of other groups. As MacLeod writes, "school-mediated exclusion... implants in those it marginalizes a set of cognitive and evaluative categories that lead them to see themselves as the causal agents of a process that is actually institutionally determined" (MacLeod, 2009, p. 485). Ultimately, the social institutions that dominate our society reject the culture and habitus of low-income populations, cultivating low aspirations and leading to the reproduction of poverty in subsequent generations.

The culture of poverty, social reproduction theory, theories of social and cultural capital, and habitus all offer insight into the disadvantages embedded into the experiences of low-income populations and people of color. Poverty is a result of complex forces shaped by institutions, cultures, and individuals. Structural forces in our schooling, political, and economic systems allow the middle and upper classes of society to pass advantages from one generation to the next, while excluding most members of the lower

classes from opportunities to advance. These structural forces shape a middle-class culture, validate it, and subsequently denigrate other cultural perspectives. Institutions not only accept a middle-class culture while rejecting the culture of lower classes, but they also perpetuate these differences. People living in poverty face tremendous challenges and are forced to devote incredible amounts of time and energy to meeting basic survival needs. Because low-income populations must focus their attention on feeding, housing, and clothing their families, they have fewer resources and time to devote to other pursuits such as education or the search for stable employment. This focus on survival permeates most aspects of the lives of low-income populations, shaping culture and habitus. In turn, this cultural capital and habitus place low-income populations at a disadvantage when attempting to maneuver through institutions that privilege middle-class ideals. As a result, the institutions that dominate our society perpetuate class differences, reproduce poverty in subsequent generations, and spread a sense of hopelessness into the lives of many people in low-income, urban communities.

While much of this section has focused on issues of socioeconomic class, race and ethnicity often shape opportunity in our society in parallel ways. Race and ethnicity correlate with socioeconomic status as a result of the many discriminatory structures that persist in the United States; however, it is important to note that this correlation does not mean all black and Hispanic people live in poverty or that all Asian and white people are economically stable (Lin & Harris, 2010). Racism trammels people of color regardless of class. Our justice system (Alexander, 2012), workforce (Alexander, 2012), and schools continue to discriminate against people of color, making personal advancement more challenging for certain groups of people (Farkas, 2003). The sociological theories



discussed throughout this section apply to race and ethnicity as readily as they apply to socioeconomic status.

Beyond the fact that this collection of sociological theories offers insight into the roots of educational inequality, they also provide an explanation of poverty and other social injustices. The following section of the literature review considers the role that neighborhoods play in shaping opportunity and highlights some of the connections between the structures and mechanisms that produce inequality in both schools and neighborhoods.

### **The Significance of Neighborhoods**

Given this study's focus on the school-neighborhood bond, it is essential to develop a clear understanding of what a *neighborhood* is. Neighborhoods are social constructs that have tremendous relevance in society, and there is an extensive body of literature that discusses the concept and function of these spaces. Before considering the role of neighborhoods in society, the manner in which people shape neighborhoods, the ways in which they drive human experience, and the stark differences between neighborhoods, it is important to start with a more basic understanding of what they are.

In order to define *neighborhood*, it is useful to consider the conceptual difference between neighborhoods and communities. The introduction of this proposal uses the words *neighborhood* and *community* in a seemingly interchangeable way; however, there are crucial differences between the two. The work of Ferdinand Tönnies offers assistance in disentangling these two concepts. His 1887 writing, *Gemeinschaft und Gesellschaft*, distinguishes between two types of human association—*gemeinschaft*, which translates to

“community,” and *gesellschaft*, which translates to “civil society.” According to Tönnies, community is a closer form of human connection that has “a real organic life” as opposed to civil society’s “purely mechanical construction” (Tönnies & Harris, 2001). Tönnies’ vision of community is of a form of human association that morphs as the people involved contribute to or detract from it in varying degrees; whereas civil society consists of the structures, rules, values, and processes that guide human interactions. The concept of neighborhood does not equate to Tönnies’ *gesellschaft*. *Gemeinschaft* and *gesellschaft* focus on different types of human interaction, while the concept of neighborhood is purely structural.

Neighborhoods are constructs that develop from human proximity rather than human association. As one of the early Chicago School sociologists, Lewis Mumford, notes, “In a rudimentary form, neighborhoods exist as a fact of nature... For neighbors are simply people who live near one another... united primarily not by common origins or common purpose but by the proximity of their dwellings in space” (Mumford, 1954, p. 257). While a neighborhood can certainly host community, the key difference between these two concepts is that neighborhoods are defined by a physical space and communities are defined by human association.

Sociologists have always viewed neighborhoods as important social units. Concurrently with Durkheim’s foundational work that established the field of sociology, André-Michel Guerry presented a study that analyzed crime patterns across different neighborhood units (Guerry, 1833). As the field of sociology spread across the ocean to the United States, the use of neighborhoods as units of analysis gained further attention. Most notably, Robert Park, Ernest Burgess, Roderick McKenzie, and Louis Wirth of the

University of Chicago developed an ecological framework for studying cities and focused on distinct geographic units of analysis to ground their work (Robert Ezra Park, Burgess, McKenzie, & Wirth, 1925). Their research demonstrated that natural processes such as symbiosis, competition, and segregation are as visible in the human interactions that take place in cities as they are in nature. Park, in particular, brought attention to the ways in which neighborhood units not only have specific characteristics but can also serve as a structure for building community through human association (Robert Ezra Park, 1952).

### *Selecting Neighborhood Boundaries*

Given the concept that neighborhoods are distinct geographic areas, the next issue is establishing a way to identify the boundaries that define these places. Government bodies, businesses (real estate agents in particular), and area residents all maintain some role in defining neighborhood boundaries. The government must define neighborhood boundaries for purposes of elections, the provision of city services such as firefighters and police officers, and the collection of census data (Suttles, 1972). Most researchers who analyze spatial relationships and employ geostatistical methods resignedly define neighborhoods based on boundaries created by the government because of the availability of data that aligns with these spaces (Bryk et al., 2010; Sampson, 2012; Tate, 2012). Because there is such a wealth of geospatial data from the census, the boundaries defined by the census bureau often serve as proxies for neighborhoods regardless of the lack of real-world significance of these boundaries. The reliance on census boundaries as proxies of neighborhoods is problematic, and some have noted that researchers should focus on the ways in which residents define their neighborhoods to analyze spatial patterns in a more authentic manner (Grannis, 1998).

Despite the diverse range of views on how to best define neighborhood boundaries, there is general agreement that researchers must define the geographic unit of analysis in relation to their specific research topic. Because this study focuses on the relationship between neighborhood and school, school zone boundaries are an appropriate geographic unit for analysis. There is a large body of literature discussing the significance of school zones. Some simply note that school zones serve as a way to organize community life (C. A. Perry, 1914), others demonstrate that parents choose where to live based on school zones (Lareau, 2014), and still others argue that school zones shape housing prices and residential segregation in troubling ways (Bischoff, 2008). This literature supports the use of school zones as a proxy for neighborhood boundaries given their significance in the provision of public education and the ways in which they shape housing patterns.

### *Human Interactions within Neighborhoods*

In addition to having a clear definition of *neighborhood* and understanding how to appropriately delineate the boundaries of these geographic units, it is essential to consider the relationship between neighborhoods and human experience. While neighborhoods have been a constant element of urban life, neighborhood structures and the human associations that take place in them are anything but stagnant. Society has gone through a number of changes that have altered the structure of neighborhoods and shifted the ways in which human beings interact with each other within these physical spaces. The three developments that have arguably had the greatest impact on both the structure of neighborhoods and the ways in which people interact in these spaces are the growth of the suburbs, technological advances in communication, and globalization (Putnam,

2000). Suburbanization led to the ubiquitous use of cars and the often isolating effects of living in detached homes. These structural changes in neighborhoods required a conscious effort to construct community in these new spaces (Jackson, 1985). Suburban neighborhoods stand in sharp contrast to urban neighborhoods, where the sidewalk culture that exists in certain areas inherently generates social connections that can build community (Jacobs, 2011). While Jane Jacobs offers a compelling vision of the potential of urban neighborhoods to build community and Kenneth Jackson offers a damning image of suburbia's inability to produce authentic human interaction, there are countless scholars who have offered contradictory arguments about the prospects of urban and suburban neighborhood structure and community life (C. Perry, 1929; Simmel & Wolff, 1950). The debate over the merits and structures of urban and suburban life is beyond the scope of this study; however, it is worth recognizing both the ever-changing nature and immense variety of neighborhood types both within and between cities, suburbs, and rural areas.

As noted above, technology and globalization have had a tremendous effect on neighborhoods and the ways in which humans view space and place. An extensive body of literature on both technological advances in telecommunication and globalization demonstrates that the significance of space and place has changed as the space, or physical distance, between individuals no longer inhibits human association (Castells, 2000; Giddens, 1990). Along with the diminishing significance of space, there has been a shift in the ways in which people decide upon a geographic place to settle (Henig, 2009). Historically, people chose to live in close proximity to family because social interactions and employment were primarily tied to familial relationships; however, economic

changes that coincide with globalization and technological advances that make it possible to easily communicate with people across great distances have altered the significance of geography. Today, a range of factors such as employment, social bonds, and personal preference play a greater role in determining where people live. Despite the apparent increase in the fluidity of where people choose to live, neighborhoods and the human associations that form in these places remain significant (Sampson, 2012).

### *Neighborhood Effects*

Even though social, economic, political, and technological changes have altered the ways in which humans choose neighborhoods and interact with one another in these spaces, the neighborhood unit continues to be significant. The pioneering work of Eshref Shevky and Wendell Bell in 1955 used census tracts to evaluate the relationship between place and the people who live there. Using measurements for “social rank” (percent of renters versus owners, education levels, and occupation), “urbanization/family status” (percent of women in the workforce, fertility rates, and dwelling type), and “segregation” (an index of racial isolation), these scholars developed the concept of *social area analysis* and demonstrated that neighborhood typologies, in which many residents of an area share certain characteristics, are a common element of our society (Shevky & Bell, 1955). Building on the work of Shevky and Bell, along with that of countless other sociologists, Robert Sampson and a group of his colleagues developed the concept of *neighborhood effects* (Sampson et al., 2002). Sampson identifies the following five conclusions from the immense body of literature relating to neighborhood-level variables:

- First, there is considerable social inequality among neighborhoods in terms of socioeconomic and racial segregation. There is strong evidence on the connection of concentrated disadvantage with the geographic isolation of African Americans.
- Second, a number of social problems tend to come bundled together at the neighborhood level, including, but not limited to, crime, adolescent delinquency, social and physical disorder, low birthweight, infant mortality, school dropout, and child maltreatment.
- Third, these two sets of clusters are themselves related—neighborhood predictors common to many child and adolescent outcomes include the concentration of poverty, racial isolation, single-parent families, and rates of home ownership and length of tenure.
- Fourth, empirical results have not varied much with the operational unit of analysis. The place stratification of local communities in American society by factors such as social class, race, and family status is a robust phenomenon that emerges at multiple levels of geography, whether local community areas, census tracts, or other neighborhood units.
- Fifth, the ecological concentration of poverty appears to have increased significantly during recent decades, as has the concentration of affluence at the upper end of the income scale (Sampson et al., 2002, pp. 446-447).

Sampson demonstrates that neighborhoods bring people together in a shared space where they encounter the same physical structures, access similar resources, experience similar levels of safety, and frequently share similar socioeconomic and cultural backgrounds. This is a result of both human choice and a complex set of political, social, and economic factors. As a result, the neighborhood where a person lives shapes their access to resources that provide opportunities and their interaction with obstacles that hinder advancement (Sampson, 2012; Sampson et al., 2002).

### *Proximity Capital*

An unavoidable result of human proximity in the neighborhood unit is that people who share a neighborhood will have certain commonalities. Tobler's first law of geography states, "everything is related to everything else, but near things are more related than distant things" (Tobler, 1970). Neighborhoods determine whom people

interact with, what resources they are able to access, and what obstacles they encounter. In other words, neighborhoods catalyze cultural capital and social capital. Odis Johnson refers to this “capital of the associations” as *proximity capital* (Johnson, 2008). People who reside near each other and interact with one another come in contact with the forms of capital that their neighbors possess. Through these associations, individuals are able to benefit from the capital that other people possess and co-opt this capital for themselves. The concept of proximity capital adds yet another layer of significance to the human associations that take form through neighborhood life.

### *Residential Segregation and Concentrated Disadvantage*

Proximity capital exacerbates inequality because of the extreme degree of residential segregation in our society. Massey and Denton, along with numerous scholars who follow their lead, calculate an index of dissimilarity as well as an index of similarity to demonstrate that housing is highly segregated in the United States (Massey, 1993).<sup>2</sup> As a result, most people end up living in neighborhoods where they are surrounded by people with similar backgrounds. This leads to concentrations of advantage that allow neighbors with valuable forms of capital to benefit from their cumulative wealth. Conversely, people living in areas of concentrated disadvantage are hindered by the cumulative obstacles of their neighbors.

Not only have scholars documented the negative impacts of concentrated disadvantage (Leventhal & Brooks-Gunn, 2000), but some have even argued that there is

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<sup>2</sup> Measuring segregation is a complex task. There is an ever-growing number of measures of segregation, each with its benefits and drawbacks. One goal of this study is to critically evaluate a number of these measures through an analysis of the varying perspectives they bring to the problem of residential and school segregation. Chapters three and four explore this matter in greater depth.



a tipping point where this concentration of poverty leads to extreme negative social and economic consequences. Scholars have demonstrated that when neighborhood poverty levels exceed twenty percent, entire communities suffer (Galster & Quercia, 2000). Given the fact that residential segregation in the United States has grown since the 1970s, it is unsurprising that the problems associated with concentrated poverty are increasing (S. F. Reardon & Bischoff, 2011).

Massey and Denton contend that residential segregation is the machine that produces all forms of racial and economic inequality. They write,

Residential segregation is the institutional apparatus that supports other racially discriminatory processes and binds them together into a coherent and uniquely effective system of racial subordination... in the absence of segregation, these structural changes would not have produced the disastrous social and economic outcomes observed in inner cities (Massey, 1993, p. 8).

A key feature in this “system of racial subordination” is segregated schools that result from racially isolated neighborhoods. Prior to *Brown v. Board of Education*, school segregation was the norm throughout much of the United States regardless of racial residential segregation. Following the 1954 decision in this landmark case, residential segregation became the scapegoat for school segregation and the mechanism that allowed it to persist (Neckerman, 2007). Today, patterns of residential and school segregation are changing as greater numbers of black and Hispanic families move into suburbs (A.S. Wells et al., 2012). Despite this demographic shift, levels of school segregation persist as many white families move, use public school choice options, or opt out of the public education system altogether (Frankenberg & Orfield, 2012).

Despite the dismal implications of this body of scholarship, some researchers have shown that if society is able to decrease residential segregation, violent crimes drop

(Krivo, 2014), school dropout rates decline (Galster, 1987), and individual earnings rise (Blasius, Friedrichs, & Galster, 2009). There is also strong evidence of the benefits of school integration. A metaregression analysis using hundreds of studies on the relationship between student diversity and educational achievement unequivocally demonstrates that integration leads to improved outcomes while racial isolation can be detrimental to the success of schools (Mickelson, Bottia, Larimore, & Lambert, 2016). In addition to these easily measurable benefits of desegregation, scholars have also identified a number of other positive results of integration that are less tangible. For example, education in diverse settings reduces the propensity for stereotyping and fearing people with different identities. It also provides opportunities for critical thinking about the role that identity plays in shaping our society (Amy Stuart Wells et al., 2016). Furthermore, research shows that diverse groups of people bring together a wide range of perspectives that allow for greater creativity and more successful collaborative problem-solving (Page, 2007). Although research clearly demonstrates the societal benefits of desegregating neighborhoods and schools, segregation persists.

School segregation is on the rise, and more research is needed to understand the current state of segregation as well as the ways in which school zone boundaries hinder desegregation efforts (Orfield, Siegel-Hawley, & Kuscera, 2014). In her book, *When the Fences Come Down*, Siegel-Hawley argues that school zone boundaries must be breached to resolve the school segregation crisis (2016). While Siegel-Hawley provides multiple examples supporting her contention that dismantling school zone boundaries permits desegregation, this dissertation questions Siegel-Hawley's assumption that borders are the problem. Through an in-depth analysis of neighborhood and school segregation in

New York City, Chapter Four investigates the role that boundaries play in shaping segregation. Recent disputes about school rezoning plans on the Upper West Side of Manhattan and the DUMBO neighborhood in Brooklyn highlight the fact that communities use boundaries to concentrate advantage and keep poor children and black and Hispanic children out of their neighborhood schools (Taylor, 2016). Despite the clear role that borders play in perpetuating segregation, this study questions the degree to which removing borders will solve the problem and considers the loss associated with severing the school-neighborhood bond.

Although there is a tremendous amount of research highlighting the connections between concentrated disadvantage and poor educational outcomes, one cannot simply assume that severing the school-neighborhood bond will improve outcomes for disadvantaged children. The following two sections of this chapter consider a range of education reform efforts that specifically target the issue of concentrated disadvantage by altering the relationship between neighborhood and school.

### **A Continuum of Interventions that Separates Schooling from Neighborhood Life**

A collection of education reforms that target both academic outcomes and life chances seeks to separate disadvantaged children from their neighborhoods. Some of these reforms specifically employ mechanisms that remove children from neighborhood life, while others do so unwittingly. There are varying degrees to which these reforms sever the bonds between children and their neighborhoods. Figure 2 illustrates a continuum of school models by strength of the school-neighborhood bond. On one end of the spectrum there are reforms that uproot entire families from poor urban neighborhoods and move

them to middle-class communities where they are provided housing stipends, access to the local public schools, and an entirely new environment; on the other end of the spectrum there are reforms that deepen the connection between a school and its surrounding neighborhood by providing services that target the needs of children, families, and other residents of a community in an effort to improve life for everyone in a school zone. This section of the literature review evaluates reform models that sever the bonds between neighborhood and school, and the following section of the literature review evaluates models that seek to strengthen the bond between neighborhood and school.

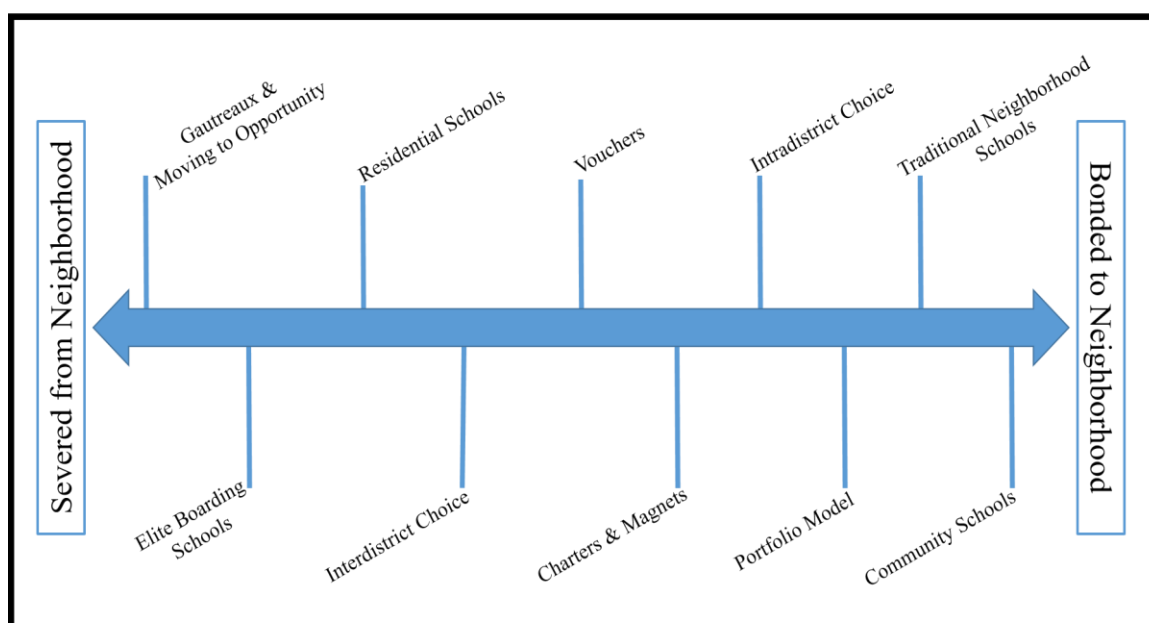


Figure 2: Continuum of School Models by Strength of School-Neighborhood Bond

### *Gautreaux and Moving to Opportunity*

The Gautreaux Project is the most famous program that separated children from neighborhood life. The project emerged as a result of a 1966 class action lawsuit, *Dorothy*

*Gautreaux v. Chicago Housing Authority*, in which the plaintiffs argued that the housing authority had violated the Civil Rights Act of 1964 and federal Housing and Urban Development (HUD) regulations by only building new public housing in areas of concentrated disadvantage. A 1969 federal judgment order directed the housing authority to halt its discriminatory practices of siting public housing solely in poor neighborhoods (Rubinowitz, 2000). In 1976, the case made its way to the United States Supreme Court, which found that HUD was also liable and ordered HUD to remedy the situation for the residents of Chicago who had been affected by the discriminatory practices of the Chicago Housing Authority ("Secretary of Housing and Urban Development v. Gautreaux et al.," 1976). The result of this court order was the Gautreaux Project.

The Gautreaux Project provided housing vouchers for eligible families to move into apartments in neighborhoods where less than thirty percent of the population was African American (Goering, 1986). Between 1976 and 1998, roughly 7,100 of the more than 40,000 families that applied received Section 8 housing vouchers to move into qualifying neighborhoods in the Chicago Metropolitan area (Rosenbaum, 1995). A number of sociologists have studied the Gautreaux Project with great care and conclude that parents were more likely to find stable employment as well as better wages; that children were able to attain higher levels of academic achievement including increased graduation rates and college matriculation levels; and that all family members had better physical and mental health (DeLuca & Dayton, 2009). Despite this clear evidence of success, there is some reason to be cautious given indications that the Gautreaux Project led to feelings of isolation and an increase in levels of stress associated with encountering discrimination from the members of communities that absorbed recipients of the housing

vouchers (Rubinowitz, 2000). Despite these drawbacks and questions about the degree to which this project leads to insidious forms of deculturalization, the improved educational outcomes and life opportunities that resulted are undeniable.

Inspired by the Gautreaux Project's positive results, HUD sponsored a randomized control trial in which volunteer families were assigned to one of three groups—group one received housing vouchers to live in low-poverty areas, group two received housing vouchers to live wherever they wanted, and group three did not receive housing vouchers (Orr, 2003). Unlike the Gautreaux Project, the results of the Moving to Opportunity program were less conclusive. While there was a marked improvement in the physical and mental health of household members who received housing vouchers to live in low-poverty areas, there was less evidence of improvements in employment or educational attainment (Orr, 2011). In fact, Black males living in the low-poverty areas attended college at lower rates. Despite these less dramatic results, some scholars have argued that the HUD-sponsored studies did not track the families for a long enough period and that when disaggregating the data for age groups, there was evidence of highly positive educational and social outcomes for younger children who spent a greater proportion of their lives in the low-poverty neighborhoods (Briggs, 2010). Despite the lingering uncertainty of the overall effects of programs that move entire households from disadvantaged neighborhoods to advantaged neighborhoods, this intervention has clearly had many positive impacts on health, economic, and educational outcomes for many of the people involved. However, the scalability of such programs is highly suspect given the obvious funding issues and resistance from host communities.

### *Residential Schools*

After the Gautreaux Project and the Moving to Opportunity Program, the next two types of education models shown in Figure 2 are elite boarding schools and residential schools. Both of these school models separate children from their immediate neighborhood and thrust them into a highly controlled society. While there is a wide range of types of boarding schools, this literature review focuses on two: (1) elite boarding schools with vast resources that have allowed them to place some attention on building diverse communities within their institutions and (2) residential schools that specifically serve children from disadvantaged backgrounds.

Many graduates of elite boarding schools attend the best universities in the country and enter positions of leadership across all sectors of our society. Though admittedly outdated, statistics from 1984 demonstrate that a remarkable 42% of elite boarding school applicants are accepted to Ivy League colleges while only 26% of national applicants receive an acceptance letter from an Ivy League institution (Cookson & Persell, 1985, p. 185). The most obvious drawback of these schools is that they primarily serve affluent members of the upper class. One elite boarding school, Phillips Academy Andover, claims that it costs over \$70,000 per year to educate each of its students, even though tuition charges are a comparative bargain at \$42,350 (Hacker, 2011). In Cookson and Persell's 1985 study, they argue that because these schools serve affluent families that can afford the steep tuition, they have had an isolating effect, separating the children of the elite from the rest of society and aiding in the perpetuation of the upper class' dominance in various facets of society (Cookson & Persell, 1985). However, some elite boarding schools have demonstrated a strong desire to change this narrative.

In the early 1960s, a group of twenty-three elite independent schools made a commitment to diversify their student bodies by race and class ("History of A Better Chance," 2014). Along with the help of nonprofit organizations like A Better Chance and Prep for Prep, elite boarding schools have increased their diversity over the past fifty years ("History of Prep for Prep," 2014). Besides working with outside organizations that assist in recruiting, preparing, and covering the tuition costs for students from disadvantaged backgrounds, elite boarding schools have made their own efforts to seek students from low-income families. In 2008, Phillips Academy Andover became the first elite boarding school to implement a need-blind admissions process. When announcing the first incoming class of students admitted through the need-blind process, Andover noted that forty percent of accepted students were awarded scholarships, that eleven percent of the student body would be receiving full scholarships, and that the financial aid cost for the incoming class would be \$4,861,000 (Fried, 2008). While other elite boarding schools have not been able to make a continued commitment of this kind to need-blind admissions, they have made strides in increasing economic and racial diversity.

Despite the fact that these schools only serve a small group of youth, their approach to education warrants attention. Cookson and Persell (1985) note that boarding schools have the unique ability to affect all aspects of a child's development, because, in addition to educating students, they control what students eat, where students sleep, who students interact with, and what students do in their free time. Boarding school students' regimented schedule ensures that students eat well, remain physically active, obtain sufficient amounts of sleep, and devote a large portion of their free time to studying.



Furthermore, the approach to education at elite boarding schools emphasizes critical thinking, problem solving, and moral reasoning. Elite boarding schools inspire a passion for learning in students and guide students in the development of a strong work ethic (Khan, 2011). While many of the graduates of elite boarding schools who originate from low-income neighborhoods praise their high school experience and the life-changing effects that it inspired, they also note that strong vestiges of classism, sexism, and racism remain in these institutions and create unique obstacles for students not arriving at such schools from privileged homes (Smock, 2013). Regardless of these challenges, the use of elite boarding school education as an intervention to enhance opportunities for children from disadvantaged backgrounds has positive effects and warrants attention.

Along with elite boarding schools that are increasingly seeking ways to serve children from disadvantaged backgrounds, there are a number of residential schools that only serve students from disadvantaged backgrounds. It is important to recognize that these schools fall on a different point in the spectrum of programs that address inequality through interventions that separate a child's educational experience from neighborhood life because the community formed in these schools involves a different student population. Some of these residential schools, such as the Scotland School for Veteran's Children in Pennsylvania, the Milton Hershey School, and Girard College were originally founded to serve orphans (Logue, 2002). More recently, a small number of residential schools that use a mix of private and public funds, such as the SEED charter school in Washington, D.C. (made famous by Davis Guggenheim's *Waiting for Superman*), seek to improve academic achievement and life outcomes by removing children from their neighborhood to study and live in highly-controlled residential schools (Matthews, 2004).

There are no existing studies that rigorously assess the success of these institutions, but it seems likely that they involve a mix of positive results. When scholarly literature does address this form of residential schooling, it has focused on the paternalistic and potentially deculturalizing effects of such institutions (Whitman, 2009).

### *The School Choice Movement*

Beginning in the 1990s, the concept of school choice gained support, grew in popularity, and offered yet another way to dislodge children from their neighborhoods through alternative modes of enrolling in school. School choice comes in many different forms, but the central tenet of each is that all families, regardless of race or income, should be able to choose the school that they think is best for their child. The various forms of school choice all share the fact that they provide families with an alternative to their neighborhood school. In theory, this model provides all families with the opportunity to choose a better school for their children; however, data shows that when systems of school choice are implemented, they further stratify achievement by race and income. According to research summarized by Douglas Lauen, a number of studies found that white parents and parents with higher socioeconomic status are more likely to take advantage of school choice options (Lauen, 2007). Given this reality, reformers must remain wary of using school choice as a tool for reducing the achievement gap.

One key debate surrounding school choice is whether it can be a tool for desegregation. In theory, school choice allows children to cross neighborhood boundaries in a way that can circumvent patterns of residential segregation to integrate schools. A report from the Brookings Institution finds that school choice neither increases nor decreases segregation (Chingos, 2013). Most research contradicts this finding and

contends that school choice increase levels of segregation (Orfield & Frankenberg, 2013).

While school choice has the potential to aid in school desegregation, current school choice policies have failed to make this a reality in most places. As Orfield and Frankenberg argue,

Unregulated choice tends to comfort the privileged, take pressure off demands for change in the larger system, protect more-affluent schools from any change, and offer illusory opportunities to the poor, blacks, and Latinos... If we clarify what we want, understand the preconditions of fair and successful outcomes, and put the policies that foster them into operation, we will make our society fairer and more successful (Orfield & Frankenberg, 2013, p. 269).

Until school choice policies are crafted to directly address issues of segregation, this reform model will allow segregation to persist in the same way it does in many neighborhood schools.

School choice comes in a variety of forms, including vouchers, charter schools, magnet schools, interdistrict choice, and intradistrict choice. Voucher systems are unique in that they encompass the full range of private and public school models. The theory behind voucher systems is that all families should be provided with a set amount of money to spend on education. Parents can choose where to use their education vouchers, therefore letting the market determine which schools thrive and which schools collapse. Milton Friedman first presented the idea of school vouchers in a 1955 paper in which he argued that the government has a responsibility to fund education but not administer it. The guiding principle behind Friedman's work is that "here, as in other fields, competitive private enterprise is likely to be far more efficient in meeting consumer demands than either nationalized enterprises or enterprises run to serve other purposes" (Friedman, 1955). While a voucher system may lead to the competition between schools that Friedman believed would benefit all children, many scholars note that the

inequalities and injustices that capitalism produces in our economic system would spill into our education system to an even greater degree than they already do. In *The Manufactured Crisis*, Berliner and Biddle present evidence that voucher programs would provide wealthy families with a tax break on private education while low-income families would end up in the same public schools (D. Berliner & B. Biddle, 1997). Despite strong evidence that voucher programs do not close the achievement gap, conservatives' support of the model and Donald Trump's pro-voucher Secretary of Education may lead to a dramatic expansion in the use of school voucher programs.

Some scholars argue that voucher programs did not gain enough support because many people find the model of publicly funding private institutions of education to be too radical (Hess, 2010). In turn, these reformers turned to the more palatable idea of charter schools to create a public form of market competition between schools and to provide families with more options for their children. Charter schools are public schools, but they are autonomous entities that are free from many of the regulations imposed on traditional public schools. Beginning in the 1990s, charter schools have been growing in popularity and are currently the focal point of the school choice movement. If families are unhappy with their local public school, they can now seek enrollment in one of the roughly 6,500 charter schools that exist in the United States (U.S. Department of Education, 2016). In the 2013-2014 school-year, over 2.5 million children opted out of traditional public schools and into a charter school (U.S. Department of Education, 2016).

When Al Shanker, former President of the United Federation of Teachers, and Ray Budde, an education professor at the University of Massachusetts in Amherst, conceived the idea of charter schools in the 1970s and 1980s, they envisioned a provision that would

allow for groups of teachers to administer a small number of schools free from traditional oversight in an effort to experiment with innovative approaches to schooling (Budde, 1988; Ravitch, 2010). Neither Shanker nor Budde would approve of the use of charter schools as a tool for creating market competition in public education. Regardless, charter schools exploded in popularity in the 1990s following the publication of Chubb and Moe's *Politics, Markets, and America's Schools*. In this book, Chubb and Moe argue that school choice is the only way to rescue the country's failing education system (Chubb & Moe, 1990). Today, forty-two states have provisions allowing for charter schools, the most common form of school choice (U.S. Department of Education, 2016).

Recent media coverage of charter schools has given society the impression that charter schools provide a vastly better education than traditional public schools (Guggenheim, 2011). Available data suggests a more complicated reality. In 2009, a heated debate between a group of researchers at the Center for Research on Education Outcomes (CREDO) at Stanford University and Caroline Hoxby, also of Stanford University, questioned the degree to which charter schools were offering a sound educational experience. The CREDO report noted that seventeen percent of charter schools provide "superior education," half of charter schools "have results that are no different from the local public school options," and thirty-seven percent "deliver learning results that are significantly worse" (CREDO, 2009). Hoxby argued that methodological flaws led to a downward bias in the effectiveness of charter schools (Hoxby, 2009). Concurrently, Hoxby issued a report arguing that New York City charter schools were able to more effectively close the "Harlem-Scarsdale achievement gap" than traditional public schools (Hoxby, Murarka, & Kang, 2009). Scholars, such as Sean Reardon,

delivered strong critiques of Hoxby's methods and argued that her reports created an upward bias that favored charter schools (S. Reardon, 2009). In a study that is highly representative of the general consensus about the effectiveness of charter schools Barr, Sadovnik, and Visconti find that some Newark charter schools are above average, some are average, and some are below average (Barr, Sadovnik, & Viscoti, 2006).

Unfortunately, charter schools only seem to benefit the lucky few that obtain a coveted spot at one of the above average schools. Ultimately, the mixed results of charter schools indicate that there are more powerful factors impacting academic achievement than the type of school autonomy and organizational structure that charter proponents claim are the roots of school failure.

One set of charter schools, commonly referred to as "no excuses" schools, have consistently maintained above average levels of academic achievement. Schools such as the KIPP Academies and the network of Uncommon Schools maintain the belief that poverty is not an excuse for poor academic achievement. These schools offer a range of academic supports including longer school days, tutoring, and an extended school year to raise the outcomes of minority students and shrink the achievement gap (Hess, 2010). Despite the high achievement levels of students at these "no excuses" schools, critics argue that the school model is not replicable across whole school districts. A number of education scholars note that these "no excuses" schools only serve students from families who place a premium on education (Lubienski & Weitzel, 2010). These critics argue that a family's value for education is the key factor that allows "no excuses" schools to achieve such remarkable results (Tough, 2006). Additionally, some have noted that these schools aim to quarantine students from their neighborhoods in an effort to change the

culture and values of their students (Tough, 2008). Critics claim that this deculturalization is offensive and unproductive. Despite these compelling critiques, the high academic achievement of “no excuses” schools and their commitment to their students provides a notable model of education (Ratner & Nagle, 2016).

A less common form of school choice is the provision of interdistrict enrollment options. Some interdistrict transfer programs, such as Boston’s METCO program, have found great success in raising minority achievement levels by busing inner-city students to suburban school districts (Cronin, 2011). In Connecticut, policy makers developed a more controversial interdistrict transfer program in response to a court order in *Milo Sheff et al. v. William A. O’Neill et al.*. The court found that Connecticut’s school districts perpetuate a system of racial and ethnic isolation (“Milo Sheff et al. v. William A. O’Neill et al.,” 1996). Following the 1996 decision, the Connecticut State Legislature instituted an interdistrict transfer system that allowed children in Hartford—who are predominantly black or Hispanic—to attend public schools in the suburbs while suburban children could attend new magnet schools in Hartford. Research indicates that this interdistrict choice model has lessened school segregation levels and reduced achievement gaps (Cobb, Bifulco, & Bell, 2009). Despite these examples, interdistrict transfer programs remain unpopular in affluent suburbs where residents are fearful of accepting inner-city youth into their schools.

Magnet schools, yet another form of school choice, have been a part of the public education system even longer than charter schools. Magnet schools are public schools that focus on a specialized curriculum or a specific theme. Similar to charter schools, magnet schools serve students from across a district or region instead of an isolated

neighborhood. In many areas, magnet schools accept students through competitive exams and interview processes. As a result, typical magnet schools foster high levels of academic achievement. The most obvious drawback of magnet schools is that they generally target a population of students with a prior history of superior academic achievement. The primary argument against magnet schools is that they separate these high-achieving students from the wider population. However, some school districts have been able to use magnet schools as a tool for raising district-wide academic achievement and reducing the achievement gap. The Wake County School system, which encompasses Raleigh and its surrounding suburbs, has strategically placed magnet schools in inner-city neighborhoods to attract affluent suburban families away from the suburban schools in their neighborhoods (Grant, 2009). Wake County, similar to Hartford, has used magnet schools as part of a larger plan that transfers low-income inner-city students to suburban schools and more affluent suburban students to city schools.<sup>3</sup> Many affluent suburban families seek out the inner-city magnet schools because of their specialized curriculum and high levels of success. The Wake County School System's use of magnet schools contributed to a remarkable ninety-three percent state test passage rate in 2003 (Grant, 2009). While magnet schools alone don't necessarily aid in resolving the failings of the U.S. education system, they can be part of a more expansive education reform strategy.

School vouchers, yet another form of school choice, provide children with the option to use public dollars to offset the cost of private school tuition. The new Secretary

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<sup>3</sup> One key difference between the models in Wake County and Connecticut is that Wake County is a single school district while the schools part of the transfer program in Connecticut are in multiple districts. This allows Wake County to use an intradistrict choice model while Connecticut relies on an interdistrict model.



of Education, Betsy DeVos, is a strong proponent of vouchers and is likely to push this education model in the coming years. The idea behind vouchers is that they give families more choice to leave a neighborhood school and attend a school they believe is better. Scholarship strongly demonstrates that vouchers do not improve educational outcomes, they take funding away from public schools, and that they open a pathway for the destruction of our public education system (Dynarski, 2016; Figlio & Karbownik, 2016; Mills, Elaite, & Wolf, 2016).

Vouchers, charter schools, interdistrict choice, magnet schools, and intradistrict choice all offer distinct approaches to school choice; yet school districts rarely rely on a single approach to providing parents with educational options. Bulkley, Henig, and Levin demonstrate that the most common approach to urban education reform and the deployment of school choice is through a portfolio model (Bulkley, Henig, & Levin, 2010). The portfolio model allows school districts to provide a variety of school options, such as those found in New York City where high school students can choose from publicly-funded charter schools, magnet schools, vocational schools, comprehensive high schools, and specialized high schools. In fact, many urban districts, like New York City, no longer have traditional high schools zoned by neighborhood. As a result, an increasing number of students are attending schools that are not tied to a specific place, making it impossible to build upon the historical bond between neighborhood and school. As this section of the literature review has shown, severing the ties between neighborhood and school appear to have positive results when it takes the extreme form of thrusting children into new communities that are free from the scourges of concentrated disadvantage. However, school choice models that leave children in

neighborhoods of concentrated disadvantage while allowing them to attend school elsewhere have mixed results. The following section of the literature review considers a set of interventions that aim to strengthen the bond between neighborhood and school in an effort to improve both educational and life outcomes. Together, these two sections of the literature review will serve as the foundation of this study on the utility of the bond between neighborhood and school.

### **The Community School Model in Theory and Practice**

Most public schools attempt to provide a range of programs and services beyond traditional instruction in order to best support the multifaceted needs of their students. In recent years, urban schools serving students from disadvantaged backgrounds have increased efforts to provide additional services and programming to offset the impact of poverty on academic performance. While numerous liberal school reform policies aim to provide support services to students from disadvantaged backgrounds, one more radical approach, the community school model, seeks to extend support services to all residents of a neighborhood along with building social networks that engage community members and provide them with the opportunity to build the tools necessary to advocate for their own needs. In contrast to the interventions discussed in the previous section, the community school model specifically aims to strengthen the bond between schools and neighborhoods to affect change.

The community school model is a loosely defined approach to integrating the provision of social services into a school's structure along with building social engagement within the neighborhood. Numerous scholars and agencies have written

about community schools, promoted the use of community schools, and attempted to define this approach to education (Clapp, 1939; Dewey & Boydston, 1976; Dryfoos, Quinn, & Barkin, 2005; Noguera & Wells, 2011). The Coalition for Community Schools, a non-profit organization based in Washington, DC, offers a definition that serves as a useful starting point for understanding this school model. According to the Coalition for Community Schools,

A community school is both a place and a set of partnerships between the school and other community resources. Its integrated focus on academics, health and social services, youth and community development and community engagement leads to improved student learning, stronger families and healthier communities. Schools become centers of the community and are open to everyone—all day, every day, evenings and weekends ("What is a Community School?," 2011).

While this definition is not a comprehensive description of the countless interpretations of the community school model, it serves as a useful starting point for an investigation into the merits of this reform. Today, numerous schools and districts across the nation are actively working to implement the community school model and offer some combination of academic enrichment courses, tutoring services, adult education courses, parenting instruction classes, medical services, mental health services, nutrition support, housing assistance, legal services, childcare, social work services, and community empowerment programs.

The Harlem Children's Zone (HCZ) popularized the community school model in its approach to schooling. Media portrayals of the Harlem Children's Zone, such as Guggenheim's *Waiting for Superman*, and the Obama Administration's use of the Harlem Children's Zone as a model for its Promise Neighborhoods Initiative have brought attention to the tenets of the community school model. In a 2009 speech, Secretary of Education Arne Duncan commented, "President Obama was so impressed by HCZ that

he made it the template of his Promise Neighborhoods proposal during the campaign” (Duncan, 2009). Before looking at the principles and potential of community schools, it is important to consider the case of HCZ because of both its fame and the contradictions that exist between the theoretical model it relies on and its actual practices.

Geoffrey Canada, the founder of the Harlem Children’s Zone, sought to revitalize a ninety-seven block area in Harlem through a range of support services and a strong neighborhood school (Tough, 2008). However, Canada chose to use a charter school model to undertake this project to avoid potential roadblocks imposed by the teachers union and the bureaucracy of the New York City Department of Education. As discussed in the previous section, charter schools, by law and by definition, are unzoned and open to all students in a school district. As a result, Canada’s model employed two contradictory elements—a desire to revitalize a specific neighborhood and a reliance on a school model that separates schools from a defined place. In a 2011 study, Dobbie and Fryer find that an HCZ student’s place of residence within or beyond the boundaries of the ninety-seven block neighborhood where Canada focuses his services does not determine that student’s academic success as measured by standardized test scores (Dobbie, 2011). Dobbie and Fryer conclude that wraparound services are irrelevant and that school structure is the most important factor in improving academic success. While Dobbie and Fryer’s methods are sound and their argument is compelling, they limit their findings by focusing solely on student test scores. Furthermore, their research does not question the value of the bond between neighborhood and school nor does it consider the fact that relying on a school model that severs the bond between school and community

might weaken the intended effects of a community school model. This dissertation seeks to investigate these crucial elements that are missing from Dobbie and Fryer's work.

In an effort to elucidate the ways in which strengthening the bond between schools and neighborhoods may improve academic achievement and enhance life outcomes for students from disadvantaged backgrounds, the following section discusses the sociological underpinnings of the community school model and offers a brief history of the community school ideal. One of the central tenets of community schools is that they strive to build community engagement. While this study does not specifically focus on schools that define themselves as *community schools*, it seeks to understand if there is a relationship between levels of community engagement, the strength of the bond between schools and neighborhoods, and the student outcomes at traditional neighborhood schools. The following pages present the theoretical framework that supports the community school model and some historical examples of schools that employ this approach to schooling in an effort to contextualize the significance of the bond between neighborhood and school.

### *Sociological Underpinnings of the Community School Model*

The community school model arises from many of the theories on poverty, disadvantage, and inequality of educational opportunities and achievement previously discussed. Because the lowest achieving students generally live in the most disadvantaged neighborhoods and attend the most under-resourced schools, reform efforts that aim to improve outcomes for these students must be as dramatic and comprehensive as the situation requires. Broad reform efforts, such as the community school model, might aid in disrupting poverty and educational inequality. Earlier sections

of this chapter outlined broad definitions of a range of sociological theories relating to extreme disadvantage in schooling and neighborhood life. This section considers two of these theories—cultural capital and social capital—more specifically, in an attempt to explain the mechanisms that community schools hope to use to promote equality of opportunity and achievement.

As noted earlier, cultural capital, a concept conceived by Pierre Bourdieu, is broadly defined as the “general cultural background, knowledge, disposition, and skills” of a particular group of people (MacLeod, 2009). In *Unequal Childhoods: Class, Race, and Family Life*, Annette Lareau relies on Bourdieu’s theory of cultural capital to illustrate how middle class parents shape the culture of public schools and transmit a specific set of values to their children through their parenting at home and the teaching that takes place in academic institutions (Lareau, 2011). Lareau’s primary contribution is her distinction between middle class and poor and working class parenting styles. According to Lareau, middle class parents undertake a process of *concerted cultivation*, in which they structure their children’s lives around organized activities that cultivate problem-solving skills, a confident communication style, and a sense of entitlement. On the other hand, working class and poor parents rely on *the accomplishment of natural growth*, which simultaneously teaches children to direct their own free time while respecting and deferring to authority figures. Lareau notes that economic resources play an important role in shaping these parenting styles and in allowing middle class parents to provide their children with costly opportunities such as piano lessons, academic tutoring, visits to cultural institutions, access to newspapers and magazines, and trips to stimulating locations around the world. Ultimately, the stark contrast in the experience of

growing up in a middle class home versus a working class or poor home shapes a child's culture and access to a wide range of opportunities (Coughlan, Sadovnik, & Semel, 2014). While community schools cannot, and probably should not, fully take on the role of parent, they do aim to provide disadvantaged students with many of the same opportunities that children from middle class backgrounds access through their families. Furthermore, community schools seek to actively cultivate the problem-solving skills, and confident communication style that are central components of the middle class culture (Noguera & Wells, 2011).

In addition to providing students from disadvantaged backgrounds with the opportunities and cultural capital common in middle class families, community schools also seek to offer children a form of social capital that can improve their chances of extricating themselves from poverty. As noted in the previous section, social capital is loosely defined as an individual's human network and group membership. After studying education reform in Chicago for decades, Anthony Bryk presented his broad findings and noted that social capital plays an essential role in improving outcomes for poor and minority students. In *Organizing Schools for Improvement: Lessons from Chicago*, Bryk claims that community social capital is essential for school reform in disadvantaged neighborhoods (Bryk et al., 2010). More specifically, Bryk argues that disadvantaged communities require *bonding* social capital to build cohesion and a shared will to work towards improved conditions and *bridging* social capital to access outside resources that will allow for improvements to take shape. Bryk's analysis of reform in Chicago highlights the fact that people living in disadvantaged neighborhoods have extreme

obstacles to building these forms of social capital because of poverty and its associated challenges. As Bryk writes,

The schools most disadvantaged by community context have to develop the strongest internal organizational supports to effect significant improvements for their students. Unfortunately, our data also indicate that achieving such organizational strengths is an exceedingly difficult task in highly disadvantaged community contexts... Hence a reform conundrum emerges. The schools that must develop strong essential supports will also often lack social capital in their school communities and may also confront an extraordinary density of student needs... In communities where there are few viable institutions, where crime, drug abuse, and gang activity are prevalent, and where palpable human needs walk through the school doors virtually every day, a much more powerful model of school development is needed—one that melds systemic efforts at strengthening instruction with the social resources of a comprehensive community schools initiative. (Bryk et al., 2010)

Ultimately, Bryk contends that high levels of bonding and bridging social capital are essential conditions for reform. While he notes that there is no research on whether or not the community school model can effectively foster the growth of bonding and bridging social capital, Bryk hypothesizes that this comprehensive school reform, in theory, has the potential to build social capital in disadvantaged neighborhoods.

While Bryk's work demonstrates an empirical connection between social capital and higher levels of educational opportunity and student achievement, he does not offer a thorough analysis of the mechanisms by which social capital creates improved conditions for children. Ricardo Stanton-Salazar provides a theoretical explanation of such a mechanism. Stanton-Salazar offers a framework that explains how social capital, through institutional agents, provides the necessary mechanism that allows students from disadvantaged backgrounds to "overcome the odds." As Stanton-Salazar writes, "When low-status youth do overcome the odds, it is usually through interventions that embed



them in a network of institutional agents connected to services, organizations, and resources oriented toward their empowerment. Interventions absent of rich social capital and resource-generating networks regularly fail” (Stanton-Salazar, 2011). According to Stanton-Salazar, institutional agents are individuals who can transmit the cultural capital needed to advance in society. Stanton-Salazar is careful to argue that these institutional agents must not only provide students with the social connections and cultural resources to extricate themselves from poverty, but that they must also empower youth to envision a world without poverty so that they do not become part of a system that perpetuates the high level of social and economic stratification that currently defines our society. Although Stanton-Salazar’s work does not specifically reference the community school model, his vision of institutional agents providing the social and cultural capital needed to overcome disadvantage supports the reform as well as the more general idea of strengthening the bonds between schools and neighborhoods.

Yet another important sociological theory that draws upon the concept of social capital to demonstrate the power of human connections to affect change is Robert Sampson’s concept of *collective efficacy*. Sampson defines collective efficacy as “social cohesion among neighbors combined with their willingness to intervene on behalf of the common good” (Sampson et al., 1997). A growing body of literature demonstrates a range of positive outcomes associated with high levels of neighborhood collective efficacy regardless of race or class. Most research focuses on the inverse relationship between levels of collective efficacy and crime (Sampson, 2012); however, scholars have also shown that higher levels of collective efficacy are correlated with lower levels of substance abuse (Fagan, Wright, & Pinchevsky, 2014), lower levels of depression (Vega,

Ang, Rodriguez, & Finch, 2011), and improved health (Ahern, Galea, Hubbard, & Syme, 2009). There are no existing studies that rigorously evaluate the relationship between collective efficacy and educational outcomes. But, given the wide range of literature documenting the relationship between variables shown to correlate with collective efficacy, such as lower crime and greater health, there is reason to hypothesize a connection between collective efficacy and educational outcomes.

Given the study's interest in seeking a correlation between collective efficacy and educational outcomes and questioning whether increases in collective efficacy could improve achievement, it is important to ask if collective efficacy is stagnant or if there are mechanisms that can affect levels of collective efficacy over time. Unfortunately there is little research on either of these topics. Preliminary results from a study by Brisson and Walker suggest that collective efficacy can change over time (Brisson & Walker, 2014); however, there is no research that indicates what mechanisms can influence levels of collective efficacy. This study attempts to address this question in part and hypothesizes that strengthening the bond between schools and neighborhoods increases levels of collective efficacy. In order to begin this exploration and offer some context for the argument that strengthening the bond between schools and neighborhoods may increase collective efficacy and improve a range of neighborhood-level and school-level outcome variables, the following section of the literature review discusses the historical development of the community school model and its application throughout the past century.

### *Constructing the Community School Ideal*

The concept of community schools was first articulated in a paper that John Dewey delivered to the National Council of Education in 1902 (Dewey, 1902). Prior to the work of Progressive Era scholars and activists such as John Dewey, the work of public schools focused almost entirely on the dissemination of knowledge to society's youth. While public education had taken hold in the United States during the middle of the nineteenth century, the original public schools and the work that took place inside of them changed dramatically between the 1850's and the early 1900's. Progressive Era education systems moved away from the simple memorization and recitation of facts that characterized the first public schools and embraced a curriculum that aimed at developing skills and knowledge that would allow all members of society to participate in the country's workforce and democracy. This section of the literature review tracks the history of the community school model from its origins in the Progressive Era through its growing implementation today.

The development of the community school ideal was intimately connected to Progressive Era social and educational reforms responding to the influx of immigrants and the social ills that accompanied industrialization and poverty. Before the community school ideal came to inhabit the realm of public education, it was put into practice through the work of settlement houses. Social activists, such as Jane Addams, were working assiduously to combat urban poverty and engage immigrants in democratic life through services offered at settlement houses. Jane Addams' Hull House was a center of community life for the urban poor at the turn of the nineteenth century, and education was central to all of the social service work that took place there. Jane Addams believed that education, accompanied by a range of social services, could effectively assimilate new

immigrants, provide them with the skills necessary for employment, and engage them in democratic life. As Jane Addams wrote in *Twenty Years at Hull House*, “The educational activities of a Settlement, as well its philanthropic, civic, and social undertakings, are but differing manifestations of the attempt to socialize democracy, as is the very existence of the Settlement itself” (Addams, 1910). While Jane Addams was conducting her work at Hull House, education reformers, such as John Dewey, were searching for ways to improve public education systems, particularly for populations with the greatest level of need.

The philosophy behind settlement houses and the work that took place in these institutions guided John Dewey to establish the community school ideal. Dewey's 1902 paper, *The School as Social Centre*, argued that schools should provide the full range of social services needed to support the communities they serve. Drawing from the model enacted by Jane Addams at Hull House, Dewey theorized that centralizing services would ensure the efficient and effective use of these services. In this paper, Dewey attributes his concept of the community school ideal to his observations of Jane Addams' work. Dewey writes,

What we want is to see the school, every public school, doing something of the same sort of work that is now done by a settlement or two scattered at wide distances through the city. And we all know that the work of such an institution as Hull House has been primarily not that of conveying intellectual instruction, but of being a social clearinghouse (Dewey & Boydston, 1976).

Throughout Dewey's *The School as Social Centre*, he offers a description of the types of social services he envisions schools offering. Some examples of these services include health services, adult education, physical activities, educational enrichment, job training, and community organizing. By meeting the needs of children and their families through

the distribution of social services, Dewey argues that schools will be providing students with the resources needed to succeed academically (Benson, Harkavy, & Puckett, 2007). While Dewey goes to great lengths to describe the ways in which schools should provide social services, his primary aim in this paper, as well as in some of his subsequent work, is to argue that schools must strengthen the social bonds between community members to improve human interactions and enhance our democracy (Dewey, 1902).

A number of Progressive Era scholars built upon Dewey's community school ideal to argue for strengthening the bond between neighborhoods and schools. In his 1915 work, *The Social Center*, Edward Joshua Ward articulates this vision of a strong bond between neighborhood and school, writing

The proposal to have in every neighborhood in America an institution wherein people may and will gather of right, across all different lines of opinion, creed and income, upon a common ground of interest and duty, just as neighboring citizens, is not a new project. On the contrary, such an institution not only is now established, but it is the fundamentally and supremely essential institution of our government. Democracy would be impossible without such a converging point in each community. Whatever change we may make in the machinery of public business administration, the common neighborhood gathering place, the social center, must remain—the permanent institution of America (Ward, 1915).

Along with arguing that the link between neighborhood and school is essential to democracy, Ward details the ability of schools to enhance life for the residents of an area by offering them opportunities to learn through adult education programs and public lectures, to socialize through festivals and informal interactions, and to care for their physical health through organized recreational activities and access to medical services. During the Progressive Era, reformers attempted to implement the vision of schools as social centers in communities across the country (Reese, 1986).

### *The First Community Schools*

Despite the fact that the community school model was originally envisioned in 1902, the first school to fully embrace this approach to public education and label itself a “community school” did not open until 1929. Not surprisingly, it was one of Dewey's protégés, Elsie Clapp, who was responsible for the development of the first community schools. Elsie Clapp worked closely with John Dewey throughout her career after studying under him at Columbia from 1907 through 1912 (Stack, 2004). Following her studies at Columbia, Clapp worked at a number of different schools that were implementing Progressive Era educational goals. In 1929, Clapp moved to rural Kentucky to develop the Ballard School using the community school model. The central features of this school that distinguished itself as a community school were health services, adult education classes, and recreational opportunities. Because of the community's state of poverty, made worse by the Great Depression, the constituents of the community had many unmet needs. By focusing on these needs, Clapp's Ballard School was able to provide children and their families with the resources required to ensure that a child could make the most out of his or her education (Clapp, 1939).

Following her work in Kentucky, Clapp was hired to develop a community school as part of a New Deal project in Arthurdale, West Virginia. In her 1939 book, *Community Schools in Action*, Clapp describes the progression of her work as she moved from Kentucky to West Virginia by writing, “It was in Kentucky that we came to an understanding of the nature and functioning of a community school. In Arthurdale, West Virginia, we built a community school and used it as an agency in community education” (Clapp, 1939, p. 3). Clapp's community school in Arthurdale provided a more comprehensive range of services to students and their families than the Ballard School in

Kentucky. The school was built over the course of several years and eventually consisted of a central school building, a recreation center, and separate buildings for the nursery school, primary grades, elementary grades, and high school. The buildings contained classrooms, a gymnasium, an assembly hall, a cafeteria, kitchens, workshops, meeting rooms, science rooms, health facilities, and a library. All of these spaces were available not just to the students but to all members of the Arthurdale community (Clapp, 1939).

Eleanor Roosevelt and President Franklin Delano Roosevelt supported the community school in Arthurdale and visited on several occasions. As a New Deal project, Arthurdale's community school strove to overcome the poor social and economic conditions of its citizens, by engaging all members of the community in education, health, and politics through the school. Unfortunately, the community school in Arthurdale was unable to sustain its ambitious goals once funding for the project ran its course (Semel & Sadovnik, 1999).

Another example of an early community school is Benjamin Franklin High School in East Harlem. During the mid 1930's, the principal of Benjamin Franklin High School, Leonard Covello, used the same Progressive Era ideas that drove Elsie Clapp's work to structure his school to become a center of community life in East Harlem. Covello dedicated himself to making Benjamin Franklin High School both a center of community life and an instrument for social and economic advancement for all members of the East Harlem neighborhood. Unfortunately, funding issues and Covello's eventual departure from Benjamin Franklin High School led to the complete disintegration of the school's use of the community school model by the early 1950's (Johanek & Puckett, 2007).

A complex set of interrelating factors led to the breakdown of the use of the community school model at the Ballard School, Arthurdale, and Benjamin Franklin High School. Each of these schools was embedded in distinct communities that were characterized by their own sets of social, economic, and political conditions. Still, the demise of the community school model in all three of these cases occurred in response to two common factors—the departure of leaders who had been powerful Progressive Era visionaries and the loss of New Deal funding.

Strong, committed leadership is an essential element to the success of any large-scale project such as the implementation of a community school model in public education (Semel, Sadovnik, & Coughlan, 2016). Arthurdale and the Ballard School both had the benefit of Elsie Clapp's leadership, and Benjamin Franklin had the good fortune of Leonard Covello's leadership. These two visionaries were well respected in both academic and political networks, and they drew upon these networks extensively to support their work. Elsie Clapp not only remained in close contact with John Dewey and an extensive network of respected Progressive educators, but she also developed political allies from local governments all the way up to President Franklin Delano Roosevelt and his wife Eleanor Roosevelt. Leonard Covello was revered as a sociologist in the academic realm and a close friend of New York City Mayor Fiorello La Guardia. When Elsie Clapp left the Ballard School, the community school vision departed with her (Benson et al., 2007). Similarly, when she departed Arthurdale, the community school model floundered and eventually disappeared from the school (Semel & Sadovnik, 1999). Covello stayed at Benjamin Franklin High School for a much longer period of time than Clapp was at either Ballard or Arthurdale. Even when his school encountered funding



problems as New Deal funding shifted to pay for World War II, he persevered in implementing the community school model. However, once Covello left Benjamin Franklin High School, the community school model, which was already struggling because of funding issues, collapsed. The fact that the community school ideal collapsed when strong leaders departed suggests that none of these schools had fully implemented the vision of making the school a true social center of neighborhood life. Had Clapp or Covello succeeded in this task, the residents of the neighborhoods should have been able to carry on the community school vision and maintain a strong bond between school and neighborhood regardless of leadership.

The financing issues that the Ballard School, Arthurdale, and Benjamin Franklin High School all encountered as the federal government shifted its focus from New Deal projects to World War II had an even greater effect on the disintegration of the community school model than the loss of leadership at these schools. One of the reasons that these three community schools were all able to thrive during the 1930's was the contribution of federal grants and labor provided through the Work's Progress Administration (WPA) (Johanek & Puckett, 2007, p. 14). When the United States entered World War II, these schools lost large portions of their communities to the military as well as a majority of the resources that had made the implementation of the community school model possible. (Johanek & Puckett, 2007, p. 14). By the time that World War II had come to a close, the community school model had all but disappeared from practice in public education.

The economic prosperity that followed World War II could have aided in the resurrection of the community school model, but it did not. Perhaps one explanation for

this is the rise of McCarthyism and the fear of all projects and people that might be deemed socialist or communist. One former Benjamin Franklin High School teacher, Louis Relin, was fired from the New York City Board of Education after being brought before a subcommittee of the U.S. Senate Judiciary Committee on charges of being a part of “subversive activities” (Johanek & Puckett, 2007, p. 220). Relin later stated, “The hundreds of us dismissed without justification, victims of McCarthyite lunacy, were the ones most dedicated to the welfare of our young citizens” (Johanek & Puckett, 2007, p. 220). The fear created by McCarthy Era dismissals in education systems across the country likely stalled the use of the community school model and accompanying ideals, which were easily classified as socialist or communist.

Despite the virtual disappearance of the community school model from practice at this time, the Charles Stewart Mott Foundation took it upon itself to continue discussions and small projects inspired by community school ideals. The Charles Stewart Mott Foundation was founded in Flint, Michigan in 1926 with the goal of aiding individuals through community development (“Our Vision,” 2011). When the community school model disappeared from practice at the onset of World War II, the Mott Foundation was the only place that continued to pursue the ideals central to the community school model.

Most of the Mott Foundation’s work took place in Flint. One notable feature of community school initiatives in Flint is that efforts to deepen the bond between schools and neighborhoods in the municipality led to greater levels of school segregation.

Scholars have shown that the Mott Foundation as well as the local government believed that the best way to leverage the school-neighborhood bond was to isolate the black and

white populations. Leaders in Flint maintained that community bonds would be stronger in segregated neighborhoods (Highsmith & Erickson, 2015).

In addition to its work in Flint, the Mott Foundation supported the development of the National Center for Community Education in 1965 along with a range of projects aimed at achieving piecemeal goals of the community school model (Dryfoos et al., 2005, p. 245). Beyond the work taking place at the bequest of the Mott Foundation, the community school model remained dormant until the 1990s.

### *Neighborhood Schools in the Suburbs*

The community school model that developed during the Progressive Era and was put into practice during the 1930's was formulated prior to the growth of suburbs. As such, the community school model was designed to impact economic and social problems found in rural and urban areas, but not in the suburbs. While the rural and urban landscapes were dramatically different, they shared a number of characteristics that were conducive to a community school model—they both contained certain areas of high poverty, low levels of education, and poor access to needed social services. In large part, the growing suburbs were free of these social and economic troubles, and, as such, were not in need of the supports provided by a community school model. Still, the idea of the school as a center of community life, which served as the foundation of the community school model, had a formative impact on the physical placement of schools and the role of schools in suburban communities.

Clarence Perry, a Progressive Era reformer and urban planner, developed an idealized model of the school as the center of suburban communities in his 1926 paper, *Planning a Neighborhood Unit: Principles Which Would Give Added Character,*

*Convenience and Safety to Outlying Sections of Cities*. In this paper, Perry argued that in order to achieve optimal convenience and efficiency, the neighborhood unit should be organized around a centralized school (C. Perry, 1929). As suburbs exploded in the middle of the twentieth century, many communities adopted the model articulated by Clarence Perry and placed their schools near the geographic and political centers of their municipalities. Placing schools at the centers of community served both the practical purpose of keeping travel time between school and home to a minimum and the conceptual function of demonstrating the importance of a school to the life of its community. In many suburban areas, schools came to be a center of social life. Community members rallied around their schools' athletic teams at school stadiums, attended community meetings in the schools' auditoriums, voted in the schools' libraries and cafeterias, organized social events and fundraisers on the schools' grounds, and made use of the schools' recreational facilities. It is important to note that while these suburban municipalities certainly viewed their schools as centers of community life, these schools were not following a community school model. These suburban schools do not provide the extensive social services and health resources that are essential elements to the community school model. However, they do fulfill certain aspects of the community school model by engaging their constituents in community development and by working to enrich the lives of students and their families through a range of activities outside of the school day. In this way, suburbs have actively cultivated a strong bond between neighborhoods and schools.

In recent years, scholars have documented the disintegration of the traditional role of schools as physical and social centers in suburban communities. The National Trust

for Historic Preservation's widely cited report, *Why Johnny Can't Walk to School: Historic Neighborhood Schools in the Age of Sprawl*, reports a trend of constructing new school facilities on the outskirts of neighborhoods as centralized school buildings deteriorate. This report highlights many of the practical and social benefits of locating schools at the centers of communities that are noted above, and the authors argue that municipalities should find ways to return to this model by either refurbishing outdated buildings or finding ways to construct new buildings in centralized spaces (Pianca, 2002). While it remains uncertain whether or not communities will fully embrace the movement to preserve centrally located schools, the discourse about this issue demonstrates that many people remain committed to maintaining the centrality of schools in their communities.

### *Contemporary Community Schools*

Today's community schools follow some of the same principles of the community school model that grew out of the Progressive Era settlement houses, John Dewey's *The School as Social Centre*, and the work of Elsie Clapp and Leonard Covello. Despite the theoretical connections between these education models, the contemporary community school movement developed independently of the Progressive Era community school ideal. The new wave of community schools grew in response to contemporary social and economic conditions. Geoffrey Canada attributes his decision to develop the Harlem Children's Zone and the accompanying Promise Academy schools as a response to the horrific social and economic conditions that he was witnessing in Harlem. Canada first developed the Harlem Children's Zone in an attempt to deliver a wide range of social services to the community. When he realized that he was not having the magnitude of

impact that he had hoped, he decided to develop a collection of public charter schools that would take on the role of both educating the neighborhood's youth and serving the full range of needs in the community (Tough, 2009).

While Geoffrey Canada was designing his community schools in Harlem, the Children's Aid Society was engaging in similar work a few blocks north in New York City's Washington Heights neighborhood. The Children's Aid Society, an organization that was founded in 1853, provides a continuum of health and social services to children in New York City. The CEO of the Children's Aid Society, Philip Coltoff, argued that the organization needed to find a more effective way of delivering services to people in need. During the early 1990's, Coltoff partnered with a number of schools in Washington Heights to implement a community school model and accomplish his goal (Dryfoos et al., 2005). Today, the Children's Aid Society oversees more than twenty community schools through partnerships with public schools throughout New York City (The Children's Aid Society, 2011).

Labeling the Harlem Children's Zone, the Children's Aid Society's network of schools in New York City, and schools supported by the federal Promise Neighborhoods grants *community schools* may be inappropriate. The original vision of community schools is that, in addition to brokering a range of social services, they would be social centers of neighborhood life, bringing people together to strengthen their bonds and collective voice. While contemporary community schools claim to build community engagement, evidence of this is scarce.

All schools seek to engage communities to some degree, whether they are elite boarding schools, suburban neighborhood schools, urban charter schools, traditional

urban neighborhood schools, or community schools. The question this study seeks to answer has nothing to do with the label of community school, but rather the central tenet of the community school ideal that seeks to strengthen the bond between neighborhood and school. Through this review of the literature on community schools, it is clear that the strong philosophical arguments concerning the need to connect schools to neighborhoods and the theoretical vision of how this bond can benefit students and area residents support this reform model. However, scholars have yet to produce empirical evidence that demonstrates the validity of the theoretical underpinnings of the community school model. This study attempts to resolve this gap in scholarship by evaluating levels of neighborhood collective efficacy and educational outcomes data for traditionally zoned schools.

### Chapter Three – Data and Methods

In order to investigate the utility of school zone boundaries, this case study evaluates a set of neighborhood-level and school-level variables across all elementary school zones in New York City. Employing theories of neighborhood effects, proximity capital, social capital, and collective efficacy, this study seeks to answer a range of questions through an analysis of census data, board of elections data, 311 call center data, student demographic data, and student achievement data.

The case study method allows for a detailed analysis of multiple data types to investigate a theory or set of theories while simultaneously developing new theory (Yin, 2013). As MacDonald writes, “The case can generate a theory as well as test one; instance and abstraction go hand in hand in an iterative process of cumulative growth” (MacDonald & Walker, 1975). MacDonald’s emphasis on the iterative process involved in case study research is crucial. Case studies tend to be exploratory. While they are grounded in existing theory, they are also open to the development of new explanations of social observations. This study begins with a theoretical framework and conceptual model developed from prior scholarship (see Chapter One for details) and both tests and expands upon prior theory through a large-scale study of the effects of school zone boundaries in New York City.

Bryk’s *Organizing Schools for Improvement* serves as a model case study for this work. While Bryk and his colleagues approached their research with a body of theory in mind, they employed an iterative process to develop their own theoretical framework based on preliminary data analysis and then explored their data with greater depth to analyze the strength and validity of their hypotheses (Bryk et al., 2010). In order to



provide rigor and depth to their study, Bryk and his colleagues relied on a large amount of quantitative data from multiple sources as well as an in-depth qualitative analysis of a small number of school sites. This research employs a similar form of case study to Bryk's work, albeit in a more modest manner.<sup>4</sup>

The remainder of this chapter provides details about the specific data and methods that this study employs. Following a brief overview of the study site, there is a detailed discussion of the data used throughout the study. The data used in this study comes from a wide range of sources and is analyzed in numerous ways. While the overarching study considers the utility of school zone boundaries, the work is divided into two separate investigations. Chapter Four considers the role boundaries play in perpetuating segregation, and Chapter Five focuses on the ability of neighborhood-level collective efficacy to support schools. After describing all of the data used throughout the study, this chapter provides a discussion of the numerous methods used in these two distinct investigations.

### **Study Site: New York City**

New York City serves as an ideal site for this research. As discussed in Chapter One, the diversity of neighborhoods and schools in New York City provides for a wide variety of neighborhood types and a vast continuum of school achievement levels. Furthermore, as the largest city in the United States, policy makers and scholars have given special attention to the city and its people and generated a tremendous amount of data on

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<sup>4</sup> Given the limited scope of this study, qualitative data is excluded. The overarching goal of this study is to identify large-scale patterns relating to the utility of school zone boundaries. A follow-up study will be needed to explore the specific mechanisms at play in neighborhoods and schools. Such a follow-up study will require in-depth qualitative research.

countless aspects of life in New York City. This study benefits from the wide availability of data on New York City's neighborhoods and schools.

The United States Census Bureau estimates that roughly 8.4 million people live in New York City. 13.4% of the population is Asian, 22.4% is black, 28.9% is Hispanic, and 32.5% is white. 49.1% of residents speak a language other than English at home and 20.6% of the population lives below the poverty level (U.S. Census Bureau, 2016). This study will draw upon these census data as well as a range of more detailed figures collected by various government agencies.

Situated within New York City is the largest school district in the country. In the 2014-2015 school year, over 1.1 million students enrolled in the New York City public school system. Roughly 425,000 of these students were enrolled in elementary school (New York City Department of Education, 2016e). 15.3% of New York City public school students are Asian, 27.8% are black, 40.4% are Hispanic, 14.7% are white, and 1.9% are classified as other. Additionally, 19.0% of New York City public school students have disabilities, 13.1% are English language learners, and 79.0% qualify for free or reduced-price lunch (New York City Department of Education, 2016c). The city employs approximately 90,000 public school teachers and has an annual operating budget that exceeds twenty billion dollars (New York City Department of Education, 2016e).

Similar to many other urban areas, New York City has been breaking the bond between neighborhood and school through the implementation of school choice models. While Mayor Bloomberg was in office from 2002 through 2013, he worked along with his chancellor of schools, Joel Klein, to initiate a range of school choice options that have persisted since their tenure. In the 2010-2011 school year, 3.9% of New York City public

school students attended charter schools; in the 2014-2015 school year, the proportion of students attending charter schools had doubled to 7.8% (New York City Department of Education, 2016c). Along with creating a growing network of charter schools across the city, Bloomberg and Klein extended the portfolio of high school choice options. Today, there are no neighborhood high schools in New York City.

Despite efforts to sever the bond between neighborhood and school, most children still attend a neighborhood elementary school. However, recent developments demonstrate that the New York City DOE is testing potential methods (beyond the use of charter schools) for separating schools from neighborhoods at the elementary school level (New York City Department of Education, 2014a). During the 2014-2015 academic year, elementary school children in three New York City “choice districts” had the opportunity to select from any of the schools within their districts. While these three “choice districts” serve only a small portion of the students across the thirty-two school districts, the “choice districts” do indicate a move to further separate schools from neighborhoods in New York City. Still, most children in New York City attend a traditional public school in one of the 637 elementary school zones. These elementary school zones serve as the defining boundary lines for the neighborhoods that this study analyzes.

Because of the size and diversity of New York City, the results of this case study not only have significance for the 8.4 million residents and 1.1 million public school students who live here, but it also offers insight into how other school districts in various areas around the world may consider the relationship between neighborhoods and schools.

## **Data**

This study relies on multiple sources of neighborhood-level and school-level data. Table 2 provides a summary of neighborhood-level variables, and Table 3 provides a summary of school-level variables. As a quick review of the two tables reveals, the data for this study emanates from multiple sources and covers a range of information. In their 1966 work, Webb and his colleagues argued that researchers must triangulate their data using multiple methods and sources of data to increase the reliability of their findings (Webb, 1966). There are multiple approaches to data triangulation including the integration of fieldwork with survey data and the use of multiple measures of a single phenomenon (Denzin, 2009). This study relies on multiple measures of individual phenomenon to aid in data triangulation.

### *Neighborhood-Level Variables*

The neighborhood-level variables summarized in Table 2 are drawn from the 2010 Decennial Census, the 2010-2014 five-year estimates from the American Community Survey, the 311 Call Center, the New York State Board of Elections, and the New York City DOE (New York City Department of Education, 2016a; New York State Board of Elections, 2012; NYC 311, 2017; U.S. Census Bureau, 2010, 2015). Along with identifying the source of each variable, the table also indicates the original geography of the data and if the variable is used in the segregation analysis, the collective efficacy analysis, or both investigations. As noted earlier, the geographic unit of interest for this study is the elementary school zone. Because the neighborhood-level data are measured in multiple kinds of boundaries, the study needs to address the discrepant geographies.

The methods section that follows this discussion of data describes how the study fits all variables into elementary school zone boundaries.

Data Source	Variable Name	Original Geography	Segregation Analysis	Collective Efficacy Analysis
311 Call Center	311 Calls	Point locations		X
American Community Survey	Private School Enrollment (K-8)	Census tracts		X
	Children Living in Poverty			X
	Population Over the Age of 25 with a Bachelor's Degree			X
	Noncitizens			X
Decennial Census	Total Population	Census tracts	X	X
	Asian Population		X	X
	Black Population		X	X
	Hispanic Population		X	X
	White Population		X	X
	Other Population		X	X
	Total Housing Units			X
	Owner-Occupied Housing Units			X
	Households with Children			X
	Families Headed by a Single Parent			X
New York City Department of Education	Elementary School Zones	Elementary school zones	X	X
New York State Board of Elections	People Who Voted in 2009 Mayoral Election	Voting tabulation districts		X
	Voting Age Population			X
	Voting Tabulation Districts			X

Table 2: Neighborhood-Level Variables

The neighborhood-level variables used in this study cover a range of time periods. In an effort to limit sources of error, the study uses data from overlapping time periods wherever possible. For example, the study uses elementary school zone boundaries for the 2014-2015 school year and 311 call center data from September 1, 2014 through August 31, 2015. Because of data limitations, some variables represent different time periods. For example, Decennial Census data are from 2010s and Board of Elections data

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<sup>5</sup> Decennial Census data is used in place of more recent American Community Survey data, because Decennial Census data is a population count with less error than the estimates provided through the American Community Survey. In many cases, the margins of error for tract-level American Community Survey data are too large to allow the data to be used with confidence.

are from 2009.<sup>6</sup> While the gap in time between some data introduces potential sources of error, all data selected for this study meet the standard of using the best available data.

Many of the neighborhood-level variables outlined in Table 2 are self-explanatory; however, the 311 Call Center data requires discussion. The 311 Call Center is in constant operation and accepts calls concerning non-emergency matters. While many callers are simply seeking information, some request assistance with an issue. If a call requires intervention from a city agency, a 311 operator records information about the topic of the call as well as the location of the caller (NYC 311, 2016). These records are updated on a daily basis and are made available to the public through New York City's Open Data program.

This study relies on data from the 311 Call Center and the New York State Board of Elections to assess levels of collective efficacy. Measuring collective efficacy—"social cohesion among neighbors combined with their willingness to intervene on behalf of the common good"—presents a number of challenges (Sampson et al., 1997). Most studies that evaluate collective efficacy rely on survey data. In Sampson's seminal study on collective efficacy and crime, he uses a set of ten survey questions to measure collective efficacy. Sampson and his colleagues presented respondents with a five-item Likert scale and asked them how likely they were to act on the behalf of their neighbors if:

1. Children were skipping school and hanging out on a street corner
  2. Children were spray-painting graffiti on a local building
  3. Children were showing disrespect to an adult
  4. A fight broke out in front of their house
  5. The fire station closest to their home was threatened with budget cuts
- (Sampson et al., 1997).

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<sup>6</sup> Data from the 2009 mayoral election is the most recent data available for researchers. While the time gap between the 2009 mayoral election and other kinds of data used in the study introduces potential sources of error, this is the best available data of its kind and adds an important element to the study.

He then asked respondents, using a five-item Likert scale, how strongly they agree with the following statements:

1. People around here are willing to help their neighbors
2. This is a close-knit neighborhood
3. People in this neighborhood can be trusted
4. People in this neighborhood generally don't get along with each other
5. People in this neighborhood do not share the same values (Sampson et al., 1997).

While Sampson did find a strong inverse correlation between his measure of collective efficacy and crime levels, his measurement tool is problematic in a number of ways. First, Sampson bases his measure of neighborhood collective efficacy on a sample of twenty surveys per neighborhood cluster; each neighborhood cluster contains approximately 8,000 people. Beyond the fact that twenty surveys representing .25% of a population raises issues of representativeness, the logistical issues of conducting the 8,782 surveys needed to cover the 343 neighborhood clusters in Sampson's study area are daunting. Furthermore, surveys represent intent, but they do not demonstrate action. A research team at the Newark Schools Research Collaborative used Sampson's collective efficacy survey questions when conducting a Needs Assessment and Segmentation Analysis for a Promise Neighborhood planning grant. The team found that evidence of intent to act on behalf of neighbors—as represented by the survey questions—did not align with demonstrated actions as unearthed through focus group discussions (Backstrand et al., 2014). This dissertation seeks to address some of the data measurement challenges that are associated with evaluating the abstract concept of collective efficacy on a large scale. Using data from the 311 Call Center and the New York State Board of Elections allows for an analysis of observed actions rather than

reported reactions to hypothetical situations. Chapter Five provides a more detailed discussion of the use of 311 Call Center data and election data to construct measures of collective efficacy.

### *School-Level Variables*

Most of the school-level variables summarized in Table 3 are derived from data collected by the New York City Department of Education (New York City Department of Education, 2014b, 2016a, 2016b, 2016d). The only two variables that are defined for the specific purposes of this study are school admissions process and school level. School level is simply defined by the grades that each school serves. Schools that serve third graders are designated as elementary schools; schools that serve eighth graders are designated as middle schools; and schools that serve tenth graders are designated as secondary schools.<sup>7</sup>

The school admissions process variable is a bit more complicated. In many cases, the school admission process can be derived from the DBN. For example, district 75 schools all have a DBN code that begin with “75.” Similarly, all charter schools have a DBN code that begin with “84.” Open enrollment schools are also easy to identify using the DBN, because all schools in districts 1, 7, and 23 are open enrollment schools. In order to distinguish the remaining school admissions process types, a deeper investigation using ArcGIS and outside research is required. Additional details about this work are described in the methods section that follows.

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<sup>7</sup> It is possible for an individual school to have multiple school levels. For example, a school serving students in kindergarten through eighth grade is considered both an elementary school and a middle school in this study. In such cases, data from the individual school is used in both analyses of elementary and middle schools.



Variable Type	Variable Name	Variable Description
Basic Information	District, Borough, Number (DBN)	A unique identifier for each school; the first two numbers of the variable indicate the district where the school is located, the last two numbers indicate the school number, and the letter that separates the district and school numbers indicates the borough where the school is located
	School Admissions Process	All schools admit students through one of the following structures: charter, district 75, dual language, gifted and talented, lottery, open enrollment zone, special admissions, or traditional neighborhoods
	School Level	Elementary – serves grade 3 Middle – serves grade 8 Secondary – serves grade 10
	School Location	The precise latitude and longitude of each school
Student Demographics	Total Population	The total number of students at a given school
	Asian	The total number of students at a school who identify as Asian
	Black	The total number of students at a school who identify as black
	Hispanic	The total number of students at a school who identify as Hispanic
	Other	The total number of students at a school who did not identify as Asian, black, Hispanic, or white
	White	The total number of students at a school who identify as White
	Students Living in Poverty	The total number of students at a school who qualify for free or reduced-price lunch
	Special Education	The total number of students at a school who have an IEP
	English Language Learners	The total number of students at a school who are classified as English Language Learners
Student Achievement	Percent Proficient (ELA)	The proportion of students who score at a level 3 or 4 on the third grade English Language Arts Exam; Separate measures are provided for all students, Asian students, black students, Hispanic students, and white students
	Percent Proficient (Math)	The proportion of students who score at a level 3 or 4 on the third grade Math Exam; Separate measures are provided for all students, Asian students, black students, Hispanic students, and white students

*Table 3: School-Level Variables*

All of the student demographic data and student achievement data includes information from the 2010-2011 school year through the 2014-2015 school year. Some analyses in chapters four and five just use data from the 2014-2015 school year; however,

<sup>8</sup> Chapter Four provides a detailed discussion of each of these school types.

most analyses use five-year averages. Additional details are provided in chapters four and five.

Unlike the neighborhood-level data, all of the school-level data is used in both the segregation and the collective efficacy investigations. While some of the work presented in chapters four and five focus exclusively on neighborhood-level or school-level data, most rely on variables from both the school-level and the neighborhood-level. In order to join data from the neighborhood-level to data from the school-level, this study relies on the DBN. Because all elementary school zones have a unique DBN that matches the DBN of a neighborhood elementary school, this study is able to seamlessly evaluate the relationship between neighborhood and school.

## **Methods**

This study relies on a number of geostatistical and quantitative methods to analyze the utility of school zone boundaries. Before discussing the methods used to complete the segregation analysis in Chapter Four and the study of collective efficacy in Chapter Five, this section first describes the tools and methods used to organize and prepare the array of neighborhood-level and school-level data outlined above.

All work for this study was done using ArcGIS 10.3.1, StataMP 14, Microsoft Access 2016, and Microsoft Excel 2016. Before conducting any analysis, it was necessary to build a database to organize the collection of data used in the study. An essential element of this database is a unique identifier that makes it possible to join and relate all neighborhood-level and school-level data. The DBN code, which contains the unique combination of each school's district, borough, and school number, serves as the identifier in all data tables. While all school-level datasets from the New York City DOE

contain a field for DBN, neighborhood-level datasets do not have DBN codes. In order to build a DBN code into the neighborhood-level datasets, it was necessary to construct a geodatabase in ArcGIS that contained all neighborhood-level datasets along with the file containing school point locations.

After constructing a geodatabase in ArcGIS, a topology rule was established that required all elementary school zone polygons to contain one and only one elementary school point location.<sup>9</sup> There were 295 instances in which the topology rule was broken; each of these cases needed to be resolved manually. The following steps were taken to address issues with the elementary school zone dataset:

- In some cases, the polygon was simply removed from the file because it was not a true elementary school zone. For example, polygons containing Central Park and JFK Airport were removed because they do not have residents or schools (see the gaps in Map 1 where these polygons have been removed).
- In some cases, an individual polygon that was a true elementary school zone did not contain a school point location. Occasionally a school is located outside of school zone boundaries due to space availability. When this occurred, the elementary school zone polygons were preserved with the corresponding DBN codes. There were also cases in which multiple polygons separated by parks or bodies of water matched an individual school. When this occurred, all relevant polygons were maintained with the corresponding DBN.<sup>10</sup> A few polygons that did not contain school point locations had multiple DBN codes because children in these areas were being sent out of the neighborhood to multiple schools. A “notes” field in the elementary school zone file provided helpful details about these cases. If children in a specific polygon had complete choice of schools to attend, the polygon was removed from the dataset because of the missing one-to-one school-neighborhood relationship. If the children in a specific polygon were sent to different schools depending on grade-level, the DBN code for the school serving third graders was maintained for the polygon.

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<sup>9</sup> Prior to building this topology rule, charter schools, district 75 schools, and schools in open enrollment zones were removed from the school point location layer. These schools were removed because these schools are located in elementary school zones but have no relationship with school zones.

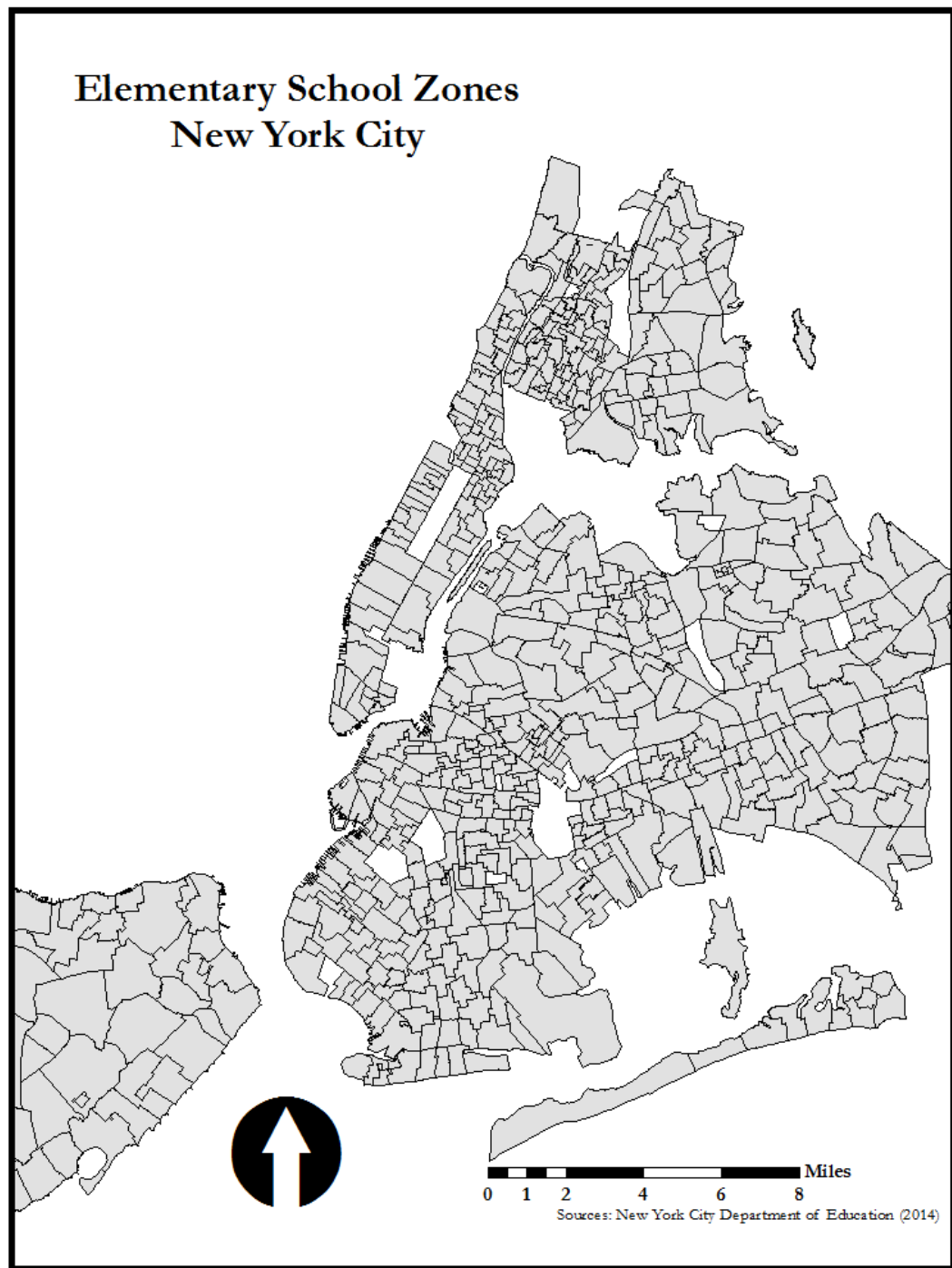
<sup>10</sup> The fact that a number of elementary school zone polygons have identical DBN codes did not generate significant issues for analysis. In these cases, neighborhood-level data from the multiple polygons were combined and treated as a single entity.

- In some cases an individual polygon contained multiple school point locations. These scenarios required research through the New York City DOE website. Many of these schools were either gifted and talented schools, dual language schools, or schools that admitted students through a lottery. Information about these admissions processes was recorded in the school point locations file to generate the *school admissions process* variable discussed in the data section. In most cases, identifying these unzoned schools revealed the identity of the neighborhood school and the polygon's proper DBN code. Occasionally, multiple school points remained after identifying unzoned schools. When this occurred, it was a result of a scenario in which a neighborhood school was located beyond the physical boundaries of the elementary school zone. Under these circumstances, schools and zones were properly matched to ensure that the DBN code for a neighborhood aligned the school with the area where children attending the school live.

Once the elementary school zone file was finalized with the correct DBN codes and the school point location file was finalized with the *school admissions process* variable, it was necessary to calculate all neighborhood-level data within the elementary school zone geography.

A spatial weighting method was used to estimate non-elementary school zone data within the boundaries of elementary school zones. In its original form, Decennial Census data was in census tract boundaries and election data was in voting tabulation district boundaries. Map 1 shows elementary school zone boundaries, Map 2 shows census tract boundaries, and Map 3 shows voting tabulation district boundaries. These three sets of boundaries cover different areas and represent different populations. The process of spatial weighting makes it possible to estimate the value of census tract and voting tabulation district data for elementary school zones (Voss, Long, & Hammer, 1999).  $ESZ_{kj}$  is the estimated value of variable  $k$  for elementary school zone  $j$  defined by

$$ESZ_{kj} = \sum_{i=1}^n (P_{ij} \times V_{ki})$$



*Map 1: Elementary School Zones*



*Map 2: Census Tracts*



*Map 3: Voting Tabulation Districts*

where  $P_{ij}$  is the proportion of area from census tract  $i$  (or voting tabulation district  $i$ ) that overlaps elementary school zone  $j$ , and  $V_{ki}$  is the value of variable  $k$  in census tract  $i$  (or voting tabulation district  $i$ ). In order to use this spatial weighting algorithm, all census data and election data was kept in raw form with variables representing a given unit rather than a proportion. Once completed the spatial weighting process produced datasets with reliable estimates of census data and election data within the boundaries of elementary school zones. Through this process, all neighborhood-level data was assigned a corresponding DBN, making it possible to join neighborhood-level and school-level data.

### *Segregation Analysis*

The segregation analysis presented in Chapter Four relies on descriptive statistics as well as a number of statistical models. Three measures used throughout the chapter for both school-level and neighborhood-level data—multiracial, intensely segregated, and apartheid—are straightforward categorizations based on a simple analysis of demographic variables (Kucsera & Orfield, 2014). Multiracial spaces are defined as areas where at least three different racial or ethnic groups each make up a minimum of 10% of the total population. Intensely segregated spaces are defined as areas where 90% or more of the total population is nonwhite. Apartheid spaces are defined as areas where 99% or more of the total population is nonwhite.

Chapter Four also presents Dissimilarity Indices, Exposure Indices, Isolation Indices, Diversity Scores, and Multi-group Entropy Indices. Each of these measures was calculated using Reardon's SEG module in StataMP 14.0. The dissimilarity index is the proportion of either of two groups that would need to move to a new location in order to



ensure a proportional representation of both groups in all related geographies. The dissimilarity index (D) equals

$$\frac{1}{2} \sum_{i=1}^N \left| \frac{a_i}{A} - \frac{b_i}{B} \right|$$

where  $a_i$  is the population of group  $a$  in the  $i^{\text{th}}$  area (e.g. school or school zone),  $A$  is the total population of group  $a$  in the full study area (e.g. all schools or all school zones),  $b_i$  is the population of group  $b$  in the  $i^{\text{th}}$  area, and  $B$  is the total population of group  $b$  in the full study area.

The Exposure Index is the probability of a person from group  $a$  interacting with a person from group  $b$  in area  $i$ . It equals

$$\sum_{i=1}^N \left[ \left( \frac{a_i}{A} \right) \left( \frac{b_i}{T_i} \right) \right]$$

where  $a_i$  is the population of group  $a$  in the  $i^{\text{th}}$  area,  $A$  is the total population of group  $a$  in the full study area,  $b_i$  is the population of group  $b$  in the  $i^{\text{th}}$  area, and  $T_i$  is the total population in the  $i^{\text{th}}$  area.

The Isolation Index is the probability of a person from group  $a$  interacting with another person from group  $a$  in area  $i$ . It equals

$$\sum_{i=1}^N \left[ \left( \frac{a_i}{A} \right) \left( \frac{a_i}{T_i} \right) \right]$$

where  $a_i$  is the population of group  $a$  in the  $i^{\text{th}}$  area,  $A$  is the total population of group  $a$  in the full study area, and  $T_i$  is the total population in the  $i^{\text{th}}$  area.

The Dissimilarity Index, Exposure Index, and Isolation Index are limited in scope because they only consider the relationships between two subgroups. The Diversity Score

and the Multi-group Entropy Index provide more complex analyses of a population by accounting for all subgroups at once. The Diversity Score is a measure of the overall diversity in each collection of schools (or neighborhoods). The Diversity Score ranges from zero to the natural log of the number of subgroups included in the measure. Areas with greater levels of diversity have higher diversity scores. It equals

$$\sum_{r=1}^r \left(\frac{r}{P}\right) \ln \left(1/\frac{r}{P}\right)$$

where  $r$  is the total population of group  $r$ , and  $P$  is the total population.

The Multi-group Entropy Index is a measure of evenness across all units within a space. It is the average difference between the proportional representation of each demographic subgroup in each individual school (or school zone) and the proportional representation of each demographic subgroup in the full collection of schools (or neighborhoods). The Multi-group Entropy Index ranges from zero to one. A value of 0 indicates perfect integration, with every unit (school or neighborhood) in the full area having a perfectly proportional representation from all demographic subgroups; a score of 1 indicates perfect segregation, with every unit (school or neighborhood) only having representation from a single demographic subgroup. It equals

$$\sum_{i=1}^N \left( \frac{T_i \left\{ \left[ \sum_{r=1}^r \left(\frac{r}{P}\right) \ln \left(1/\frac{r}{P}\right) \right] - \left[ \sum_{r=1}^r \left(\frac{r_i}{T_i}\right) \ln \left(1/\frac{r_i}{T_i}\right) \right] \right\}}{P \left[ \sum_{r=1}^r \frac{r}{P} \ln \left(1/\frac{r}{P}\right) \right]} \right)$$

where  $P$  is the total population,  $T_i$  is the total population in the  $i^{\text{th}}$  area,  $r$  is the total population of group  $r$ , and  $r_i$  is the population of group  $r$  in the  $i^{\text{th}}$  area.

Although the Multi-group Entropy Index, or Thiel's  $H$ , is the most complex segregation measure employed in this study, it provides one of the most useful constructs for analysis. The first three measures can only account for two population subgroups at a time, and the Diversity Score is skewed by the relative size of the subgroups (Orfield et al., 2014). Despite the clear value of the Multi-Group Entropy Index, the other measures of segregation aid in illustrating different elements of the segregation crisis. Chapter Four draws from all five measures discussed here to investigate the ways in which school zone boundaries influence segregation in New York City.

In addition to analyzing levels of segregation, Chapter Four seeks to understand the way segregation affects educational outcomes. Simple linear regression and multiple regression models are used to analyze the effect of segregation on educational outcomes. Before constructing the models, five-year averages of third graders' proficiency on ELA and Math exams are calculated for each school. These values are used as the dependent variables in all regression models.

Linear regression models are used to assess how school-level diversity influences educational outcomes. The models take the form of

$$Y = \beta_0 + \beta_1 D + \varepsilon$$

where  $Y$  is the five-year average of the percent of students who demonstrate proficiency (separate models are made for both Math and ELA outcomes),  $\beta_0$  is the model intercept,  $\beta_1$  is the slope coefficient for the diversity score,  $D$  is the diversity score, and  $\varepsilon$  is the residual.

Multiple regression models are used to assess how school-level diversity influences educational outcomes after controlling for a range of school-level variables.

The models take the form of

$$Y = \beta_0 + \beta_1 D + \beta_2 L + \varepsilon$$

and

$$Y = \beta_0 + \beta_1 D + \beta_2 L + \beta_3 I + \beta_4 S + \varepsilon$$

where  $Y$  is the five-year average of the percent of students who demonstrate proficiency (separate models are made for both Math and ELA outcomes),  $\beta_0$  is the model intercept,  $\beta_1$  is the slope coefficient for the diversity score,  $D$  is the diversity score,  $\beta_2$  is the slope coefficient for the proportion of students who qualify for free or reduced-price lunch,  $L$  is the proportion of students who qualify for free or reduced-price lunch,  $\beta_3$  is the slope coefficient for the proportion of students who are classified as special education students,  $I$  is the proportion of students who are classified as special education students,  $\beta_4$  is the slope coefficient for the proportion of students who are classified as English Language Learners,  $S$  is the proportion of students who are classified as English Language Learners, and  $\varepsilon$  is the residual.

In addition to building the linear and multiple regression models outlined above, Chapter Four also constructs multiple regression models using proficiency rates by race and ethnicity. These final models allow for an analysis of the influence of school-level diversity on achievement levels for individual racial and ethnic groups.

### *Collective Efficacy Analysis*

Chapter Five offers an in-depth analysis of the potential for neighborhood-level collective efficacy to affect educational outcomes at zoned elementary schools. In order

to conduct this analysis a range of methods are employed to generate a statistical model that tests causality. As noted earlier in the chapter, data from the 311 Call Center and the New York State Board of Elections are used to construct a measure of neighborhood-level collective efficacy. After using the spatial weighting algorithm, the number of people who voted in the 2009 election is divided by the voting age population to generate a measure of voter turnout for each elementary school zone. This variable is used as one indicator of neighborhood-level collective efficacy.

The second indicator of neighborhood-level collective efficacy is derived from 311 Call Center data. In order to construct this indicator variable, all 311 calls made from September 1, 2014 through August 31, 2015 were coded as either *communal* or *non-communal*. Given the large number of 311 calls during this period of time and the fact that many of the issues reported to 311 are repetitive, it was possible to code each record without reviewing the full dataset. Concatenating three fields from the 311 call center dataset (Agency, Complaint, and Descriptor), allowed for the construction of a variable that identified the complete universe of issues reported. The constructed “AgencyComplaintDescriptor” variable contained 889 unique entries. Each entry was reviewed and classified as *communal* or *non-communal*. Communal entries focused on issues that affected people outside of an individual household. For example, the “AgencyComplaintDescriptor” entry “DOTTraffic Signal ConditionPedestrian Signal” indicates the communal issue of a broken pedestrian crossing light that needs to be fixed by the Department of Transportation. Another entry, “TLCFound PropertyBag/Wallet,” indicates the communal matter of an individual reporting that they found a bag or wallet in a taxi that they want to enter into the Taxi and Limousine Commission’s lost and found

in hopes of returning the item to its owner. Yet another entry, “HPDPLUMBINGBATHTUB/SHOWER,” indicates a non-communal issue with a bathtub or shower that an individual is reporting to Housing Preservation and Development in order to compel a landlord to resolve the matter. After coding all 889 unique entries, the “AgencyComplaintDescriptor” field was used to populate a *communal/non-communal* field in the full universe of 311 calls.

Once the communal 311 calls were identified through the coding process, they were mapped in ArcGIS using the latitude and longitude fields from the dataset. Next, a spatial join was used to count the total number of communal 311 calls within each individual elementary school zone. Communal 311 calls were then normalized using the total population for each elementary school zone to produce the communal 311 calls per capita variable. Both the communal 311 calls per capita variable and the voter turnout variable were used as indicators of collective efficacy.

Before building a statistical model to test causality, each neighborhood-level collective efficacy indicator variable was analyzed using a number of tools in StataMP 14.0. Pearson Correlation Coefficients were generated, along with significance levels of each correlation, to investigate the relationship between the two neighborhood-level collective efficacy variables and a range of census data and school-level data. Additionally, a scatterplot was built to analyze the relationship between communal 311 calls per capita and voter turnout. Finally, the two neighborhood-level collective efficacy indicators were combined into a single binary variable used to measure elementary school zones with *high* and *low* collective efficacy. In order to be classified as an elementary school zone with *high* collective efficacy, the area had to have communal 311 calls per

capita above the sample mean and a voter turnout rate about the sample mean. Because New York City's five boroughs are quite distinct, the binary collective efficacy variable was calculated at the city-level using sample means as well as at the borough-level using means from the sample within each borough.

Building a model to test causality requires careful consideration of relevant variables. A treatment effects model was chosen to evaluate the impact of high collective efficacy on educational outcomes. Covariates were selected based on the earlier analysis of Pearson Correlation Coefficients; variables that had a significant correlation with the neighborhood-level collective efficacy indicators were selected for use in the treatment effects model. Before finalizing the model, a number of analyses were conducted to aid in selecting the best kind of treatment effects model. First, a range of descriptive statistics, including means and standard deviations of both school-level and neighborhood-level data, were analyzed to identify some of the differences between areas with high and low collective efficacy. Next, standardized differences were calculated. Because the standardized differences were high, a matching model was chosen to ensure that the causal model compared educational outcomes in high and low collective efficacy elementary schools zones that shared similar demographic profiles. A probit regression model was used to determine propensity scores, or the probability of an elementary school zone falling into the treatment group with high collective efficacy. Because the raw data contained a significantly larger number of low collective efficacy elementary school zones, an inverse probability weighting model was chosen to generate synthetic data points to aid in analyzing the treatment effect. After weighting the variables under investigation, the raw and weighted samples were compared using density graphs and an

overidentification test was used to ensure that the inverse probability weighting algorithm balanced the covariates without generating sources of error. Finally, average treatment effects were calculated to determine if neighborhood-level collective efficacy affects educational outcomes at zoned schools. The following generalized equation shows how the average treatment effect is calculated:

$$ATE = \frac{1}{N} \times \sum_{i=1}^N (y_{1i} - y_{0i})$$

where  $N$  is the sample size,  $y_{1i}$  is the school outcome measure for the  $i^{\text{th}}$  matched pair that has been treated with high neighborhood-level collective efficacy, and  $y_{0i}$  is the school outcome measure for the  $i^{\text{th}}$  matched pair that has not been treated with high neighborhood-level collective efficacy.

Multiple inverse probability weighting average treatment effects models were constructed to analyze the causal relationship between neighborhood-level collective efficacy and educational outcomes using both city-level and borough level measures of collective efficacy as well as both ELA and Math five-year average proficiency rates.

Descriptive statistics, maps, and the results of the analyses outlined throughout this chapter are presented and discussed in chapters four and five. Due to the complexity of this study and the range of geostatistical methods and statistical models employed throughout this work, certain details about the data and methods are repeated in chapters four and five in an effort to support the reader.



## **Chapter Four – The Segregating Effects of School Zone Boundaries**

New York has broken a lot of records and holds many titles. In 2014, a report from the UCLA Civil Rights Project added a new designation to the list, proclaiming that New York State has the most segregated school system in the country, largely a result of New York City's intensely segregated schools (Kucsera & Orfield, 2014). This is not a title that New York maintains with pride; rather it is one that the state and the city struggle to overcome.

Understanding the mechanisms that make New York's schools segregated is an essential step to resolving the problem. The most obvious culprit contributing to school segregation in New York City is the existing model of school zone boundaries. While the use of school zone boundaries does not inherently produce segregated schools, data in this chapter suggest that these lines of demarcation currently contribute to intense levels of school segregation that generate and perpetuate inequalities. Given this study's overall focus on the use and misuse of boundaries in our public education system, it is important to consider how boundaries can hinder or potentially assist in integration efforts. Therefore, this chapter investigates the relationships between New York City's school assignment practices, levels of school segregation, and educational outcomes.

As discussed in the previous chapter, New York City maintains the largest school district in the nation, serving over 1.1 million children. This system is large and complex. One area of complexity is New York City's approach to school assignment. In addition to assigning children to schools based on neighborhoods, New York City employs a range of school choice options—charter schools, open enrollment zones, magnet schools, gifted and talented programs, and a high school portfolio model. An overwhelming majority of

New York City's elementary school students attend neighborhood schools; however, school choice increases in middle school and is the norm in high school. Because of New York City's extensive use of school choice for middle school and high school students, this chapter primarily considers the effects of school zone boundaries on segregation and educational outcomes at the elementary school level.

Before turning to the data on school zones, school segregation, and educational outcomes, it is important to note that boundaries alone do not produce the school segregation that persists in New York City's schools. In fact, school choice, which is often promoted as a tool for school integration, has exacerbated New York's school segregation problem. The 2014 UCLA Civil Rights Project report that gave New York the title of most segregated school system notes that charter schools, in particular, have led to increased levels of racial isolation in schools (Kucsera & Orfield, 2014). Additionally, New York City's gifted and talented program and network of specialized high schools have both been implicated in segregating students (Corcoran & Baker-Smith, 2015; Roda, 2015). Recognizing the role that these forms of school choice play in segregating students, the New York State Legislature included one million dollars in the 2016-2017 education budget to be distributed among New York City's specialized high schools to fund outreach coordinators and to assist in preparing middle school students from underrepresented demographic groups for the exam used for admissions to specialized high schools (New York State Education Department, 2016). Additionally, New York City's Mayor de Blasio and his school's chancellor have explored a number of more localized efforts to integrate schools (E. Harris, 2016). Two attempts to diversify schools through rezoning plans, one in Manhattan and the other in Brooklyn, were met

with fierce opposition from community members (Taylor, 2015). While these small efforts signal an awareness of the problem of school segregation and a desire to resolve the issue, a large-scale effort to resolve the problem remains elusive.

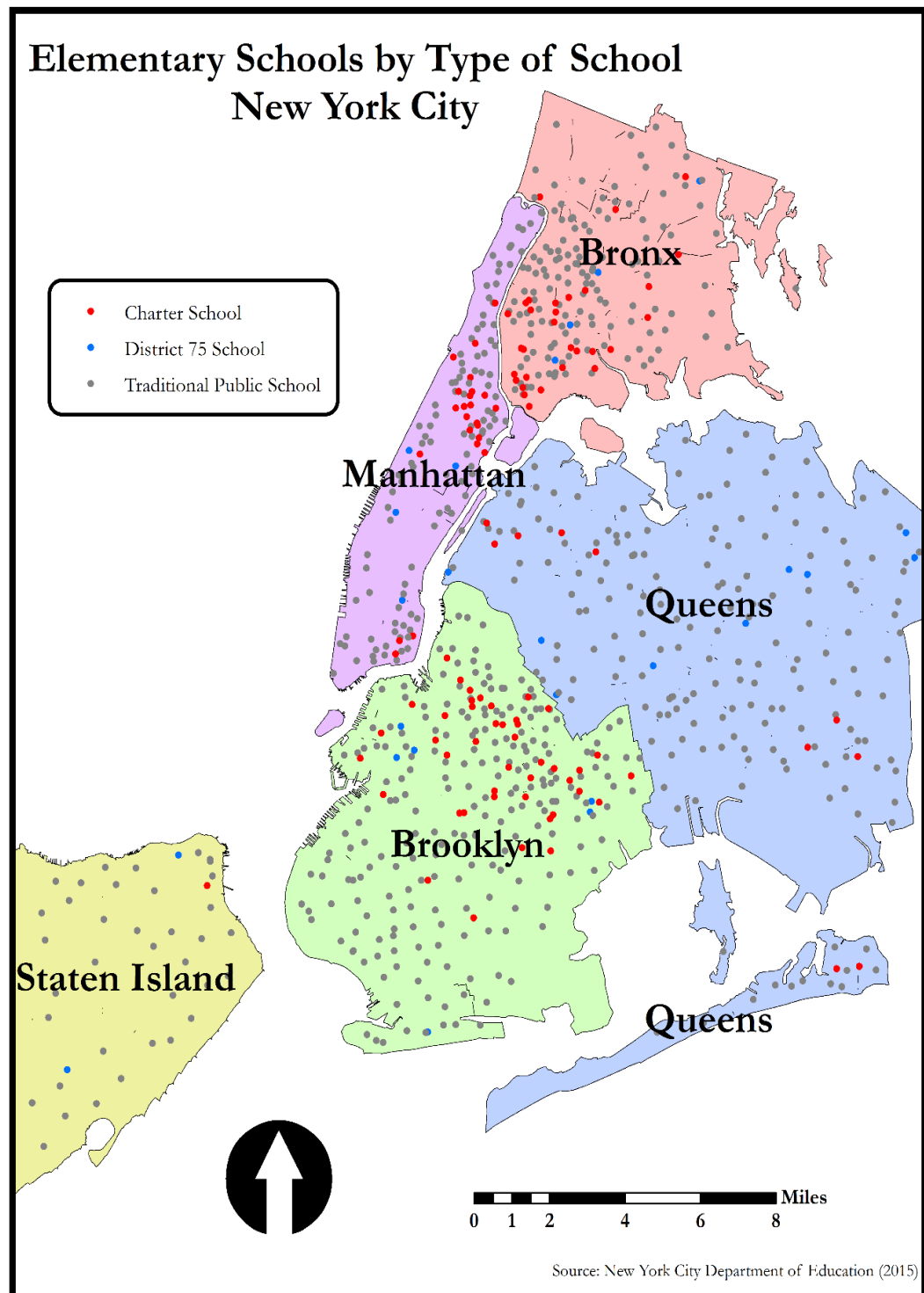
This chapter analyzes school segregation from multiple angles in an attempt to understand both the severity of the problem, the specific form segregation takes in the New York City schools, and the effects it has on students. After reviewing some basic demographic data that frames the issue of school segregation in New York City, a range of segregation measures are presented and analyzed. Segregation, integration, and diversity are analyzed at the elementary school level by type of admissions process for the school and by geography. Additionally, segregation, integration, and diversity at the elementary school level is compared to the same measures at the middle school and high school levels. Following these discussions of school segregation, a number of regression models that use segregation to predict educational attainment are presented and analyzed.

### **Demographic Snapshot of New York City Public Schools**

In the 2014-2015 school year, there were 908 elementary schools in New York City's public education system (New York City Department of Education, 2016b).<sup>11</sup> 754 of these schools are traditional public schools, 44 of these schools serve students with a disability through District 75, and 110 of these schools are public charter schools (see Map 4). Over a half-million students attend these 908 schools. 82% of students in these

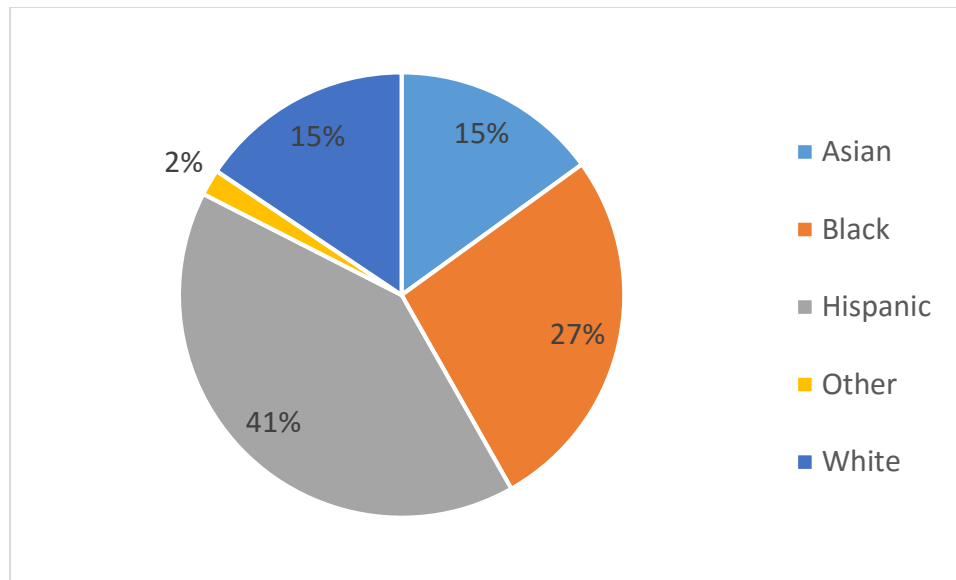
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<sup>11</sup> For the purposes of this study, an elementary school is defined as a school that serves at least one third-grade student. Because many schools that serve children traditionally labeled "elementary" students contain different ranges of grade levels, a clear definition was required for data analysis.



Map 4: Elementary Schools by Type of School, 2014-2015

schools received free or reduced-price lunch, 15% are English language learners, and 21% have a classified disability. As Figure 3 shows, 15% of elementary school students are Asian, 27% are Black, 41% are Hispanic, and 15% are White.



*Figure 3: Race/Ethnicity of New York City Elementary School Students, 2014-2015 (New York City Department of Education, 2016b)*

It is important to note that the racial/ethnic composition of New York City's schools does not mirror the demographic composition of the city's children as a whole. As Figure 4 shows, 19% of children between the age of five and seventeen living in New York City are white. This is significantly higher than the 15% of elementary school children who are white. Conversely, the proportions of Asian and black students in the city's public elementary schools are higher than the proportions of these groups living in the city. While making a direct comparison between the public school population and the city's overall population is not easy to do with much confidence because of the varying methods of data collection used by the New York City Department of Education and the

U.S. Census Bureau, it is possible to conclude that a more sizable portion of white children than nonwhite children opt out of the public school system and into a private school. In the city as a whole, 17% of children in kindergarten through high school attend private schools. Manhattan has the highest proportion of children attending private school (24%), and the Bronx has the lowest proportion of children attending private school (11%). Similarly, Manhattan has a much higher proportion of White children (24%) than the Bronx (4%) (U.S. Census Bureau, 2015). Additionally, it is worth noting that there are significant differences in the private school populations. For example, many elite private schools in Manhattan charge tuition in excess of \$40,000, whereas the Catholic schools and Yeshivas that serve many of the private school students in the Bronx, Brooklyn, and Queens are much less expensive.

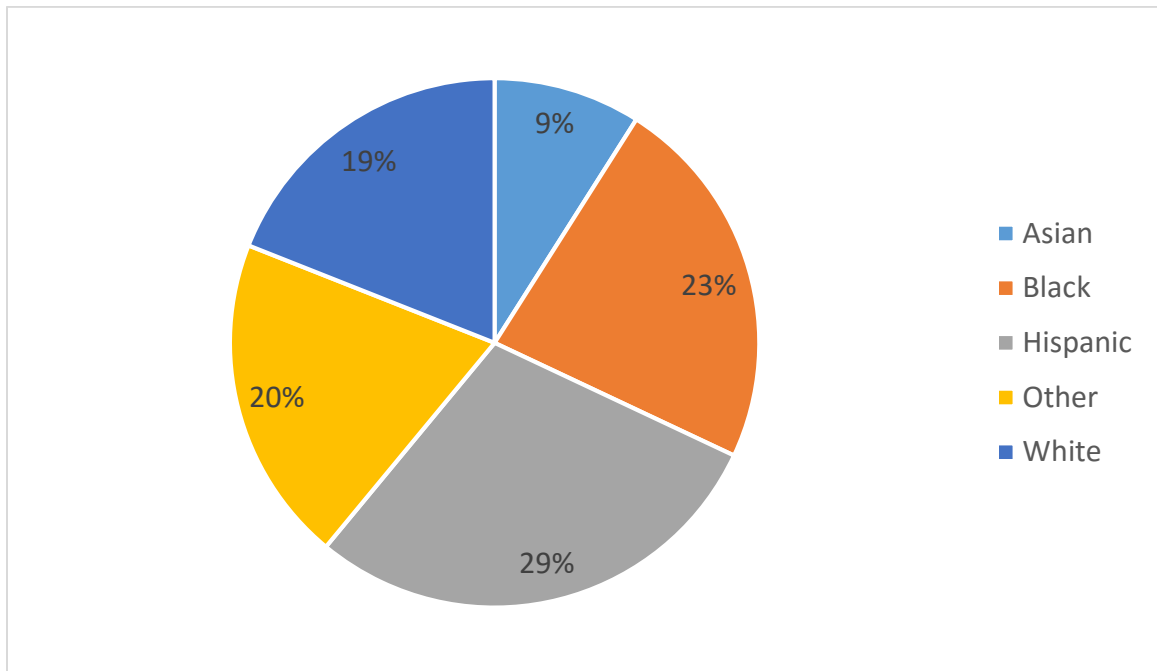


Figure 4: Race/Ethnicity of All 5-17 year-olds living in New York City, 2014 (U.S. Census Bureau, 2015)

A simple analysis of demographic subgroups by school type demonstrates that the traditional public schools, charter schools, and District 75 schools in New York City are serving different student populations. Table 4 shows that the Asian population is concentrated in traditional public schools, only making up 7.1% of district 75 schools and 2.4% of charter schools. Similarly, the white population is concentrated in traditional public schools, only making up 3.7% of the charter school population. While the Hispanic population is more evenly distributed across school types, they are underrepresented in charter schools. Conversely, the black student population is underrepresented in traditional public schools and overrepresented in district 75 schools (38.1% of the student population) and charter schools (58.8% of the student population). Also of note, there is a lower proportion of students classified with a disability in charter schools (14.2%) than in traditional public schools (18.5%) and a lower concentration of English language learners in charter schools (6.1%) than in traditional public schools (16.0%). Finally, there is a lower proportion of students living in poverty (as measured by students receiving free or reduced-price lunch) in charter schools (78.1%) than in traditional public schools (81.4%).

	Asian	Black	Hispanic	Other	White	Classified	ELL	Poverty
<b>Traditional</b>	16.7%	22.8%	41.6%	1.9%	17.0%	18.5%	16.0%	81.4%
<b>District 75</b>	7.1%	38.1%	39.0%	1.6%	14.2%	NA	16.9%	99.8%
<b>Charter</b>	2.4%	58.8%	33.4%	1.6%	3.7%	14.2%	6.1%	78.1%
<b>Total</b>	15.0%	26.8%	40.7%	1.9%	15.6%	20.5%	15.1%	81.7%

*Table 4: Elementary School Demographic Subgroups by School Type (New York City Department of Education, 2016b)*

An overwhelming majority of New York City's traditional public schools are zoned neighborhood schools; however, not all traditional public schools rely on a student's address for admission. 637 schools admit students based on home address

alone. 17 schools offer dual-language programs and use an alternate admissions process.<sup>12</sup> 5 schools exclusively serve students who qualify for gifted and talented programming through the citywide gifted and talented exam. 50 schools are in one of the city's three open enrollment districts where families can choose to attend any school within the district. 43 schools are unzoned and admit students by lottery.<sup>13</sup> And 2 schools offer special programs requiring unique admissions processes—one is an American Sign Language school for deaf children and the other is a special music school that requires an audition for entrance. Map 5 shows the locations of these different types of Traditional public schools). There are a number of notable demographic differences between these various types of traditional public schools.

Table 5 summarizes elementary school student demographic subgroup data by type of traditional public school. Schools that admit students based on a lottery have a much lower proportion of students living in poverty (66.0%) than the city as a whole (81.7%). Given the time and type of social capital required to access schools that use a lottery system, this difference is not surprising. Schools that exclusively serve students classified as gifted and talented have an overrepresentation of Asian students (16.9%) and white students (31.9%) and an underrepresentation of black students (15.6%), Hispanic students (32.0%), students classified with a disability (10.6%), English language learners (4.6%), and students living in poverty (47.2%). While unsurprising, the stark contrast

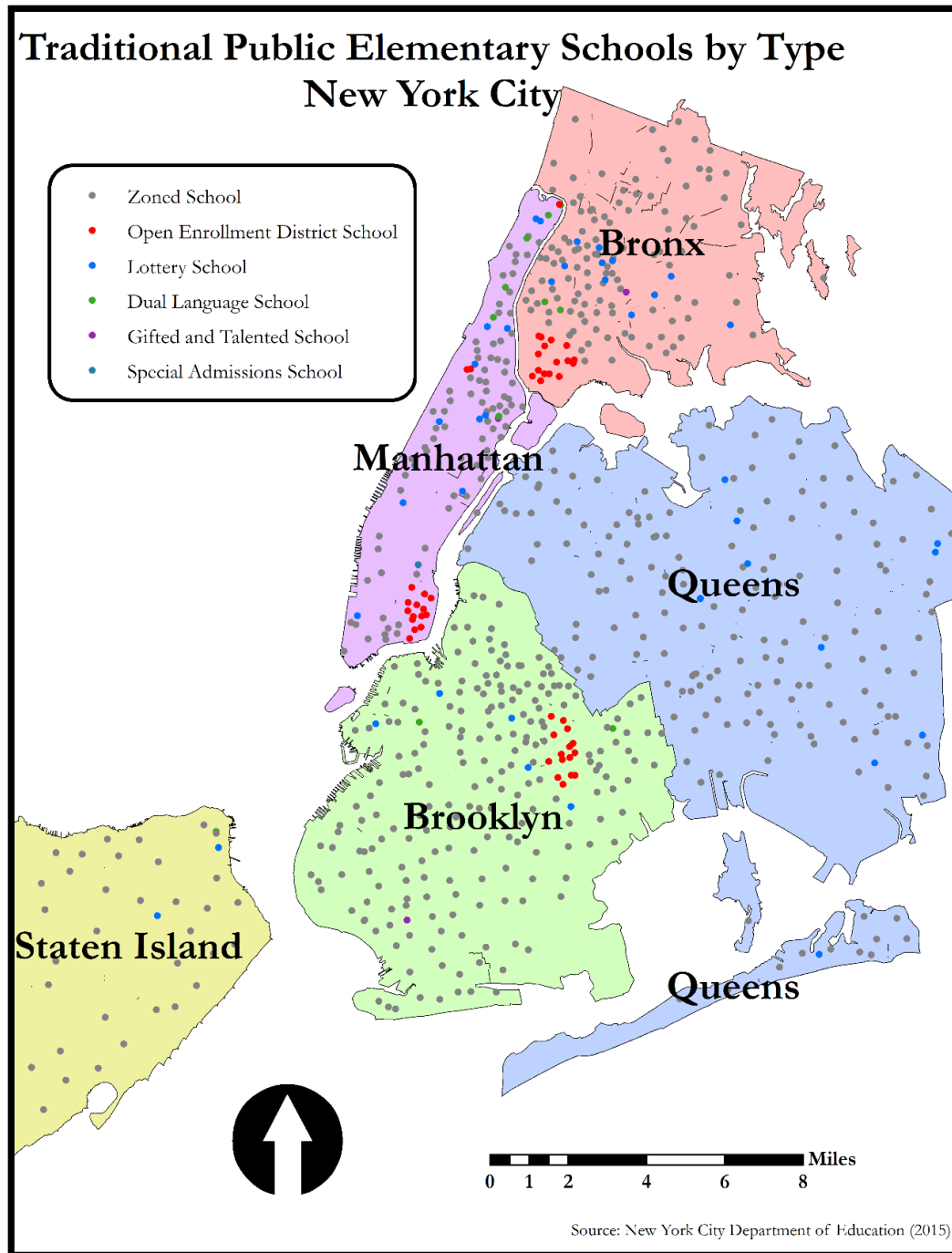
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<sup>12</sup> In January, 2015 the New York City Department of Education released a plan to increase dual language programs for the 2015-2016 school year (E. A. Harris, 2015). As a result, the number of dual-language schools is currently on the rise.

<sup>13</sup> Schools that admit students by lottery often give priority to students who have a sibling at the school already and students who live within the district.



between the gifted and talented population and the school system as a whole is a cause for deep concern. Finally, schools that offer a dual language program have a high



Map 5: Traditional Public Elementary Schools by Type, 2014-2015

proportion of Hispanic students (69.8%) and English language learners (26.6%). Such a pattern highlights another area of the school system that contributes to the high level of student segregation.

	Asian	Black	Hispanic	Other	White	Classified	ELL	Poverty
<b>Lottery</b>	11.5%	30.8%	37.1%	3.1%	17.5%	17.8%	8.3%	66.0%
<b>Gifted and Talented</b>	16.9%	15.6%	32.0%	3.6%	31.9%	10.6%	4.6%	47.2%
<b>Dual Language</b>	2.4%	21.8%	69.8%	1.0%	4.9%	19.5%	26.6%	93.6%
<b>All Traditional</b>	16.7%	22.8%	41.6%	1.9%	17.0%	18.5%	16.0%	81.4%
<b>Total</b>	15.0%	26.8%	40.7%	1.9%	15.6%	20.5%	15.1%	81.7%

*Table 5: Elementary School Demographic Subgroups by Traditional Public School Type (New York City Department of Education, 2016b)*

The demographic variation by school type does not inherently demonstrate that the presence of charter schools or other forms of school choice at the elementary level increases segregation in New York City's schools, but it is an indication that they may exacerbate the problem. It is possible that charter schools and other forms of school choice in New York City simply serve geographic areas that mirror the school-level demography. In order to disentangle segregation patterns, a deeper analysis is required.

One useful analysis considers the proportion of schools that are characterized by different levels of racial/ethnic segregation. Table 6 shows the total number of schools by type along with the percent of schools that are characterized by a multiracial population, an intensely segregated population, and apartheid schools. Multiracial schools are defined as schools with a minimum of three different racial/ethnic groups that each make up at least ten-percent of the total school population. Intensely segregated schools, are schools

with a population of Asian, black, and Hispanic students that ranges from 90-100% of the total population. And apartheid schools are defined as schools with a population of Asian, black, and Hispanic students that ranges from 99-100% of the total population.<sup>14</sup> As Table 6 shows, only 29.8% of schools in New York City have multiracial populations. Conversely, 62.3% of all schools are intensely segregated, and 6.8% of all schools can be defined as apartheid schools. Using these measures, District 75 schools are much less segregated than the school system as a whole. Also of note is the fact that charter schools are almost three times less likely to be multiracial (only 11.8% of charter schools are multiracial) and twice as likely to be apartheid schools as traditional public schools. Given these data, it appears that school choice in the form of charter schools intensifies school segregation in New York City.

	Schools	Percent Multiracial	Percent Intense Segregation	Percent Apartheid
Total Schools	908	29.8%	62.3%	6.8%
Traditional	754	30.6%	59.9%	6.4%
District 75	44	61.4%	38.6%	0.0%
Charter	110	11.8%	88.2%	12.7%

*Table 6: Elementary School Levels of Segregation/Integration by School Type (New York City Department of Education, 2016b)*<sup>15</sup>

Before moving to a different collection of segregation analyses, it is worth considering measures of multiracial, intense segregation, and apartheid school populations across the range of traditional public school types. Table 7 shows that

<sup>14</sup> The categories used for multiracial schools, intensely segregated schools, and apartheid schools are based on the work on school segregation by the UCLA Civil Rights Project (The Civil Rights Project, 2016). It is worth noting that there are no public elementary schools in New York City with a white population that exceeds 90% of the student body.

<sup>15</sup> By definition, all apartheid schools are also intensely segregated schools. Additionally, some schools do not fall into any of the segregation/integration categories.

schools admitting students by lottery are more likely to be multiracial (44.2%) than any other school type, with the exception of District 75 schools. While it is unsurprising that none of the schools exclusively serving a gifted and talented population are apartheid schools, the fact that only one of these schools is multiracial is highly problematic. Also of note is the fact that only 11.8% of dual language schools are multiracial, and 76.5% of these schools are intensely segregated. Given the explicit focus on bringing a bilingual education to students, dual language schools should be able to achieve high levels of integration and low levels of segregation.

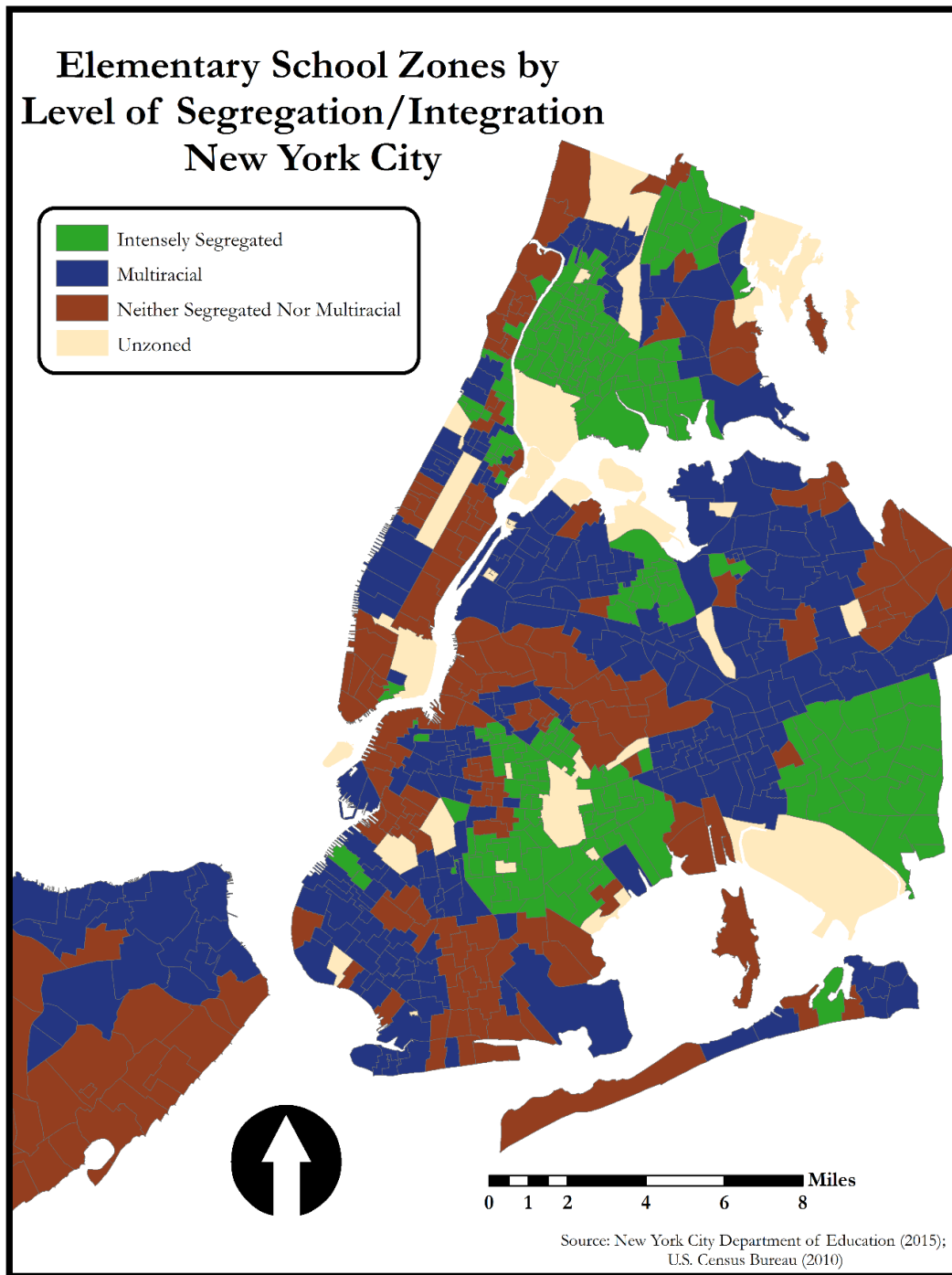
	Schools	Percent Multiracial	Percent Intense Segregation	Percent Apartheid
Lottery	43	44.2%	48.8%	7.0%
Gifted and Talented	5	20.0%	20.0%	0.0%
Dual Language	17	11.8%	76.5%	11.8%
Neighborhood	637	30.8%	59.0%	5.8%
All Traditional	754	30.6%	59.9%	6.4%
Total	908	29.8%	62.3%	6.8%

*Table 7: Elementary School Levels of Segregation/Integration by Traditional Public School Type (New York City Department of Education, 2016b)*

### Measures of Segregation by Geographic Area

An analysis of the population living in elementary school zones provides another useful lens for understanding the ways in which boundaries affect school segregation. Map 6 shows 631 elementary school zones across New York City.<sup>16</sup> Using the same definitions of multiracial and intensely segregated introduced earlier, it is possible to categorize elementary school zones in a way that allows for a comparison between schools and

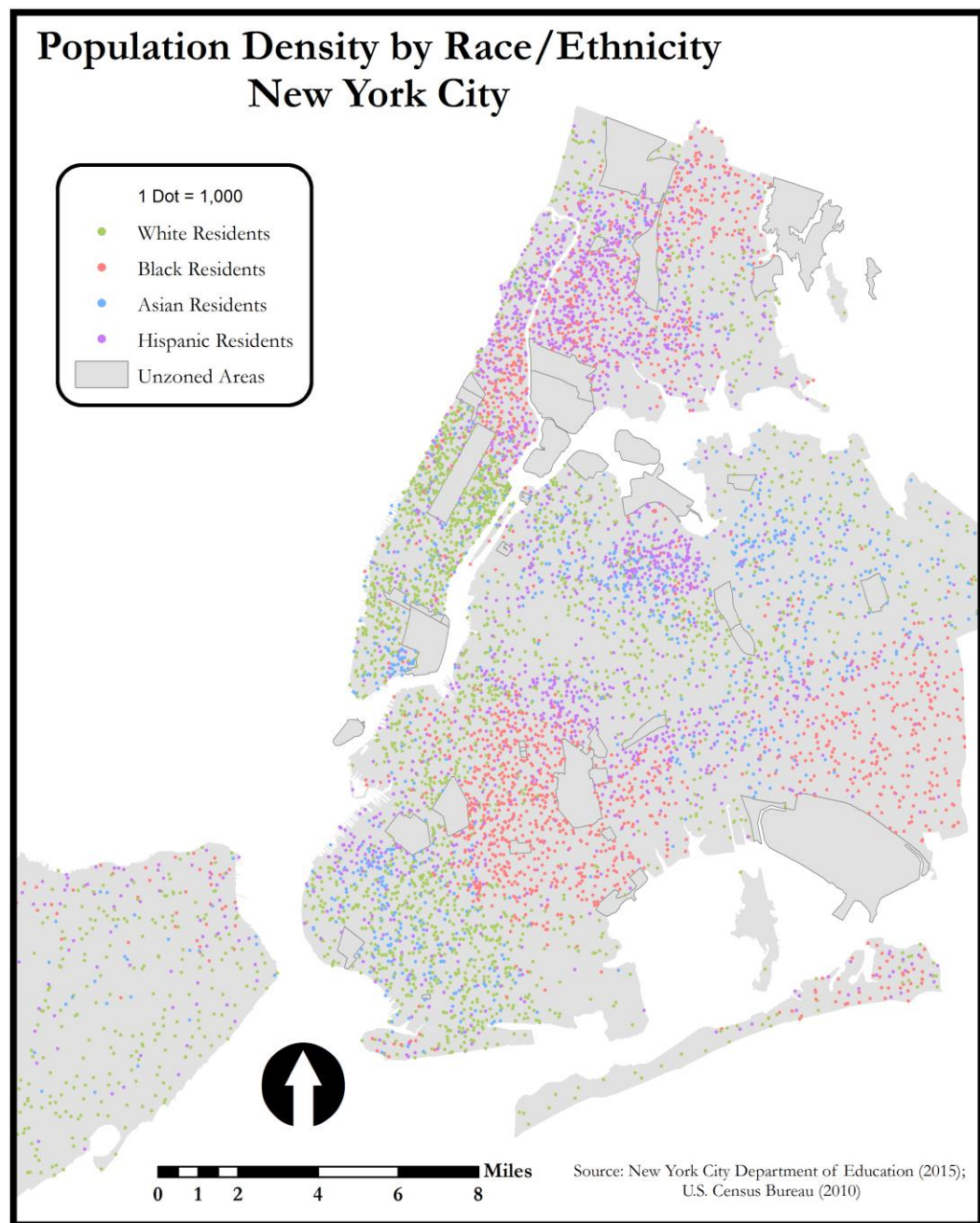
<sup>16</sup> There are 637 elementary schools that admit students by address alone. Six of these schools are currently located in an elementary school zone with multiple zoned schools because of small shifts in boundaries, school turnover, and/or school construction. These factors account for the small difference between the number of elementary school zones and the number of neighborhood public schools.



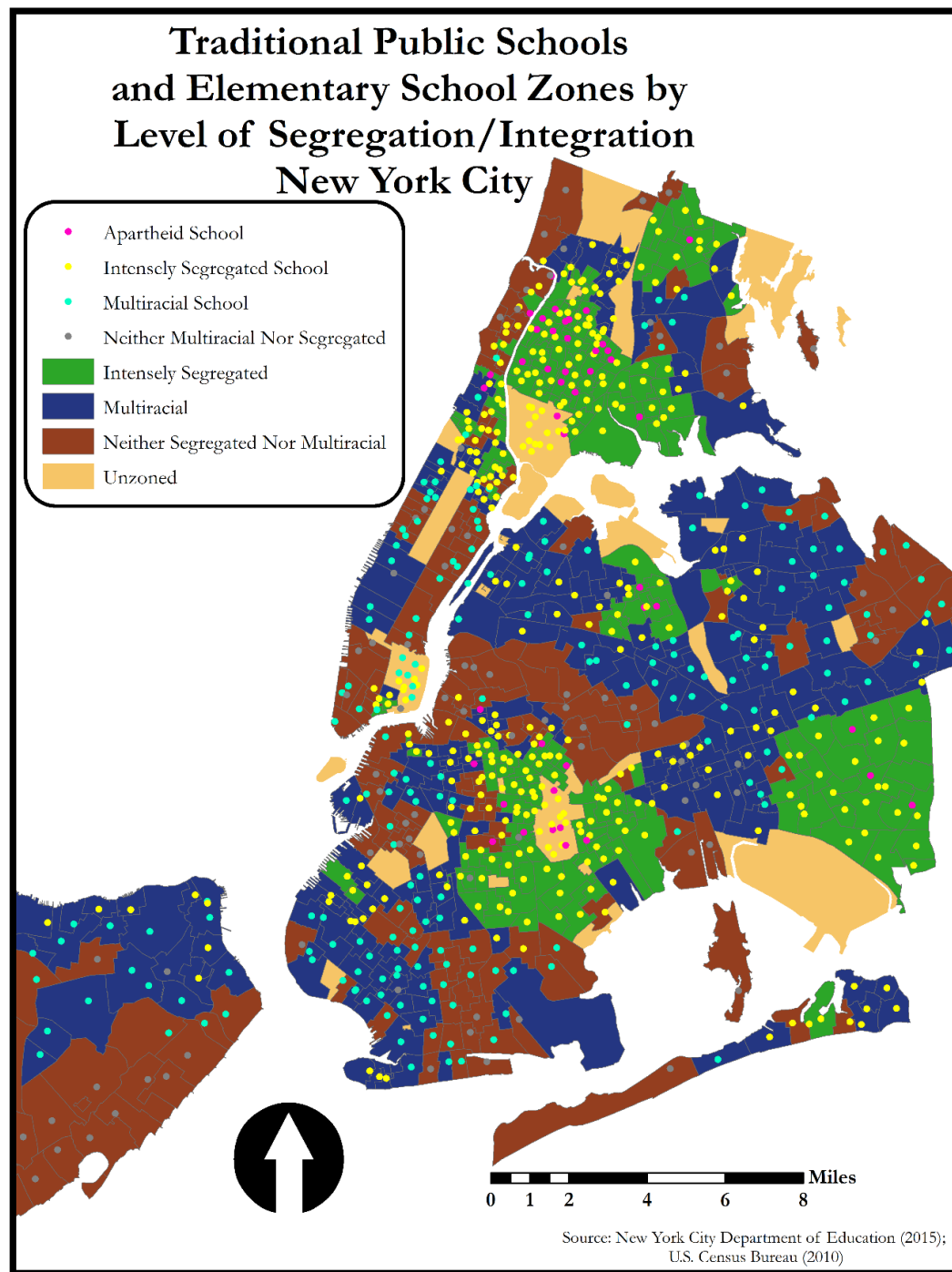
*Map 6: Elementary School Zones by Level of Segregation/Integration*

neighborhoods. As the map depicts, there is a wide distribution of elementary school zones that are multiracial in composition as well as areas that are intensely segregated. In contrast to the 63 apartheid schools at the elementary level, there are no elementary school zones that can be characterized as apartheid neighborhoods. Map 7 also provides some useful perspective on racial residential segregation. As Map 7 shows, New York City's population is highly segregated by neighborhood. There are dense pockets of White people in Manhattan, dense Asian populations in parts of Queens, and areas of the Bronx, Brooklyn and northern Manhattan that are densely populated with Black and Hispanic people.

There are a few noteworthy patterns visible in these two maps. First, multiracial and intensely segregated elementary school zones tend to cluster together. This makes sense given the reality that bordering areas are more likely to have a similar demographic composition. Second, many of the clusters of intensely segregated elementary school zones are bordered by clusters of multiracial neighborhoods. Given that the typical intensely segregated area has a dearth of white people and that the areas that are neither multiracial nor intensely segregated have the highest proportions of white people, it is unsurprising that multiracial spaces often fall between these two kinds of elementary school zones. Additionally, while there are some multiracial spaces on Staten Island, there are no intensely segregated elementary school zones in this borough. It is also worth noting that the gentrifying neighborhoods of New York City, such as parts of Harlem and Brooklyn, are multiracial. Finally, with the exception of Chinatown, all of the intensely segregated elementary school zones are far removed from the commercial and business centers of lower Manhattan, midtown Manhattan, and downtown Brooklyn.

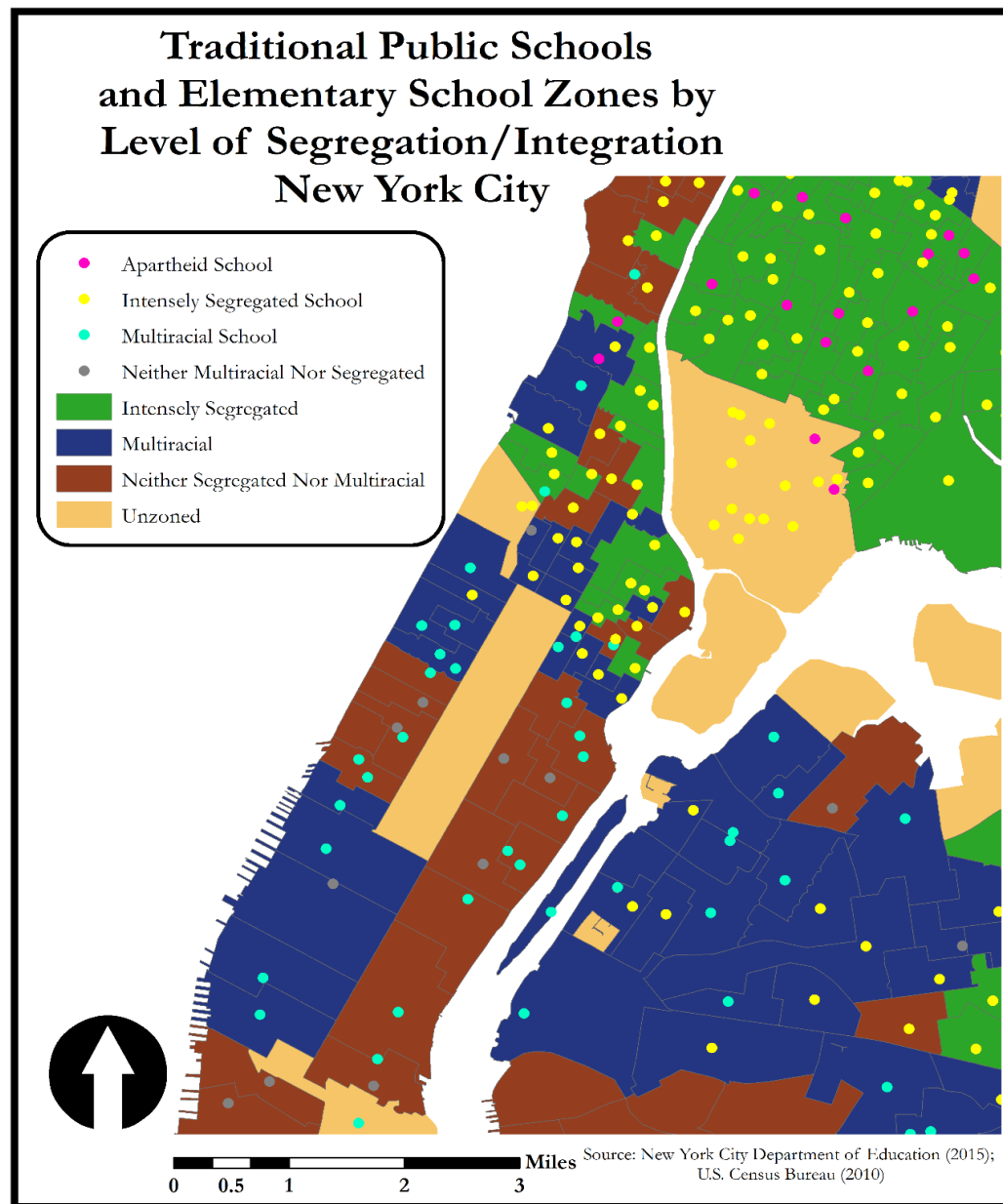


Map 7: Population Density by Race/Ethnicity, New York City

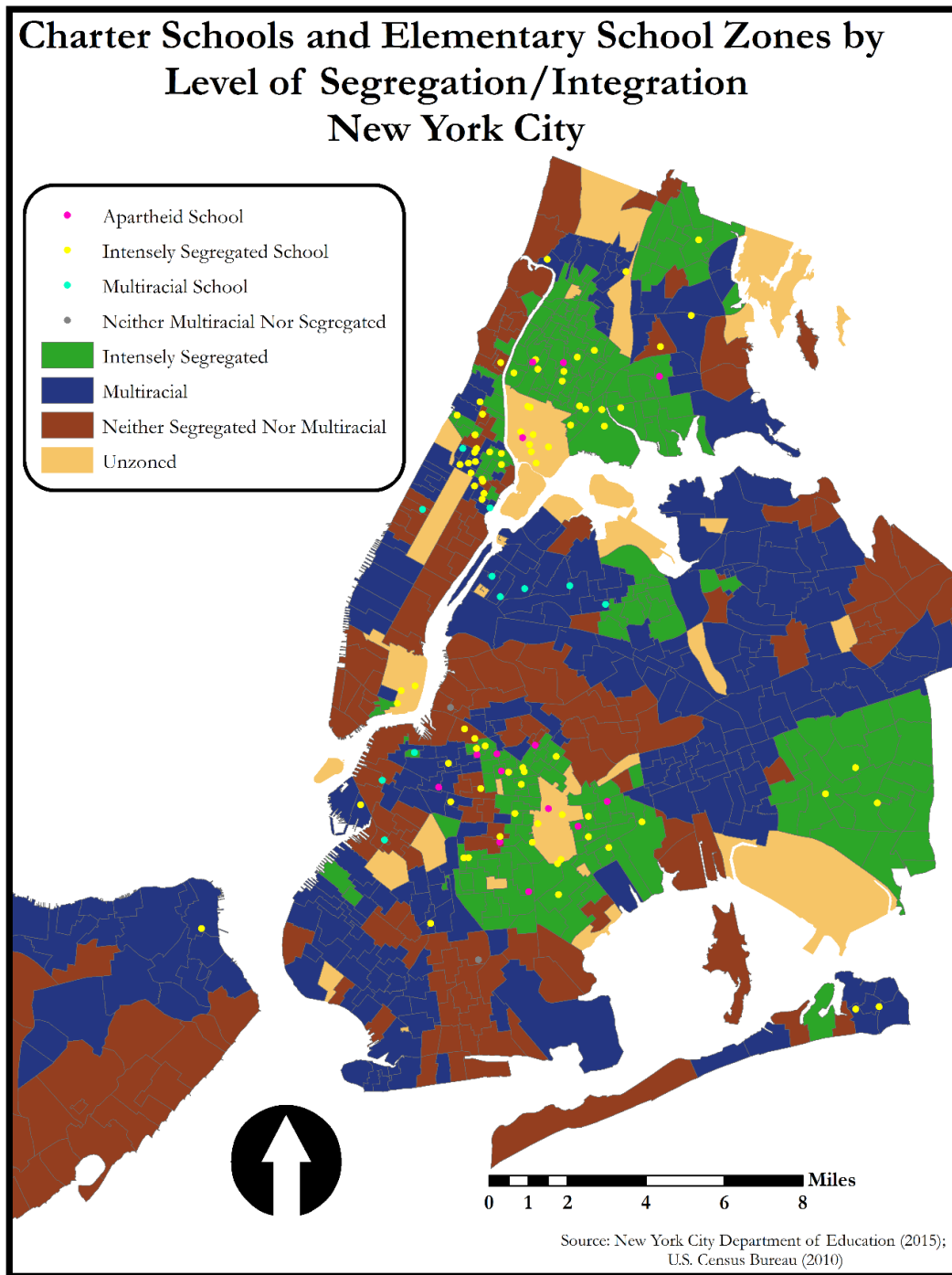


*Map 8: Traditional Public Schools and Elementary School Zones by Level of Segregation/Integration*

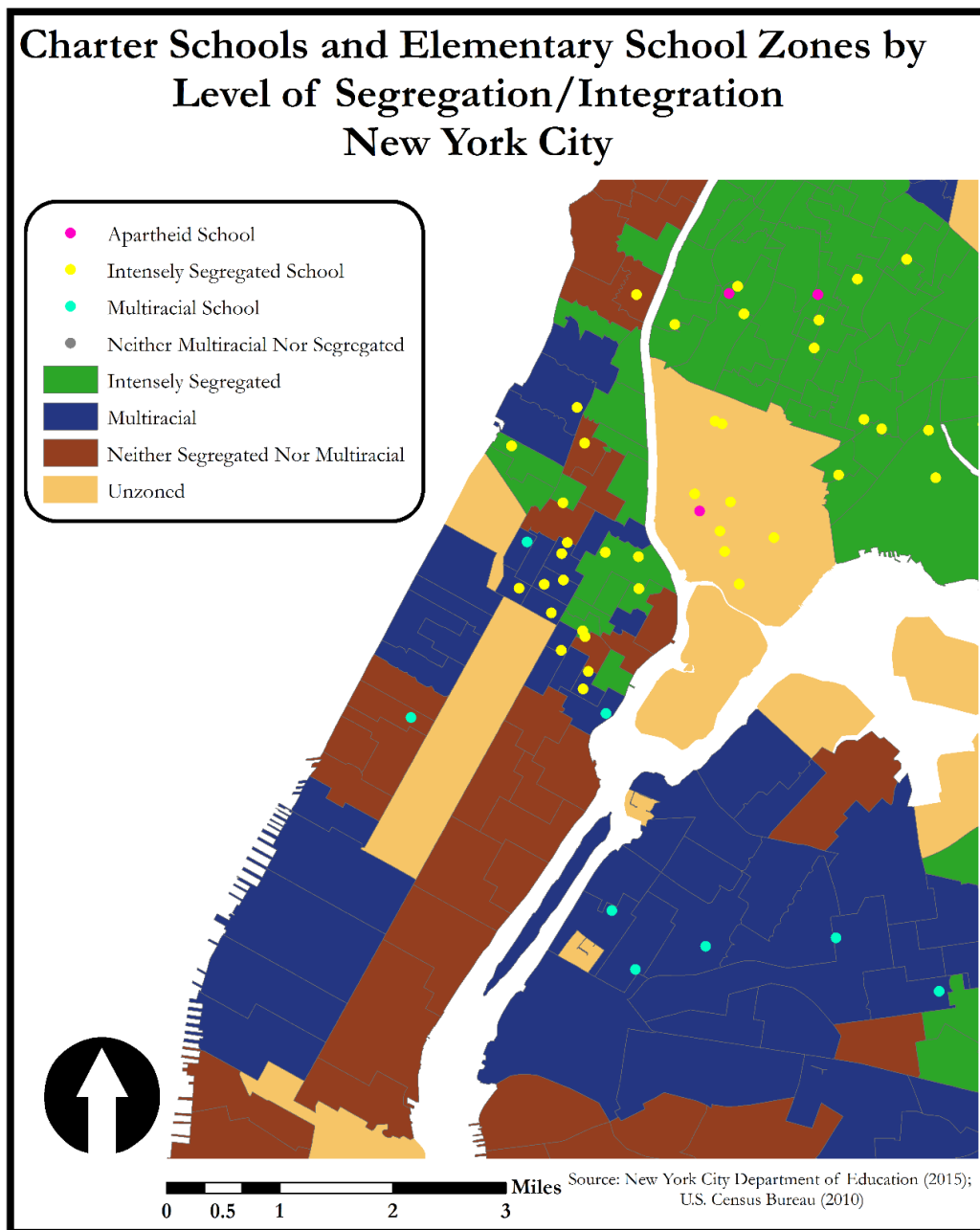




*Map 9: Traditional Public Schools and Elementary School Zones by Level of Segregation/Integration*



*Map 10: Charter Schools and Elementary School Zones by Level of Segregation/Integration*



*Map 11: Charter Schools and Elementary School Zones by Level of Segregation/Integration*

There are some notable differences between the levels of segregation and integration at the neighborhood-level and the school-level. Map 8 and Map 9 show the locations of traditional elementary schools by level of segregation/integration on top of a layer depicting the level of segregation/integration in elementary school zones. As these maps show, there is a high correlation between the levels of segregation/integration at the school-level and neighborhood-level. Map 10 and Map 11 show the locations of charter schools by level of segregation/integration on top of a layer depicting the level of segregation/integration in elementary school zones. While there is still some correlation between charter schools and elementary school zones, many charter schools have a higher level of segregation than exists in the neighborhoods where the schools are located.

Table 8 shows the numbers and percents of school zones, neighborhood schools, and charter schools by category of segregation/integration. As the table illustrates, a much higher proportion of elementary school zones than schools are multiracial, and a much lower proportion are intensely segregated. However, in comparison to charter schools, neighborhood schools are more closely aligned with school zones in terms of the levels of segregation and integration. While these numbers suggest that charter schools are intensifying segregation and limiting students' chances to learn in multiracial settings, other factors contribute to the stark differences between neighborhood-level data and school-level data. First, some of the difference between the neighborhood-level and school-level data is a result of the fact that the elementary school zone population includes all residents, which undoubtedly differs from the school-age population.<sup>17</sup>

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<sup>17</sup> Most notably, white people make up 33% of the total population of New York City in comparison to only making up 19% of the population of school-age children (U.S. Census Bureau, 2015).

Another factor contributing to lower levels of integration and higher levels of segregation at the school-level is the population that opts out of neighborhood schools and into other public options or private schools. Finally, it is possible that certain families use false addresses to attend out-of-zone schools. Regardless of how much each of these factors contributes to the lower levels of integration and higher levels of segregation at schools, it is clear that New York City’s residential patterns do not fully account for the extreme levels of segregation found in the schools.

	School Zones		Neighborhood Schools		Charter Schools	
	#	%	#	%	#	%
<b>Total</b>	631		637		110	
<b>Multiracial</b>	250	39.6%	196	30.8%	13	11.8%
<b>Intensely Segregated</b>	214	33.9%	376	59.0%	97	88.2%
<b>Apartheid</b>	0	0.0%	37	5.8%	14	12.7%
<b>Neither Multiracial nor Intensely Segregated</b>	167	26.5%	65	10.2%	0	0%

*Table 8: Segregation/Integration Across School Zones and Schools, 2014-2015 (New York City Department of Education, 2016b; U.S. Census Bureau, 2010)*

### **Dissimilarity, Exposure, and Isolation Across Elementary Schools**

A number of more complex measures provide additional insight into the nature of New York City’s school and neighborhood segregation problem. Table 9 presents three different measures of segregation for elementary schools and school zones—dissimilarity, exposure, and isolation—along with data on the proportion of each

	All Schools	Charter Schools	District 75 Schools	Neighbor- hood Schools	School Zones		All Schools	Charter Schools	District 75 Schools	Neighbor- hood Schools	School Zones
<b>White</b>						<b>Hispanic</b>					
Dissimilarity with Blacks	80.7	73.7	38.5	81.4	78.9	Dissimilarity with Whites	67.0	66.4	40.3	66.0	61.8
Dissimilarity with Hispanics	67.0	66.4	40.3	66.0	61.8	Dissimilarity with Blacks	54.9	49.2	19.0	56.2	54.5
Dissimilarity with Asians	57.4	47.3	30.4	57.8	48.0	Dissimilarity with Asians	62.3	58.7	45.6	60.0	55.4
Dissimilarity with Others	51.8	58.1	35.6	51.0	50.0	Dissimilarity with Others	52.0	42.5	34.0	53.0	41.7
The average White is in a space with						The average Hispanic is in a space with					
a % White of	45.4	26.4	22.9	46.7	59.4	a % White of	9.9	3.5	12.0	11.0	20.9
a % Black of	9.3	31.9	33.2	7.5	7.7	a % Black of	20.5	42.8	37.3	17.2	20.2
a % Hispanic of	26.1	31.7	33.3	25.6	17.4	a % Hispanic of	57.5	49.6	42.9	57.7	45.6
a % Asian of	16.7	7.1	8.8	17.7	13.3	a % Asian of	10.6	2.7	6.3	12.7	10.6
a % Other of	2.5	2.9	1.9	2.5	2.3	a % Other of	1.5	1.5	1.6	1.4	2.7
Percent White	15.5	3.7	14.1	17.5	32.7	Percent Hispanic	40.8	33.5	39.1	40.7	28.8
<b>Black</b>						<b>Asian</b>					
Dissimilarity with Whites	80.7	73.4	38.5	81.4	78.9	Dissimilarity with Whites	57.4	47.3	30.4	57.8	48.0
Dissimilarity with Hispanics	54.9	49.2	19.0	56.2	54.5	Dissimilarity with Blacks	80.1	60.8	44.8	79.4	77.0
Dissimilarity with Asians	80.1	60.8	44.8	79.4	77.0	Dissimilarity with Hispanics	62.3	58.7	45.6	60.0	55.4
Dissimilarity with Others	55.7	31.8	36.1	58.1	52.4	Dissimilarity with Others	56.9	52.8	27.8	56.2	44.2
The average Black is in a space with						The average Asian is in a space with					
a % White of	5.4	2.0	12.3	6.0	11.7	a % White of	17.2	11.0	17.4	17.3	35.3
a % Black of	56.7	70.4	41.5	53.9	54.7	a % Black of	9.1	39.2	33.4	7.9	8.6
a % Hispanic of	31.1	24.4	38.4	31.8	25.6	a % Hispanic of	29.1	37.3	34.3	28.9	23.2
a % Asian of	5.1	1.6	6.3	6.4	4.9	a % Asian of	42.4	10.5	12.6	43.8	29.7
a % Other of	1.8	1.6	1.5	1.9	3.1	a % Other of	2.2	2.0	2.4	2.1	3.3
Percent Black	26.9	58.7	38.0	22.0	22.6	Percent Asian	14.9	2.4	7.2	17.9	13.2

Table 9: Measures of Segregation, Elementary School-Level

subgroup present in each category of school or geographic area. Dissimilarity measures compare the populations of two demographic subgroups. The dissimilarity value represents the percent of either of the two subgroups that would need to move (either schools or school zones) in order to ensure that each subgroup has a perfectly proportional representation in each location (school or school zone).

The exposure and isolation measures are comingled in Table 9. Informally, exposure values measure the proportion of each demographic subgroup that will be present in the average student of demographic subgroup A's school or neighborhood. More precisely, exposure values represent the likelihood of a student from subgroup A interacting with a student from subgroup B upon each new interaction with a person in the average space for subgroup A.<sup>18</sup> Isolation values are similar to exposure; they represent the likelihood of a student from subgroup A interacting with another student from subgroup A upon each new interaction with a person in the average space for subgroup A.<sup>19</sup>

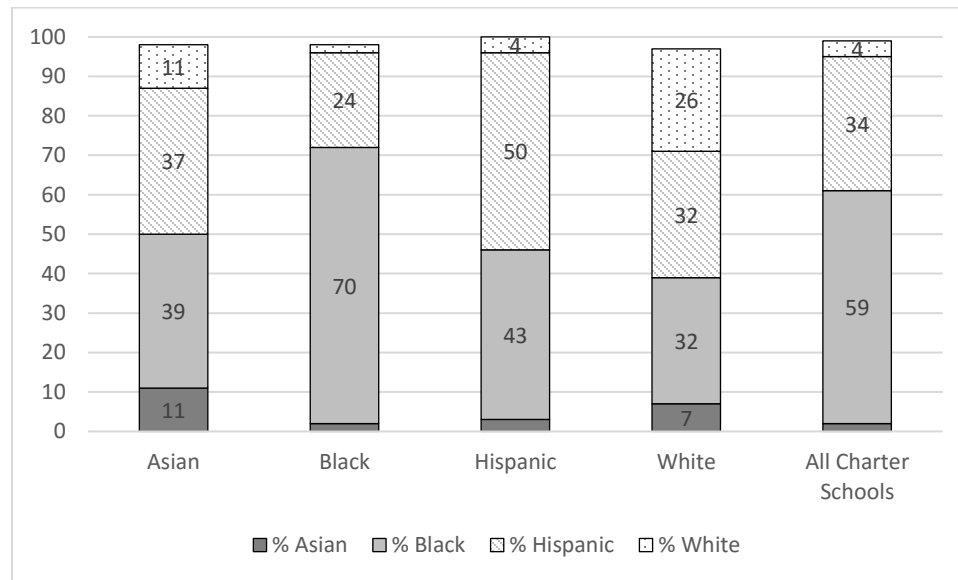
As Table 9 shows, the highest dissimilarity levels exist between the white and black populations. 81.4% of either black students or white students would need to change schools to achieve perfect proportionality across neighborhood schools. This is slightly higher than the 78.9% of the overall population of white or black people that would need to move school zones in order to achieve perfect proportionality at the neighborhood-level. While black-white dissimilarity is higher for neighborhood schools than charter

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<sup>18</sup> Note that measures of exposure and isolation assume all students within a school or all residents within an elementary school zone have the same likelihood of interacting with one another regardless of their demographic subgroup. In reality, we know that segregation occurs within schools and neighborhoods through a variety of mechanisms such as tracking (Sadovnik & Coughlan, 2015). As a result, these measures likely overestimate interracial exposure.

<sup>19</sup> See Chapter Three for a more complete discussion of measures of dissimilarity, exposure, and isolation.

schools (73.7) and District 75 schools (38.5), this difference in dissimilarity values does not mean that charter schools are less segregated than neighborhood schools. It does, however, mean that in order to have a perfectly proportional representation of black and white students in each separate school system, fewer black or white students would need to change charter schools than neighborhood schools.

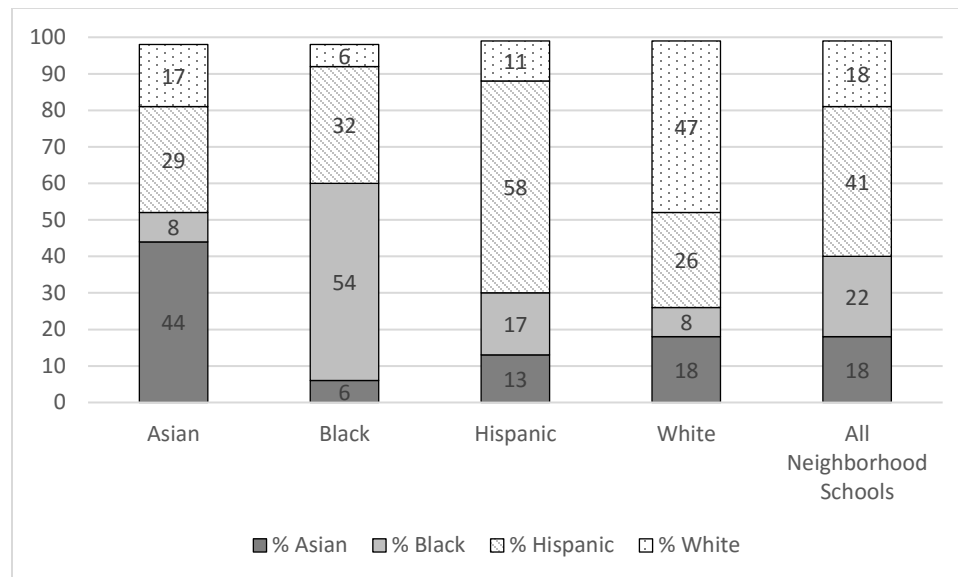


*Figure 5: Composition of Charter School Attended by Typical Student, by Race and Ethnicity*

The exposure and isolation values provide greater insight into the comparative levels of black-white segregation and integration in charter schools and neighborhood schools. As Figure 5 shows, the average black charter school student will come into contact with a white student in 2% of interactions, an Asian student in 2% of interactions, a Hispanic student in 24% of interactions, and another black student in 70% of interactions. Comparatively, the average black student in a neighborhood school will come into contact with a white student in 6% of interactions, an Asian student in 6% of



interactions, a Hispanic student in 32% of interactions, and another black student in 54% of interactions (see Figure 6). Levels of exposure and isolation in charter schools and neighborhoods schools are similar for Hispanic students. While black and Hispanic students' exposure to white and Asian students in neighborhood schools is disproportionately low in comparison to the overall proportion of each subgroup in the total population, it is not nearly as low in neighborhood schools as it is in charter schools. In fact, black and Hispanic students are three times as likely to interact with a white or Asian student in a neighborhood school than in a charter school according to the exposure measures.



*Figure 6: Composition of Neighborhood School Attended by Typical Student, by Race and Ethnicity*

It is important to note that white students and Asian students are more likely to interact with black and Hispanic students in charter schools than in neighborhood schools. According to exposure measures, the average white student in a charter school

will come into contact with a black student in 32% of interactions and a Hispanic student in 32% of interactions. The average Asian student in a charter school will come into contact with a black student in 39% of interactions and a Hispanic student in 37% of interactions. While these numbers suggest that charter schools elevate white and Asian students' exposure to black and Hispanic students, this is largely a result of the dramatic underrepresentation of white and Asian students in charter schools. Only 4% of charter school students are white in comparison to the 18% of neighborhood school students who are white. Similarly, only 2% of charter school students are Asian in comparison to the 18% of neighborhood school students who are Asian.

Across all school types and school zones, dissimilarity is smallest between Asian and white subgroups and between black and Hispanic subgroups. Asian-white dissimilarity ranges from a low of 30.4 in District 75 schools to a high of 57.8 in neighborhood schools. Black-Hispanic dissimilarity ranges from a low of 19.0 in District 75 schools to a high of 56.2 in neighborhood schools. While these dissimilarity values are much lower than the black-white, Hispanic-white, Asian-black, and Asian-Hispanic values, they are still unacceptably high. As a comparison, consider the black-white dissimilarity of 2.6 in the Morris School District, which desegregated under court order in 1971 (Tractenberg, Roda, & Coughlan, 2016). While comparing New York City's massive, urban school system to the relatively small, suburban Morris School District is impossible, the Morris example demonstrates that genuine school-level integration is possible.

Before considering another collection of segregation measures, it is worth noting the relatively high levels of integration found in District 75 schools. In comparison to

charter schools, neighborhood schools, and elementary school zones, dissimilarity across all subgroups is markedly lower in District 75 schools. There are a number of factors that account for this trend. First, there is a relatively small number (44) of District 75 schools serving elementary school students with special education needs. These forty-four schools are distributed throughout the city and generally have much larger catchment areas than both neighborhood schools and charter schools. Additionally, many of the District 75 schools attract students based on the availability of specialized services, extending catchment areas even more. While it is difficult to make direct comparisons between District 75, the charter district, and neighborhood schools, the example highlights that it is possible to increase school-level integration within New York City.

### **Dissimilarity, Diversity, and Entropy by Borough and District**

New York City's neighborhoods are diverse in terms of racial/ethnic composition, socioeconomic status, age, religion, and urbanicity. As much as New York City's 8.4 million residents view themselves as New Yorkers, they also identify themselves by the neighborhoods and boroughs where they reside. Because of the distinct nature of New York City's boroughs and neighborhoods, it is important to consider differences in school segregation by smaller geographies as well as the city as a whole. This section considers a number of new segregation measures by borough and school district.

Before delving into measures of segregation, it is worth noting that New York City's student population is not spread evenly across the city. 31% of New York City public elementary school students attend school in Brooklyn, 27% in Queens, 22% in the Bronx, 14% in Manhattan, and 6% in Staten Island (New York City Department of

Education, 2016b). As Table 10 shows, in contrast to the proportion of Asian students in the city as a whole (15%), the proportion of Asian students is highest in Queens (28%) and lowest in the Bronx (3.9%). In the city as a whole, black students make up 27% of all students, while the proportion of black students is highest in Brooklyn (38%) and lowest in Staten Island (13%). In the city as a whole, Hispanic students make up 41% of all students, while the proportion of Hispanic students is highest in the Bronx (63%) and lowest in Staten Island (29%). Finally, in the city as a whole, white students make up 16% of all students, while the proportion of white students is highest in Staten Island (48%) and lowest in the Bronx (4%). These differences between boroughs are important to note both for understanding the nature of segregation across New York City and for considering potential solutions.

	Asian	Black	Hispanic	Other	White
<b>Brooklyn</b>	14.9%	37.6%	28.9%	1.6%	17.0%
<b>Bronx</b>	3.9%	27.9%	62.6%	1.2%	4.4%
<b>Manhattan</b>	11.6%	22.7%	43.8%	2.8%	19.1%
<b>Queens</b>	27.7%	18.3%	37.2%	2.4%	14.4%
<b>Staten Island</b>	7.2%	13.4%	29.2%	1.9%	48.3%
<b>Total</b>	15.0%	26.8%	40.7%	1.9%	15.6%

*Table 10: Elementary School Demographic Subgroups by Geographic Area (New York City Department of Education, 2016b)*

Table 11 provides a new measure of dissimilarity, a diversity score, a multi-group entropy index (also known as Theil's Index), and exposure/isolation measures for white and black students. In this table the measure of dissimilarity compares the white student population to the combined population of black and Hispanic students. As Orfield and his colleagues argue, similarities in the structures that segregate the black and Hispanic students from white students as well as similarities in the achievement gaps between

	Black/Hispanic-White Dissimilarity	Diversity Score*	Multi-group Entropy Index*	The average White student is in a space with				The average Black student is in a space with			
				% Asian	% Black	% Hispanic	% White	% Asian	% Black	% Hispanic	% White
All Schools	71.1	.9358	.3689	16.7	9.3	26.1	45.4	5.1	56.7	31.1	5.4
Charter	70.2	.6412	.2581	7.1	33.2	31.7	26.4	1.6	70.4	24.4	2.0
District 75	38.4	.8679	.0855	8.8	31.9	33.3	22.9	6.3	41.5	38.4	12.3
ESZ**	67.4	.9601s	.3380	13.3	7.7	17.4	59.4	3.1	54.7	25.6	11.7
Manhattan	<b>73.8</b>	<b>.9109</b>	<b>.3857</b>	<b>12.1</b>	<b>9.0</b>	<b>22.6</b>	<b>50.9</b>	<b>4.1</b>	<b>47.5</b>	<b>39.0</b>	<b>7.2</b>
1	59.1	.8973	.2074	14.6	13.0	36.4	32.5	11.1	20.5	54.7	12.2
2	45.3	.8674	.2647	14.5	5.2	14.6	59.3	23.6	11.1	25.1	35.6
3	62.0	.9132	.2389	10.0	9.2	21.4	54.4	3.6	45.7	32.9	15.1
4	47.2	.6851	.0986	10.2	26.7	44.9	13.0	5.9	28.0	59.4	4.7
5	28.6	.6360	.0804	3.0	44.6	42.1	7.3	1.7	53.2	40.4	2.8
6	59.2	.3380	.1872	2.6	4.8	69.4	21.3	1.6	10.4	81.2	5.9
Bronx	<b>59.3</b>	<b>.6589</b>	<b>.1637</b>	<b>6.9</b>	<b>16.8</b>	<b>53.8</b>	<b>21.0</b>	<b>2.8</b>	<b>38.2</b>	<b>55.1</b>	<b>2.7</b>
7	25.8	.4929	.0284	1.0	25.8	70.8	1.7	1.0	26.9	70.0	1.3
8	61.4	.6799	.1479	7.0	8.3	62.0	21.3	3.1	29.4	64.8	2.7
9	21.2	.5212	.0472	1.1	30.0	66.8	1.6	1.0	32.7	64.6	1.1
10	55.7	.5686	.1124	7.3	10.3	60.0	20.4	3.4	19.0	73.5	3.2
11	50.6	.8540	.1893	8.3	19.0	44.1	27.4	5.2	54.4	33.1	5.2
12	26.9	.5291	.0534	3.1	27.2	66.8	1.4	2.2	28.4	67.2	1.1
Brooklyn	<b>71.7</b>	<b>.9488</b>	<b>.3910</b>	<b>19.6</b>	<b>12.1</b>	<b>22.2</b>	<b>43.9</b>	<b>3.5</b>	<b>69.5</b>	<b>19.9</b>	<b>5.4</b>
13	52.3	.7950	.1517	5.1	37.6	16.2	35.4	5.2	61.3	18.8	11.5
14	64.6	.7340	.2182	4.8	7.6	41.7	44.3	2.4	26.2	61.8	8.8
15	57.9	.9106	.2899	10.5	8.4	20.3	56.1	9.4	22.4	31.6	33.3
16	31.8	.4666	.0619	1.2	80.6	15.2	2.3	1.9	78.3	17.6	1.4
17	36.6	.5011	.0920	2.8	68.6	20.8	5.5	2.0	77.2	16.3	2.3
18	25.5	.2896	.0416	1.7	87.3	7.0	2.9	1.4	89.6	5.9	1.9
19	29.7	.7161	.2372	9.3	45.8	41.3	2.3	5.1	58.8	33.3	1.6
20	34.0	.7989	.1663	35.0	1.2	23.0	39.8	36.9	1.9	29.2	30.9
21	37.1	.9313	.1432	24.6	4.9	25.0	44.5	13.8	33.0	32.5	19.8
22	60.0	.9593	.2442	19.5	16.5	13.1	49.2	9.0	59.1	16.2	14.1
23	25.3	.4785	.0362	1.1	72.5	23.3	1.7	0.9	73.6	23.2	1.1
32	69.3	.5146	.2277	2.7	5.9	59.2	31.7	1.5	30.5	64.9	2.4
Queens	<b>62.0</b>	<b>.9524</b>	<b>.3299</b>	<b>24.9</b>	<b>6.3</b>	<b>30.8</b>	<b>36.0</b>	<b>12.1</b>	<b>59.3</b>	<b>21.0</b>	<b>4.9</b>
24	67.7	.7131	.2663	13.1	1.2	41.0	43.4	22.2	4.3	61.4	11.6
25	43.0	.8034	.1551	40.4	3.5	25.0	29.9	40.5	17.7	29.5	11.3
26	25.8	.7861	.0641	49.5	5.0	14.5	29.0	55.1	7.2	15.3	20.7
27	65.7	.9448	.3035	9.0	8.5	29.3	51.0	11.5	49.9	30.7	4.2
28	65.0	.9871	.2526	29.0	6.4	22.7	37.5	14.8	54.6	19.7	5.1
29	44.7	.6834	.3019	29.0	44.0	19.8	3.0	6.7	80.1	10.1	1.3
30	52.1	.8165	.1636	24.2	5.1	40.3	28.3	17.5	16.9	51.7	12.7
Staten Island	<b>54.9</b>	<b>.8459</b>	<b>.2123</b>	<b>7.2</b>	<b>5.9</b>	<b>20.4</b>	<b>64.8</b>	<b>5.4</b>	<b>30.5</b>	<b>40.6</b>	<b>21.3</b>
31	55.0	.8378	.2138	7.3	5.2	20.1	65.7	5.8	29.1	42.0	20.9

\*These calculations include population of Asian, black, Hispanic, and white students. They exclude the population of students that identify as Other. \*\*These calculations include the full population (all ages and residents) of the elementary school zones.

Table 11: Measures of Segregation Across Geographic Areas, Elementary School-Level

these populations require a careful consideration of how the combined black and Hispanic population is segregated in our society's institutions (Orfield et al., 2014).

The diversity scores provided in Table 11 measure the overall diversity in each collection of schools (or neighborhoods). The diversity scores range from zero to the natural log of the number of subgroups included (in this case, the score range is 0 – 1.3863). A value of 1.3863 would represent an area that has equal numbers of Asian, black, Hispanic, and white students (or people, in the case of the neighborhood measure), whereas a value of zero would represent an area that is entirely made up of one racial/ethnic group.

The multi-group entropy index (Theil's Index), is a measure of evenness across all units within a space. Specifically, it measures the average difference between the proportional representation of each demographic subgroup in each individual school (or school zone) and the proportional representation of each demographic subgroup in the full collection of schools (or neighborhoods). Values range from zero to one. A multi-group entropy index score of 0 indicates perfect integration, with every unit (school or neighborhood) in the full area having a perfectly proportional representation from all demographic subgroups; a multi-group entropy index score of 1 indicates perfect segregation, with every unit (school or neighborhood) only having representation from a single demographic subgroup. A careful evaluation of both the diversity score and the multi-group entropy index can provide useful insight into the nature of segregation/integration in a space.<sup>20</sup>

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<sup>20</sup> See Chapter Three for a more complete discussion of the segregation measures discussed here.

The top rows of Table 11 provide data for all elementary schools, charter schools serving elementary students, District 75 schools serving elementary students, and the full population living in all elementary school zones. Following this data, the table provides the same measures for neighborhood schools within each borough and within each school district. Note that Staten Island, the borough with the smallest public school student population, has only one school district while Brooklyn, the borough with the largest public school student population, has twelve school districts.

Similar to the earlier analysis of dissimilarity scores, the black/Hispanic–white dissimilarity is greater in neighborhoods schools than in charter schools, District 75 schools, or elementary school zones. However, where there was a seven-point black–white dissimilarity score difference between all schools and charter schools, there is less than a one-point difference in the black/Hispanic–white dissimilarity scores between all schools and charter schools. This indicates that when the black and Hispanic populations are aggregated and compared to the white populations, disproportionality across all schools is not much different than disproportionality across the charter school system. Another informative piece of data provided by the black/Hispanic–white dissimilarity scores is that dissimilarity in these populations is greatest in Manhattan (73.8) and Brooklyn (71.7). Manhattan and Brooklyn’s populations are also most similar to the overall population of New York City in terms of race and ethnicity (see Table 10). Black/Hispanic–white dissimilarity is lowest in the Bronx (59.3) and Staten Island (55.0). This does not mean that segregation is lowest in the Bronx and Staten Island. An evaluation of the racial/ethnic composition of these two boroughs shows that the Bronx has a dramatic underrepresentation of white students while Staten Island has a dramatic

overrepresentation of white students. The low proportion of white students in the Bronx and the high proportion of white students in Staten Island is largely responsible for the lower dissimilarity in these areas. As the exposure/isolation measures reveal, the average white student in Staten Island only has a 5% chance of coming into contact with a black student upon each interaction. Similarly, the average black student in the Bronx only has a 3% chance of coming into contact with a white student upon each interaction.

As noted earlier, three school districts have open enrollment systems allowing students to go to any elementary school in the district. One open enrollment district is in Manhattan (District 1), one is in the Bronx (District 7), and one is in Brooklyn (District 23). These three districts serve dramatically different student populations. As evidenced by the diversity scores, District 1 has a much higher level of diversity (.8973) than District 7 (.4929) and District 23 (.4785). Districts 7 and 23 each have a white population of 1% and an Asian population of 1%, whereas the white student population in District 1 is 21% and the Asian student population is 22%. District 7 is 72% Hispanic and 25% Black, and District 23 is 72% Black and 24% Hispanic (both are over 96% Black and Hispanic). While District 1 has a much higher diversity score (indicating greater diversity), its higher black/Hispanic-white dissimilarity and higher multi-group entropy index show that there are higher levels of segregation within the district. In comparison to other Manhattan school districts, all of which use neighborhood schools for enrollment purposes, students in District 1 are in schools that are less diverse and more segregated than in three of the other five districts. These data suggest that the open enrollment plan is not currently aiding District 1 in achieving greater levels of diversity and integration. While Districts 7 and 23 have very low multi-group entropy indices, suggesting greater



levels of integration, the overall student populations in these districts are intensely segregated to begin with, making the multi-group entropy indices meaningless.

One useful comparison provided in Table 11 is the exposure/isolation values for white students and black students in different spaces across the city. In most areas of the city exposure/isolation values are very different for black and white students. For example, the average black student in Brooklyn comes into contact with a white student in 5% of interactions, while the average white student in Brooklyn comes into contact with another white student in 44% of interactions. Although this disparity in exposure/isolation is quite consistent throughout all boroughs and districts in the city, there are two spaces worth noting where black and white students inhabit similar spaces. District 26 in Queens has similar exposure/isolation numbers for black and white students and a low multi-group entropy index indicating an even distribution of racial/ethnic subgroups across schools. However, District 26 also has the highest concentration of Asian students of any district in the city and a low concentration of black students, lowering the area's relative diversity score. The other notable example is District 75. While the District 75 schools are far from perfect in terms of diversity and integration, the district has the most promising combination of black/Hispanic-white dissimilarity, diversity, multi-group entropy, and white and black exposure/isolation values. As a whole, Table 11 highlights that segregation is a universal problem in New York City schools, but it also suggests some potential pathways to improving diversity and integration. These solutions are explored at the end of this chapter.

### **Dissimilarity, Exposure, and Isolation Across School Levels**

The focus of this study has remained on elementary schools because boundaries have less of an effect on school admissions for middle school and high school students in New York City. As noted earlier, school choice is more common for middle school students and is the norm for high school students in New York City. Given the differences in how boundaries are used for schooling across grade levels in New York City, it is worth comparing levels of integration and segregation at the elementary, middle, and secondary levels.

Table 12 provides measures of dissimilarity, exposure, and isolation for traditional public schools and charter schools at the elementary, middle, and secondary levels.<sup>21</sup> When comparing traditional public schools, dissimilarity universally decreases for Asian students, black students, Hispanic students, and white students moving from elementary schools to middle schools to high schools. This indicates that the weakening effect of boundaries on admissions moving up in school levels allows for increased integration. However, it is worth noting that proportions of each racial/ethnic group change markedly between elementary, middle, and high school. Most notably, the proportion of white students decreases from 18% in elementary school to 16% in middle school to 13% in high school, and the proportion of black students increases from 22% in elementary school to 27% in middle school to 29% in high school. This population shift, likely a result of white families opting out of public schools or moving out of the city

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<sup>21</sup> Again, elementary schools are defined as schools that serve third grade students. Here, middle schools are defined as institutions that serve eighth grade students, and high schools are defined as institutions that serve tenth grade students. Note that there is some overlap in these categories as some schools serve both third grade students and eighth grade students, some serve eighth and tenth grade students, and some serve all three levels.

	ES Charter	ES Trad.	MS Charter	MS Trad.	HS Charter	HS* Trad.		ES Charter	ES Trad.	MS Charter	MS Trad.	HS Charter	HS* Trad.
<b>White</b>							<b>Hispanic</b>						
Dissimilarity with Blacks	73.7	81.4	78.4	77.0	74.3	68.6	Dissimilarity with Whites	66.4	66.0	70.5	63.9	68.4	61.0
Dissimilarity with Hispanics	66.4	66.0	70.5	63.9	68.4	61.0	Dissimilarity with Blacks	49.2	56.2	47.7	53.5	45.3	42.1
Dissimilarity with Asians	47.3	57.8	42.0	49.2	37.4	43.4	Dissimilarity with Asians	58.7	60.0	63.4	59.6	60.8	56.7
Dissimilarity with Others	58.1	51.0	62.2	53.6	62.4	49.3	Dissimilarity with Others	42.5	53.0	49.9	53.6	45.0	46.7
The average White is in a space with							The average Hispanic is in a space with						
a % White of	26.4	46.7	24.9	41.8	22.0	33.2	a % White of	3.5	11.0	3.4	10.6	2.5	9.2
a % Black of	31.9	7.5	29.6	10.9	30.1	14.8	a % Black of	42.8	17.2	42.6	20.7	41.8	24.6
a % Hispanic of	31.7	25.6	34.8	26.7	37.7	27.4	a % Hispanic of	49.6	57.7	50.7	56.6	52.8	53.1
a % Asian of	7.1	17.7	7.7	19.0	7.4	22.3	a % Asian of	2.7	12.7	2.2	11.1	1.5	11.6
a % Other of	2.9	2.5	3.1	1.7	2.9	2.2	a % Other of	1.5	1.4	1.1	1.1	1.3	1.6
Percent White	3.7	17.5	3.4	16.0	2.6	13.2	Percent Hispanic	33.5	40.7	34.3	40.2	38.9	39.5
<b>Black</b>							<b>Asian</b>						
Dissimilarity with Whites	73.7	81.4	78.4	77.0	74.3	68.6	Dissimilarity with Whites	47.3	57.8	42.0	49.2	37.4	43.4
Dissimilarity with Hispanics	49.2	56.2	47.7	53.5	45.3	42.1	Dissimilarity with Blacks	60.8	79.4	66.3	73.0	61.0	65.1
Dissimilarity with Asians	60.8	79.4	66.3	73.0	61.0	65.1	Dissimilarity with Hispanics	58.7	60.0	63.4	59.6	60.8	56.7
Dissimilarity with Others	31.8	58.1	32.6	50.3	35.2	45.3	Dissimilarity with Others	52.8	56.2	57.8	52.2	50.3	44.3
The average Black is in a space with							The average Asian is in a space with						
a % White of	2.0	6.0	1.7	6.4	1.4	6.8	a % White of	11.0	17.3	13.2	20.0	12.9	17.8
a % Black of	70.4	53.9	70.7	54.3	66.7	48.0	a % Black of	39.2	7.9	37.4	12.6	37.2	16.5
a % Hispanic of	24.4	31.8	24.8	30.7	29.3	33.8	a % Hispanic of	37.3	28.9	37.5	29.4	39.9	27.7
a % Asian of	1.6	6.4	1.3	7.1	1.0	9.5	a % Asian of	10.5	43.8	10.2	36.3	7.9	35.5
a % Other of	1.6	1.9	1.5	1.6	1.5	1.8	a % Other of	2.0	2.1	1.7	1.7	2.2	2.5
Percent Black	58.7	22.0	58.9	27.1	55.5	28.8	Percent Asian	2.4	17.9	2.0	15.2	1.5	16.6

\*Traditional high schools include all public schools with the exception of charters, district 75 schools, and district 79 alternative high schools.

Table 12: Measures of Segregation Across School Level

entirely as students progress through school, helps explain some portion of the changes in dissimilarity.

Another notable trend made visible in Table 12 is that black-white, Hispanic-white, Asian-black, and Asian-Hispanic dissimilarity in charter schools is highest in middle school and lowest in elementary school. On the other hand, black-Hispanic and Asian-white dissimilarity in charter schools decreases from elementary to middle to high schools in the same manner as the trend for all groups in traditional public schools. Given the low proportions of Asian and white student in charter schools at all grade levels, none of these trends in dissimilarity have much meaning. However, it is worth noting that the clear downward trend in dissimilarity for traditional public schools as school level increases does not hold true for charter schools.

### **The Effect of Integration/Segregation on Educational Outcomes**

The preceding sections illuminate the breadth and depth of New York City's immense segregation problem across all levels of geography in both schools and neighborhoods. While these data on dissimilarity, exposure, isolation, diversity, and entropy help explain where the problem of segregation is greatest and what avenues may direct the city's schools and neighborhoods towards a more integrated future, they have yet to provide insight into the immediate or lasting effects of school and neighborhood segregation. While an earlier chapter presented an analysis of the extensive and growing body of literature on the costs and benefits of both integration and segregation, it is important to pause and consider the actual effects of segregation on New York City's students given the immense amount of data compiled here. Before offering specific solutions to New

York City's segregation problem, it is first necessary to understand exactly why New York City should try to resolve this problem.

This section presents a number of regression models that analyze the relationships between educational outcomes and levels of segregation and integration. While the analysis that follows uses reliable figures and appropriate statistical tools, it is important to pause to recognize the limitations of the methods before discussing the results. Typically, a conversation about limitations is left until after presenting the results of a study; however, this practice seems backwards and potentially dangerous given our society's growing tendency to blindly worship numbers and ignore the humanity and structures that the numerical figures represent.

In the analysis that follows, two different dependent variables are used—the percent of third grade students who achieve proficiency on state math exams and the percent of third grade students who achieve proficiency on state English language arts exams. There are undeniable limitations to these variables. First, the designation of what constitutes “proficiency” is a construct that is, to some degree, arbitrary. Most significantly, standardized tests have extreme limitations—they have a limited scope; they are often culturally biased; they are as much a measure of one's ability to take a test as they are a measure of knowledge; their results are deeply influenced by the degree to which someone directly prepares to take the exam; and their results are responsive to the conditions in which they were administered (i.e. physical conditions of the testing facility, how well-rested test-takers are, a test-taker's access to a good diet prior to the exam, and a test-taker's ability to focus on the exam and not let one's mind wander to

other events occurring in his or her life). With a keen awareness of these limitations, the

<b>Percent Proficient on ELA (5-yr averages)</b>	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>
Diversity Score (Asian, Black, Hispanic, White)	30.452*** (3.33)	16.343*** (2.35)	15.446*** (2.07)			
Diversity Score (Black/Hispanic and Asian/White)				29.652*** (1.78)	18.601*** (1.33)	15.081*** (1.28)
Percent of Students Qualifying for Free or Reduced-Price Lunch		-0.492*** (0.02)	-0.458*** (0.02)		-0.439*** (0.02)	-0.411*** (0.02)
Percent of Students Classified as English Language Learners			0.049 (0.04)			-0.032 (0.04)
Percent of Students with Individualized Education Program			-0.888*** (0.07)			-0.725*** (0.07)
Constant	19.249*** (2.08)	67.908*** (2.37)	82.203*** (2.39)	21.474*** (1.11)	63.316*** (1.86)	77.432*** (2.18)
N	593	593	593	593	593	593
R-Squared	0.124	0.588	0.682	0.320	0.666	0.718
AIC	4954.7	4509.5	4360.3	4804.8	4385.6	4288.2

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

regression models that follow still offer deep insight into the importance of integration.

*Table 13: The Effect of School-Level Diversity on English Language Arts Proficiency*

Table 13 presents six regression models used to predict the five-year average percent of third grade New York City students at a zoned elementary schools that score at proficient levels on the state's English language arts exam. Models 1 through 3 use the diversity score calculated for Asian, black, Hispanic and white students as the independent variable, and models 4 through 6 use the diversity score calculated for the Asian and white populations combined and the black and Hispanic populations combined as the independent variable. As noted earlier, the diversity score measures the presence of a diverse population in a space and ranges from zero to the natural log of the number of groups being analyzed. For models 1 through 3, diversity scores can range from 0

through the natural log of 4 (1.3863). For models 4 through 6, diversity scores can range from 0 through the natural log of 2 (.6931). Models 1 and 4 have no control variables; models 2 and 5 control for the percent of students at a school who qualify for free or reduced-price lunch; and models 3 and 6 control for the percent of students at a school who qualify for free or reduced-price lunch, the percent of students at a school who are classified as English language learners, and the percent of students at a school who have an individualized education program.

Model 1 shows that the four-way diversity score for the Asian, black, Hispanic, and white populations significantly predicted the percent of third grade students who are proficient on the ELA exam  $\beta=30.452$ ,  $t(592)=9.15$ ,  $p<.001$ . In other words, as school-level diversity increases, the percent of students in a school who achieve at a proficient level on the ELA exam increases significantly. While the diversity score is a complex measure that does not lead to easy interpretation, one example of a .1 increase in the diversity score is the equivalent of moving from a school where 97% of the student population is from one racial/ethnic group to a school where 93% of the student population is from one racial/ethnic group. According to the correlation coefficient in model 1, an increase of .1 in the diversity score corresponds with an additional 3% of students achieving proficiency on the ELA exam. As the overall model shows, diversity explains a significant proportion of variation in the percent of students proficient on the ELA exam at a school  $R^2=0.124$ ,  $F(1,591)=83.77$ ,  $p<.001$ . In other words, 12.4% of variation in ELA proficiency is explained by the diversity score.

Models 2 and 3 in Table 13 also show that diversity significantly predicts ELA proficiency. When controlling for the percent of students who qualify for free or reduced-

price lunch, a proxy for poverty, the correlation coefficient for the diversity score drops but remains significant. This indicates that even when controlling for poverty, diversity continues to predict ELA proficiency. Model 2 shows that diversity and the percent of students qualifying for free or reduced-price lunch explains a significant proportion of variation in the percent of students proficient on the ELA exam at a school  $R^2=0.588$ ,  $F(2,590)=420.96$ ,  $p<.001$ . In other words, 58.8% of variation in ELA proficiency is explained by the diversity score and the percent of students who qualify for free or reduced-price lunch. Model 3 does an even better job of explaining variation in the percent of students who achieve proficiency on the ELA exam at a school  $R^2=0.682$ ,  $F(4,588)=314.94$ ,  $p<.001$ . In other words, 68.2% of variation in ELA proficiency is explained by the diversity score, the percent of students who qualify for free or reduced-price lunch, the percent of students classified English language learners, and the percent of students with an individualized education plan.

Models 4, 5, and 6 in Table 13 parallel the findings from Models 1, 2, and 3. The difference between these two sets of models is that the diversity score in models 4, 5, and 6 compares the combined Asian and white population at schools to the combined black and Hispanic populations at schools. Given the persistent achievement gap between these two sets of racial/ethnic groups and the persistent segregation between these two sets of racial/ethnic groups, the fact that models 4, 5, and 6 do a better job of predicting variation in ELA proficiency is unsurprising. Model 6 does the best job of explaining variation in the percent of students who achieve proficiency on the ELA exam at a school  $R^2=0.718$ ,  $F(4,588)=374.68$ ,  $p<.001$ . This model explains nearly 72% of variation in ELA proficiency with the diversity score, the percent of students who qualify for free or



reduced-price lunch, the percent of students classified English language learners, and the percent of students with an individualized education plan.

Table 14 is organized in the same way as Table 13 and uses identical independent variables and control variables to predict the five-year average percent of third grade students who achieve proficiency on the state math exam. In comparison to the models that predict proficiency on the ELA exam, the correlation coefficients for the diversity score variables are a bit higher for the models used to predict proficiency on the Math exam than on the ELA exam. However, the overall models do a marginally poorer job of predicting variation in Math proficiency levels. Model 6 does the best job of explaining variation in the percent of students who achieve proficiency on the math exam at a school  $R^2=0.654$ ,  $F(4,588)=277.64$ ,  $p<.001$ . This model explains nearly 65% of variation in math proficiency, which is less than the 72% of variation in ELA proficiency explained by model 6 in Table 13.

Percent Proficient on Math (5-yr averages)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Diversity Score (Asian, Black, Hispanic, White)	33.836*** (3.79)	19.542*** (2.97)	19.370*** (2.59)			
Diversity Score (Black/Hispanic and Asian/White)				34.215*** (2.00)	23.394*** (1.67)	18.199*** (1.61)
Percent of Students Qualifying for Free or Reduced-Price Lunch		-0.498*** (0.02)	-0.512*** (0.02)		-0.429*** (0.02)	-0.456*** (0.02)
Percent of Students Classified as English Language Learners			0.296*** (0.05)			0.198*** (0.05)
Percent of Students with Individualized Education Program			-0.942*** (0.09)			-0.746*** (0.09)
Constant	24.379*** (2.37)	73.678*** (2.99)	88.903*** (2.98)	26.171*** (1.25)	67.144*** (2.35)	83.712*** (2.75)
N	593	593	593	593	593	593
R-Squared	0.119	0.489	0.615	0.331	0.588	0.654
AIC	5108.0	4787.3	4622.7	4945.2	4659.1	4560.1

\*  $p<0.05$ , \*\*  $p<0.01$ , \*\*\*  $p<0.001$

Table 14: The Effect of School-Level Diversity on Math Proficiency

Table 15 and Table 16 mirror Table 13 and Table 14 in predicting English language arts proficiency and math proficiency with a collection of regression models. Again, models 1, 2, and 3 use a four-way diversity score accounting for Asian, black, Hispanic, and white demographic subgroups while models 4, 5, 6, and use a two-way diversity score accounting for the Asian and white populations combined and the black and Hispanic populations combined. Also, the six models use the same sets of control variables. The distinguishing feature of Table 15 and Table 16 is that the diversity scores use neighborhood-level population counts for each racial/ethnic group instead of school-level counts. Given the extensive research on neighborhood effects, discussed in an earlier chapter, it is worth considering neighborhood-level diversity for a moment. The only neighborhood-level population diversity model in these two tables that does not significantly predict variation in proficiency is model 1 of the English language arts analysis. As model 4 in Table 16 shows, the two-way diversity score for the Asian and white combined populations and the black and Hispanic combined populations in elementary school zones significantly predicts the percent of third grade students who are proficient on the math exam  $\beta=19.575$ ,  $t(588)=7.13$ ,  $p<.001$ . In other words, as neighborhood-level diversity increases, the percent of students in a school who achieve at a proficient level on the math exam increases significantly. As the over model shows, neighborhood-level diversity explains a significant proportion of variation in the percent of students proficient on the math exam at a school  $R^2=0.080$ ,  $F(1,588)=50.89$ ,  $p<.001$ . In other words, 8.0% of variation in math proficiency is explained by the diversity score.

Percent Proficient on ELA (5-yr averages)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Diversity Score (Asian, Black, Hispanic, White)	5.198 (3.96)	15.670*** (2.61)	12.947*** (2.33)			
Diversity Score (Black/Hispanic and White)				15.234*** (2.44)	13.252*** (1.60)	10.583*** (1.47)
Percent of Students Qualifying for Free or Reduced-Price Lunch		-0.539*** (0.02)	-0.493*** (0.02)		-0.516 (0.02)	-0.470*** (0.02)
Percent of Students Classified as English Language Learners			0.011 (0.04)			-0.016 (0.04)
Percent of Students with Individualized Education Program			-0.895*** (0.07)			-0.863*** (0.07)
Constant	34.086*** (2.60)	71.574*** (2.15)	86.720*** (2.26)	28.567*** (1.56)	71.940*** (1.85)	86.695*** (2.06)
N	589	589	589	589	589	589
R-Squared	0.003	0.579	0.669	.062	.600	.679
AIC	4998.2	4492.9	4355.6	4962.2	4462.9	4335.7

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

*Table 15: The Effect of Neighborhood-Level Diversity on English Language Arts Proficiency*

Percent Proficient on Math (5-yr averages)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Diversity Score (Asian, Black, Hispanic, White)	11.659** (4.48)	22.490*** (3.25)	18.157*** (2.89)			
Diversity Score (Black/Hispanic and White)				19.575*** (2.74)	17.558*** (2.00)	13.072*** (1.83)
Percent of Students Qualifying for Free or Reduced-Price Lunch		-0.557*** (0.02)	-0.555*** (0.02)		-0.525*** (0.02)	-0.525*** (0.02)
Percent of Students Classified as English Language Learners			0.242*** (0.05)			0.211*** (0.05)
Percent of Students with Individualized Education Program			-0.951*** (0.09)			-0.916*** (0.09)
Constant	37.115*** (2.94)	75.890*** (2.68)	93.405*** (2.80)	33.173*** (1.76)	77.322*** (2.32)	94.636*** (2.57)
N	589	589	589	589	589	589
R-Squared	0.011	0.491	0.605	0.080	0.513	0.612
AIC	5141.1	4752.6	4607.2	5098.9	4726.2	4596.6

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

*Table 16: The Effect of Neighborhood-Level Diversity on Math Proficiency*

While this is much lower than the 33.1% of variation in math proficiency explained by the school-level two-way diversity score in model 4 of Table 14, it is still notable.

Despite the obvious correlation between neighborhood-level and school-level diversity (given that the student population is nested within the neighborhood population), prior scholarship on neighborhood-level diversity and neighborhood effects along with the data in Table 15 and Table 16 indicate that a deeper analysis of social and demographic processes at the neighborhood- and school-levels is in order. Before turning to a study of the relationships between neighborhoods and schools, a final look at diversity and educational outcomes must be explored.

Table 17 and Table 18 present a collection of regression models that all follow the same basic structure used for model 6 in the four preceding tables. Each of the models in Table 17 and Table 18 use the two-way school-level Asian/white and black/Hispanic diversity scores as an independent variable and the percent of students qualifying for free or reduced-price lunch, the percent of students classified as English language learners, and the percent of students with individualized education programs as control variables. Unlike prior analyses, Table 17 and Table 18 predict the percent of separate racial/ethnic subgroups achieving proficiency in English language arts and math. As Table 17 shows, the diversity score does not significantly predict the percent of Asian students or white students who achieve proficiency on the English language arts exam. However, the diversity score does significantly predict the percent of black students and Hispanic students who achieve proficiency on the English language arts exam. These models indicate that diversity has no effect on English language arts proficiency for Asian and white students and has a positive effect on English language arts proficiency for black

<b>Percent Proficient ELA (5-yr averages)</b>	<b>All Students</b>	<b>Asian Students</b>	<b>Black Students</b>	<b>Hispanic Students</b>	<b>White Students</b>
Diversity Score (Black/Hispanic and Asian/White)	15.081*** (1.281)	-6.555 (3.450)	7.055*** (1.749)	9.229*** (1.390)	5.142 (4.316)
Percent of Students Qualifying for Free or Reduced-Price Lunch	-0.411*** (0.019)	-0.315*** (0.029)	-0.173*** (0.036)	-0.253*** (0.021)	-0.286*** (0.037)
Percent of Students Classified as English Language Learners	-0.032 (0.038)	-0.237*** (0.059)	-0.165* (0.061)	-0.102* (0.041)	-0.178 (0.093)
Percent of Students with Individualized Education Program	-0.725*** (0.070)	-0.409** (0.147)	-0.678*** (0.085)	-0.439*** (0.079)	-0.737*** (0.144)
Constant	77.432*** (2.184)	97.925*** (3.621)	56.011*** (3.737)	56.974*** (2.560)	85.269*** (3.999)
N	593	220	343	501	218
R-Squared	0.718	0.6222	0.395	0.497	0.523

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

*Table 17: The Effect of School-Level Diversity on Racial/Ethnic Subgroup Proficiency of English Language Arts*

<b>Percent Proficient Math (5-yr averages)</b>	<b>All Students</b>	<b>Asian Students</b>	<b>Black Students</b>	<b>Hispanic Students</b>	<b>White Students</b>
Diversity Score (Black/Hispanic and Asian/White)	18.199*** (1.611)	-11.236** (3.72)	6.827*** (2.104)	9.865*** (1.698)	-2.348 (4.454)
Percent of Students Qualifying for Free or Reduced-Price Lunch	-0.456*** (0.024)	-0.301*** (0.031)	-0.207*** (0.043)	-0.265*** (0.026)	-0.243*** (0.038)
Percent of Students Classified as English Language Learners	0.198*** (0.047)	0.016 (0.065)	-0.093 (0.73)	-0.032 (0.050)	-0.121 (0.094)
Percent of Students with Individualized Education Program	-0.746*** (0.088)	-0.337* (0.162)	-0.629*** (0.102)	-0.405*** (0.096)	-0.779*** (0.150)
Constant	83.712*** (2.748)	108.860*** (3.974)	60.824*** (4.500)	62.603*** (3.123)	96.915*** (4.134)
N	593	223	343	500	219
R-Squared	0.654	0.470	0.307	0.398	0.448

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

*Table 18: The Effect of School-Level Diversity on Racial/Ethnic Subgroup Proficiency of Math*

and Hispanic students.

As Table 18 shows, the diversity score does not significantly predict the percent of white students who achieve proficiency on the math exam. However, the diversity score does significantly predict the percent of Asian, black, and Hispanic students who achieve proficiency on the math exam. In the case of black and Hispanic students, an increase in diversity predicts an increase in proficiency. The only time that a model indicates that there is a negative correlation between the diversity score and proficiency is for Asian students on the state math exam. The two-way diversity score for the Asian and white combined student populations and the black and Hispanic combined student populations significantly predicts the percent of third grade Asian students who are proficient on the math exam  $\beta = -11.236$ ,  $t(223) = -3.01$ ,  $p < .01$ . This indicates that in schools with higher proportions of black and Hispanic students, Asian students do less well on the state math exam. While more research is needed to understand the negative relationship between diversity and math proficiency levels for Asian students in the third grade, it is important to note that of the thirty-two models analyzed in this section, this is the only model where a significant negative relationship exists; in all other cases, diversity either has a null effect on proficiency levels or a significant and positive relationship with proficiency levels.

## Conclusion

The data presented throughout this chapter demonstrate that school boundaries are neither the culprit of school segregation nor the solution to school integration. Extreme levels of school segregation persist in New York City because there is no coordinated and

concerted effort to rectify the problem, not because school boundaries inherently produce the levels of segregation that currently exist. Along with highlighting the key findings from this chapter on the relationship between boundaries and school segregation, this conclusion provides a number of suggestions for the city and state governments as well as schools, parents, and other concerned individuals hoping to resolve the scourge of school segregation.

There is no hiding from the fact that New York City's schools are deeply segregated. The data and analysis presented throughout this chapter consider segregation from a wide range of angles and consistently find that segregation rather than integration is the norm in the city's schools. As discussed earlier, some education reformers have suggested that school choice could be a tool for integrating schools. While this assertion may be correct, the findings in this chapter indicate that school choice does not automatically lead to school desegregation:

- *Charter schools* in New York City currently have a segregating effect on student populations.
- *Open enrollment districts* that provide district-wide choice have neither a clearly positive nor clearly negative effect on school integration.
- *Gifted and Talented programs* disproportionately serve white and Asian students and exclude black and Hispanic students.
- *Lottery schools* appear to have an integrating effect on student populations relative to other school models.
- *Dual-language programs* disproportionately serve Hispanic students and currently have a segregating effect on student populations.
- *Unzoned schools* in middle school and high school appear to increase levels of integration, though comparing across school-levels is challenging given the shift in student racial/ethnic demographics moving up in grades.

Overall, there is no clear relationship between school choice and levels of school segregation. However, there are lessons to be drawn from the ways in which different forms of school choice appear to correlate with variations in levels of integration and

segregation. Some of the policy suggestions at the end of this chapter draw upon lessons from these correlations.

Another important finding worth highlighting is that New York City's schools are more segregated than New York City's neighborhoods. While differences in the school-age population and the total population account for some of this variation, school choice within the public system and the decision to opt-out of public schools also contribute to the higher level of school segregation than neighborhood segregation. As a result, policies that keep students in their neighborhoods and decrease the number of families that opt out of the public education system entirely may aid in school integration efforts.

While schools are more segregated than neighborhoods, the high-level of neighborhood segregation does present challenges to integrating schools. In order to bring about a dramatic change in school-level diversity within the current system of residential segregation, many students would need to travel significant distances away from their homes to integrate schools. This presents a burden to children and families that may be too onerous and should not be required. Therefore, the city and state must pursue policies to integrate the city's residential areas in an effort to help work towards the goal of school integration. In order to truly solve the problem of segregation, all of the institutions in our society must aim to desegregate rather than placing the entire burden to do so on our system of public schools.

Perhaps the most important finding from this chapter can be drawn from the series of regression models showing that in almost all cases, school diversity has either a positive correlation with achievement on standardized tests for New York City elementary school students or no correlation at all. These findings are consistent with the



wider scholarly literature indicating that school diversity has a net positive effect on a range of educational and social processes, including, but certainly not limited to, achievement on standardized tests. There are countless ways to draw upon these findings to construct policies and gain public support for school desegregation efforts. Many of the suggestions that follow are built on the empirical evidence showing the positive effects of diversity on achievement.

If the New York City Department of Education wanted to ensure that every elementary school had a perfectly proportional representation of each measured racial/ethnic group, 225,571 students (40.0%) would need to move to a different school. While achieving this level of diversity seems impossible, and is certainly not necessary to unlock the benefits of school integration, the numbers reveal just how far away the school system is from achieving perfect integration.

Perhaps a more reasonable goal is to ensure that every school has at least ten-percent of its overall population from the four primary racial/ethnic groups—Asian, black, Hispanic, and white—that are measured by the New York City Department of Education. In order to attain this level of school diversity, 69,479 students (12.3%) would need to move to a different school. 31.0% of white students would need to move schools, 29.3% of Asian student would need to move schools, 10.3% of black students would need to move schools, and 0.8% of Hispanic students would need to move schools. While achieving this goal would certainly be a challenge, it would prove significantly more manageable than aiming for perfect integration, and it would likely unlock the benefits of integration as effectively.

It is clear that people in our society and the structures that people have created throughout history overwhelmingly lead to segregation. Interventions are needed to effectively integrate institutions and attain the positive results of diversity. Altering where 40.0% of students go to school to achieve perfect proportionality, or even just 12.3% of students to construct multiracial student bodies, is an enormous undertaking that could not possibly happen without intervention. Before delving into a range of suggested actions that could lead to a less segregated school system, it is important to note that bringing about such an enormous change would take time, strong leadership, a coordinated effort across institutions, and both formal policy changes and informal efforts led by various groups and individuals.

Perhaps the first step towards solving New York City's school segregation crisis is to increase the intensity of the public discourse on the subject. Without public support for systemic change, reform is unlikely to proceed with much success. There are a number of strategies for educating the public about New York City's school segregation crisis as well as the benefits of school diversity. First, education scholars need to analyze the problem from all angles and collaborate with the media and government officials to find ways to communicate their findings with the public and with policy makers. One way to increase awareness of the severity of the school segregation crisis is by creating a school diversity score that is publicized through the city's school quality reports, the state's school report cards, and independent websites that rate schools using various measures. Ensuring that the public is aware of both the level of school segregation and the benefits of school integration will build some of the public awareness needed to resolve the problem.

Another preliminary action that could clear a pathway for integrating New York City's schools is to celebrate school diversity where it exists. Private organizations and public institutions should support efforts to diversify schools through grants and high-profile awards that acknowledge the schools that not only serve diverse student bodies but also build school structures that prevent within-school segregation. Competition for such awards could incentivize efforts to diversify and inspire individual schools and the public as a whole to push for programs and policies that lead to integration.

The remaining recommendations all involve either legal challenges or policy changes. Without new policies and dramatic shifts in where people choose to live and send their children to school, systemic change is impossible. One of the most immediate policies that must be implemented, either through the courts or the legislature, is to make apartheid schools illegal. Apartheid schools serving populations that are 99% or more nonwhite are a result of this country's long history of discrimination and harken back to the days when separate but equal was the law of the land. Maintaining such a system is detrimental to students and shameful to our society. Outlawing apartheid schools would have an immediate effect on sixty-two of the 908 elementary schools in New York City.

In addition to outlawing apartheid schools, a set of policies promoting the expansion of multiracial schools should be adopted. New York City could build upon its plan to increase dual-language schools and develop policies that require all dual-language schools to serve a multiracial population. Given the clear benefits of gaining fluency in multiple languages, the city should be able to attract a multiracial population to dual-language schools. Along similar lines, the city should restructure its gifted and talented program to lessen the effects of socioeconomic status and race on admissions. Similarly,

the New York City Department of Education should ensure that schools offering specialized programs, operating like magnet schools, and admitting students through a lottery system achieve a baseline level of diversity. Insofar as is practicable, the New York City Department of Education should move these dual-language schools, gifted and talented programs, and lottery schools to areas of the city that are plagued by intense segregation. Similar approaches of positioning attractive educational programs in traditionally underserved areas have proven to be successful tools for desegregating schools in Wake County, North Carolina and Hartford, Connecticut (Grant, 2009; Orfield & Ee, 2015).

Along with implementing policies that attract multiracial populations to areas that are intensely segregated, a series of policies are needed to incentive travel from areas that are intensely segregated to schools that are neither multiracial nor segregated as well as to schools that are already multiracial. Just as the former No Child Left Behind legislation provided a mechanism for students zoned to schools classified as “failing” to enroll in schools beyond their districts, New York could develop policies allowing children who live in segregated areas to travel beyond their school zones to attend other schools. Along with ensuring that schools in desegregated areas maintain open seats for unzoned children, New York could provide families with travel vouchers to ease the burden of traveling beyond neighborhood boundaries to attend schools.

Finally, efforts to desegregate neighborhoods must move forward. Housing programs and zoning policies should specifically work to integrate New York City’s neighborhoods. Until desegregation happens at the neighborhood-level, the only way to integrate schools is through programs that weaken the bond between neighborhood and

school. As data and analysis in the next chapter will show, strong school-neighborhood bonds are a resource to communities that should be nurtured rather than blindly dissolved.

## Chapter Five –Collective Efficacy and the Utility of School Zone Boundaries

The school-neighborhood bond is woven into the fabric of the United States’ public education system. It did not grow out of a cognizant desire to unite school and community; rather it developed as a seemingly natural connection to simplify management and minimize travel between home and school. Throughout much of the history of public schooling, there was no need to question the utility of the neighborhood school—there was simply no other public option.<sup>22</sup>

Following the Supreme Court’s 1954 decision in *Brown v. Board of Education*, a series of subsequent court cases and policies led to a reconsideration of school assignment plans. Initially, the move to dissolve the school-neighborhood bond under certain circumstances grew from the constitutional requirement for desegregation. During the past twenty-five years, an increasingly powerful education reform movement, rallying around the concept of school choice, has taken the lead in promoting policies that often sever the school-neighborhood bond.

Today, education reformers, including those who seek to integrate schools, often advocate for policies that dismantle school attendance zones. Phrases such as “your zip code should not determine your success,” are frequently used to frame the argument for school choice (Davis, 2016). The basic form of the argument contends that families with economic means have the opportunity to choose a school for their children by purchasing a home in a district with “good” schools; therefore, families without the economic means

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<sup>22</sup> One notable exception is that Jim Crow laws often required black children to travel beyond their neighborhood to attend segregated schools.

to make this kind of choice should be able to cross attendance zone boundaries to send their children to “good” schools as well. Such apparent logic is compelling, but it is flawed.

First, the argument sets aside the volumes of research demonstrating that out-of-school factors such as poverty, the educational attainment of parents, and access to healthy food and living spaces have more of an effect on the educational achievement of children than variables that differentiate schools (Sadovnik et al., 2013). Second, the argument assumes that all parents have access to information that allows them to identify “good” vs. “bad” schools and that “good” schools will have the capacity and desire to serve all children. Research has shown that not only is there unequal access to information about school quality, but that perceptions of “good” vs. “bad” schools are often flawed (Lareau, 2014).

Most problematically, the argument to dismantle school attendance zones and the system of neighborhood schools fails to consider the ways in which the basic structures of these traditional public schools support student growth and community well-being. Chapter Two reviewed existing literature demonstrating the theoretical significance and utility of the school-neighborhood bond. As discussed in this earlier chapter, school boundaries have the potential to unite community members in support of the educational advancement of their youth. Furthermore, schools have the ability to build community and connect neighbors through a range of events and services. While the theoretical utility of the school-neighborhood bond is obvious, prior research has not tested the empirical significance of the relationship between neighborhoods and schools. Is there

evidence that there is value in the traditional neighborhood school and its inherent bond to its surrounding community? The pages that follow seek to answer this question.

### **The Prevalence of School Choice in New York City**

Before investigating the utility of the school-neighborhood bond, it is first necessary to understand the degree to which the school-neighborhood bond persists in the study site—New York City.<sup>23</sup> Private schools are essential to the conversation about the school-neighborhood bond. Because there is no inherent relationship between private schools and a geographic area, the system of private schooling has always disrupted the school-neighborhood bond found in the traditional public school setting. A central feature of private schooling is a private concern for the personal advancement of the individuals attending these schools. Public schools typically display a greater level of interest in the advancement of all pupils for their common good as well as for society's benefit as a whole.<sup>24</sup> Given that public schools are funded by tax dollars, citizens have a deeper interest in ensuring that these schools educate children in a way that advances society as a whole. When considering the utility of the school-neighborhood bond, it is necessary to understand patterns of private schooling that disrupt the relationship between a traditional public school and the surrounding community.

As Figure 7 shows, 82% of New York City's elementary school population attends public schools while 18% of the population opts out of the public school system

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<sup>23</sup> Because there are no neighborhood schools at the secondary level in New York City, the analysis that follows excludes the high school population.

<sup>24</sup> While most private schools strive to prepare their students to contribute to society rather than simply advance individual interests, these institutions maintain admissions processes and tuition fees that inherently privatize and commoditize an individual's success.



entirely. Map 12 shows the distribution of the private school population for children in kindergarten through grade eight across New York City. Unsurprisingly, the largest private school populations tend to be concentrated in wealthier areas such as the Upper East Side of Manhattan and Riverdale in the Bronx.<sup>25</sup> While the size of a private school population in a given neighborhood does not necessarily have an effect on the bond between the neighborhood and a traditional public school, these figures offer necessary context for this study.

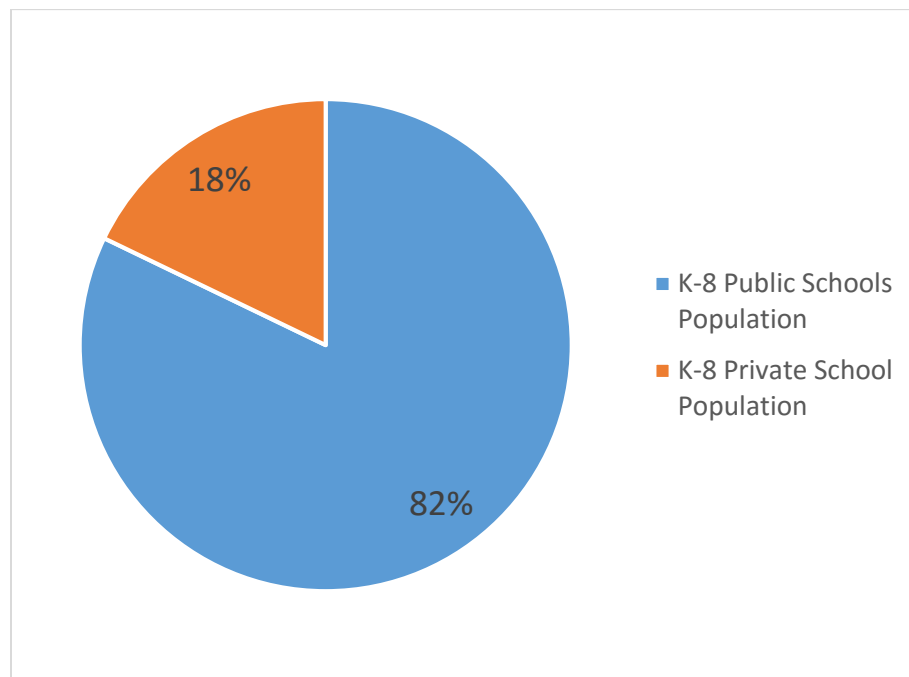
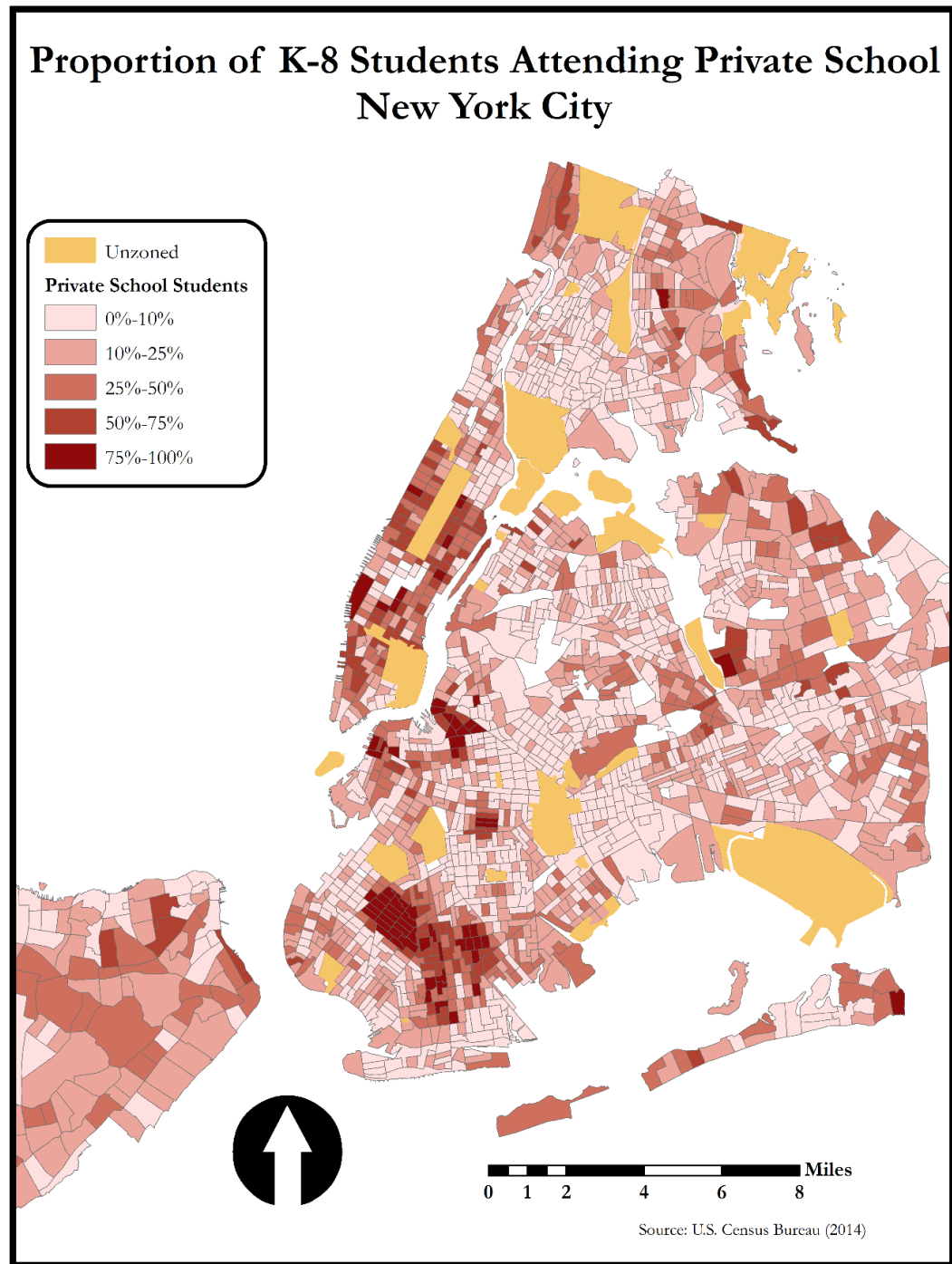


Figure 7: Private vs. Public School Enrollment, New York City 2014 (U.S. Census Bureau, 2015)

In addition to the children choosing private schools, a sizable portion of the student population that remains in the public education system attends public schools of

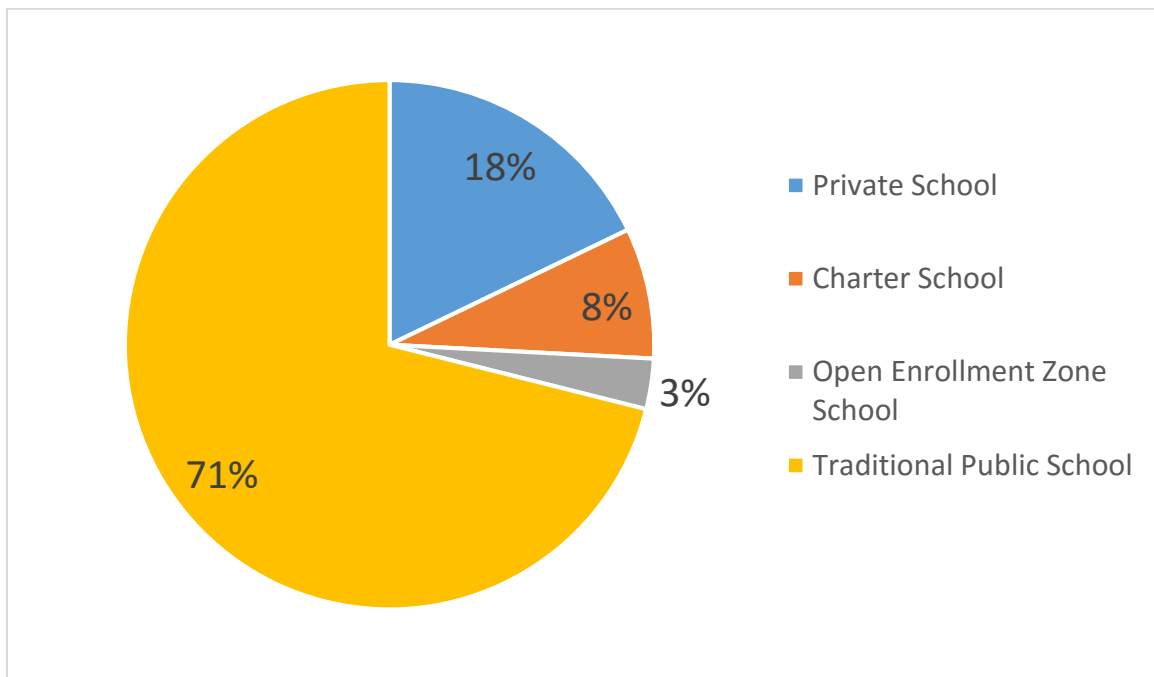
<sup>25</sup> One notable exception to this trend is that the Borough Park neighborhood in Brooklyn, which lacks the kind of wealth found in other areas with large private school populations, has one of the highest concentrations of students opting out of the public school system. Borough Park is home to a large Hasidic community, and many families choose to send their children to yeshivas instead of public schools (Gootman, 2006).



Map 12: K-8 Private School Population, 2014<sup>26</sup>

<sup>26</sup> This data is displayed using a *natural breaks* classification.

choice. In 2014-2015, 9.7% of New York City public school students in kindergarten through eighth grade attended charter schools. An additional 3.7% of students in kindergarten through grade eight attended school in an open enrollment district without neighborhood schools (New York City Department of Education, 2016b). While a small fraction of students attends dual-language programs, gifted and talented schools, and schools that use alternate admissions processes, private schools, charters, and open enrollment zones account for the most prevalent forms of school choice in New York City.



*Figure 8: Enrollment by School Type, New York City K-8 population (New York City Department of Education, 2016b; U.S. Census Bureau, 2015)*

As Figure 8 highlights, only 71% of New York City children in kindergarten through grade eight attended traditional public schools in 2014-2015. Given the fact that more than one-quarter of New York City's children in kindergarten through grade eight already attend schools of choice and that this number appears to be on the rise as a result

of the proliferation of school choice models, there is more of a need than ever to question what is potentially lost when the bond between neighborhoods and schools is severed.

### **Studying the School-Neighborhood Bond with Collective Efficacy**

The focus of this chapter, evaluating the school-neighborhood bond, builds on theories of social capital and collective efficacy. As discussed in Chapter Two, social capital theory and the concept of collective efficacy indicate that the degree to which individuals in a neighborhood share an interest in the well-being of their community, trust one another, and are willing to act on behalf of the common good affects social outcomes such as crime levels. Prior scholarship has not investigated the relationship between collective efficacy and educational outcomes, but theory strongly supports the view that high neighborhood collective efficacy would lead to greater educational achievement. This study seeks to understand the degree to which collective efficacy shapes educational outcomes in an effort to illuminate the utility of the school-neighborhood bond.

Measuring collective efficacy and analyzing its relationship with educational outcomes presents a number of distinct challenges. Existing scholarship provides no consensus on how to measure the social concept of collective efficacy. The most respected study of collective efficacy relies on a ten-item Likert scale survey administered across 343 neighborhoods in Chicago (Sampson et al., 1997). While the study's size and rigor provides compelling results, the research is not immune to the effects of social desirability bias.<sup>27</sup> In an attempt to avoid the effects of social desirability bias, this study uses two data sources that highlight the actions taken by individuals rather

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<sup>27</sup> A wide body of literature indicates that survey respondents tend to provide responses that conform to social expectations and potentially mask actual beliefs or activities (Phillips & Clancy, 1972).

than the hypothetical actions that survey respondents report in traditional studies of collective efficacy. Specifically, the study uses 311 call center data and voter turnout data.

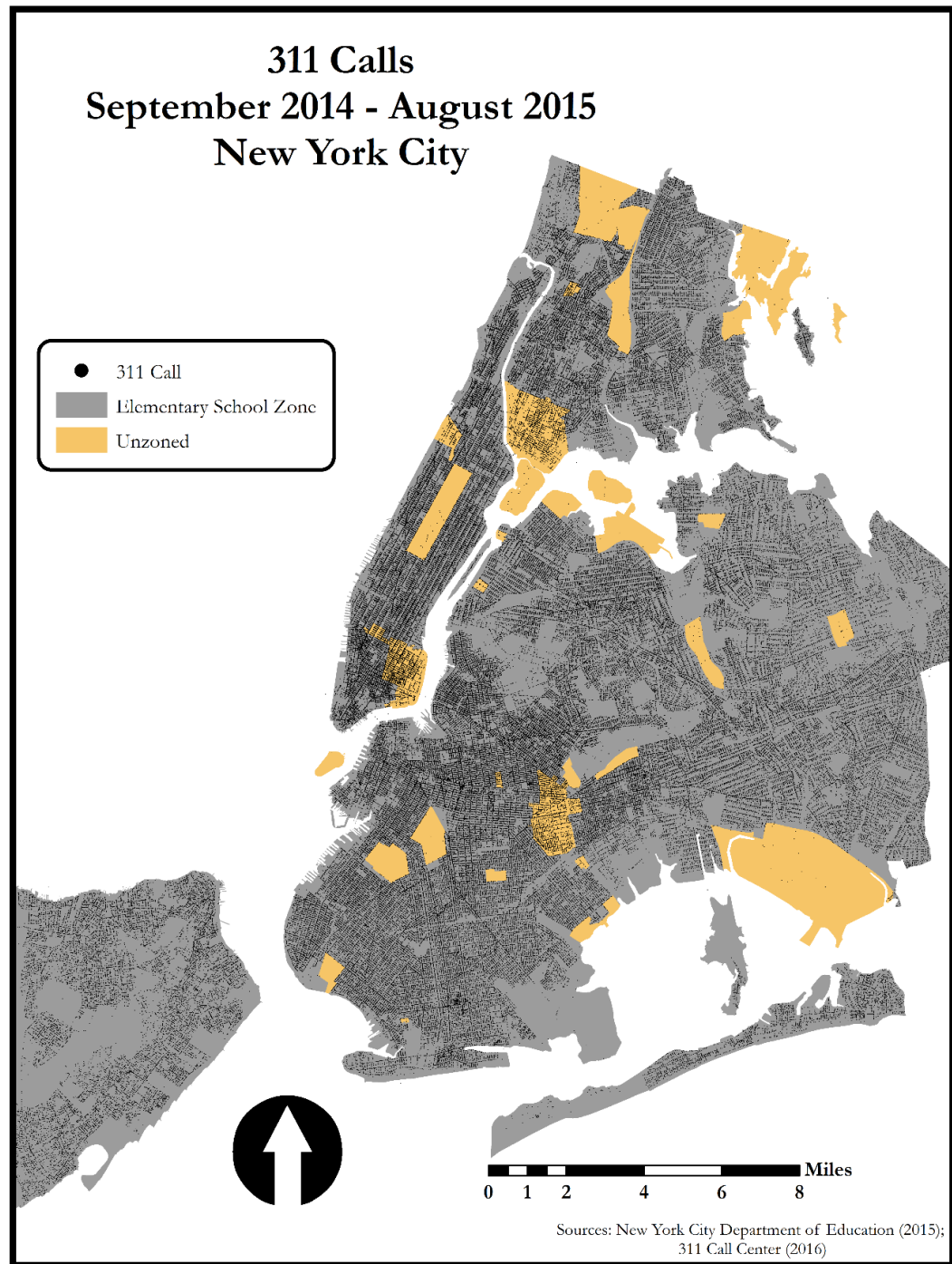
### *311 Call Center Data*

One of the primary measures of collective efficacy used in this study comes from New York City's 311 call center. New York City's 311 call center is in constant operation and currently fields close to two-million calls per month. While a majority of these calls are information requests about matters such as street-cleaning schedules and the status of parking tickets, a large number of calls relate to non-emergency issues that citizens would like resolved (NYC 311, 2016). When an individual calls 311 to raise an issue, the 311 operator records an array of data about the matter and transmits the information to the proper city agency to be resolved. Along with recording basic information about the nature of the concern that initiated the call, 311 also tracks the exact geographic origins of the call. As a result, it is possible to map these calls. Map 13 shows the distribution of 311 calls that were made from September 1, 2014 through August 31, 2015 (N=1,048,575).

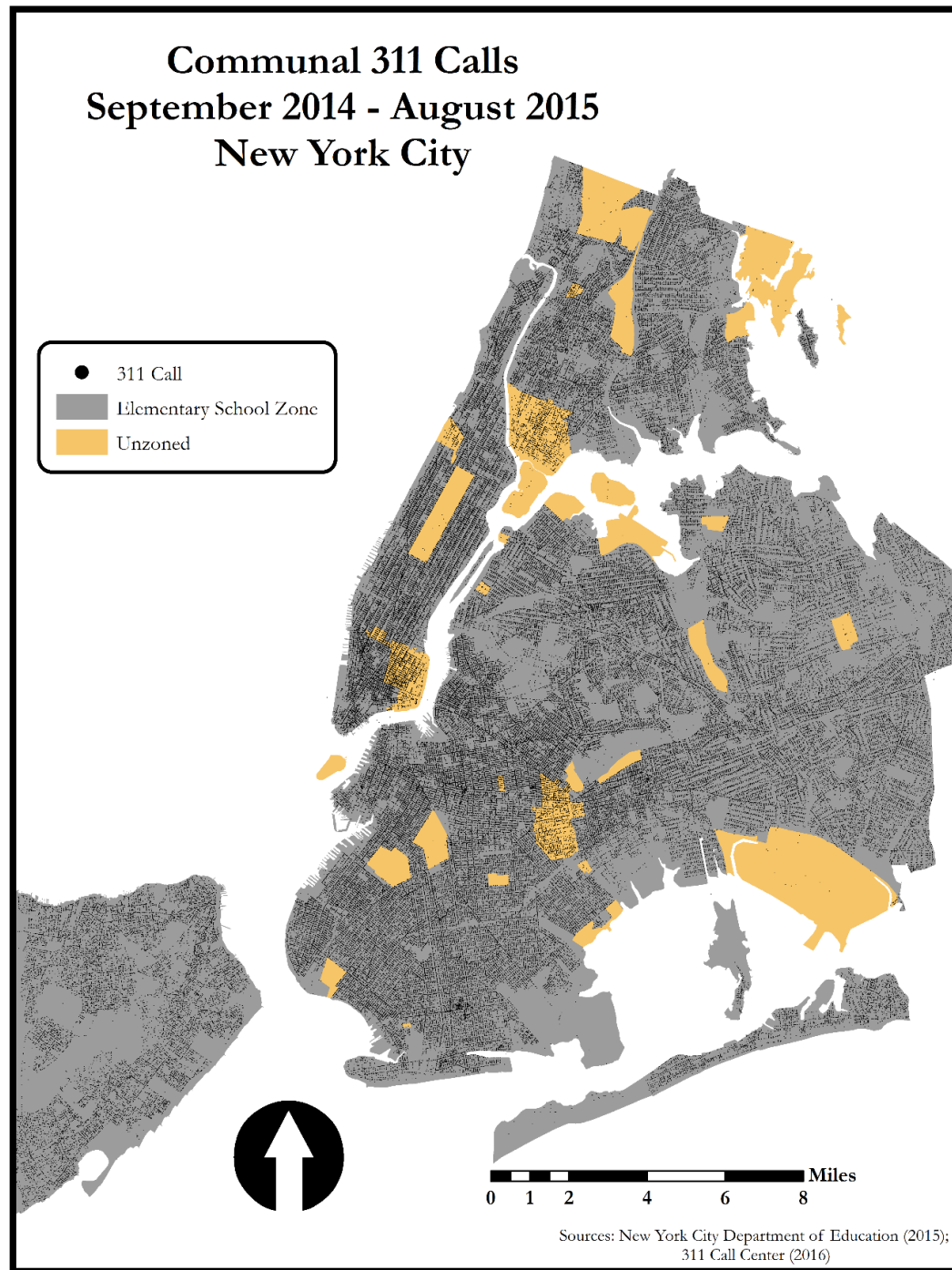
While some of the 311 calls shown on Map 13 relate to personal concerns (e.g. lack of heat in an apartment), others relate to more communal issues (e.g. a broken pedestrian crossing signal). This study uses the calls relating to communal concerns, shown on Map 14 (N=412,353), as an indicator of collective efficacy.<sup>28</sup> When people make the effort to contact 311 in an attempt to resolve communal matters, they are

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<sup>28</sup> Chapter Three discusses the methods used to distinguish 311 calls focused on a communal concern.

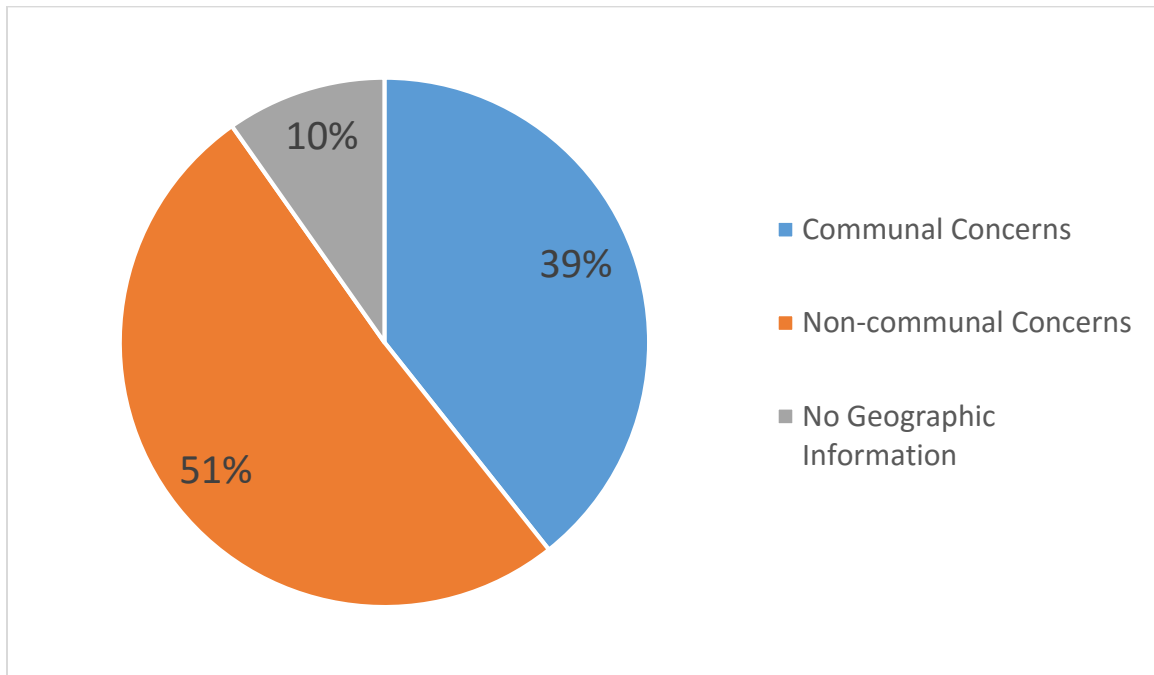


*Map 13: Locations of 311 Calls Made from September 2014 through August 2015*



*Map 14: Locations of Communal 311 Calls Made from September 2014 through August 2015*

demonstrating a willingness to act on behalf of the common good. Even though contacting 311 does not require substantial effort, the action demonstrates that callers are concerned about a communal matter and are willing to take some action to ameliorate the problem.



*Figure 9: 311 Call Records by Type of Call, 2014-2015 (NYC 311, 2017)*

During the 2014-2015 academic year, more than one-million calls were made to 311 relating to matters that required government intervention to resolve.<sup>29</sup> As shown in Figure 9, 10% of these calls did not include geographic information.<sup>30</sup> The remaining 90% of 311 requests included geographic identifiers, making them suitable for use in this study. 51% of the 311 requests in the 2014-2015 academic year related to personal

<sup>29</sup> For the purposes of this study, 311 calls placed from September 1, 2014 through August 31, 2015 were counted. This timeframe was selected to coincide with the 2014-2015 school year data used in other parts of the study.

<sup>30</sup> An analysis of the 311 requests without geographic identification revealed that the nature of these 311 calls did not differ from the 311 calls that contained geographic identifiers.

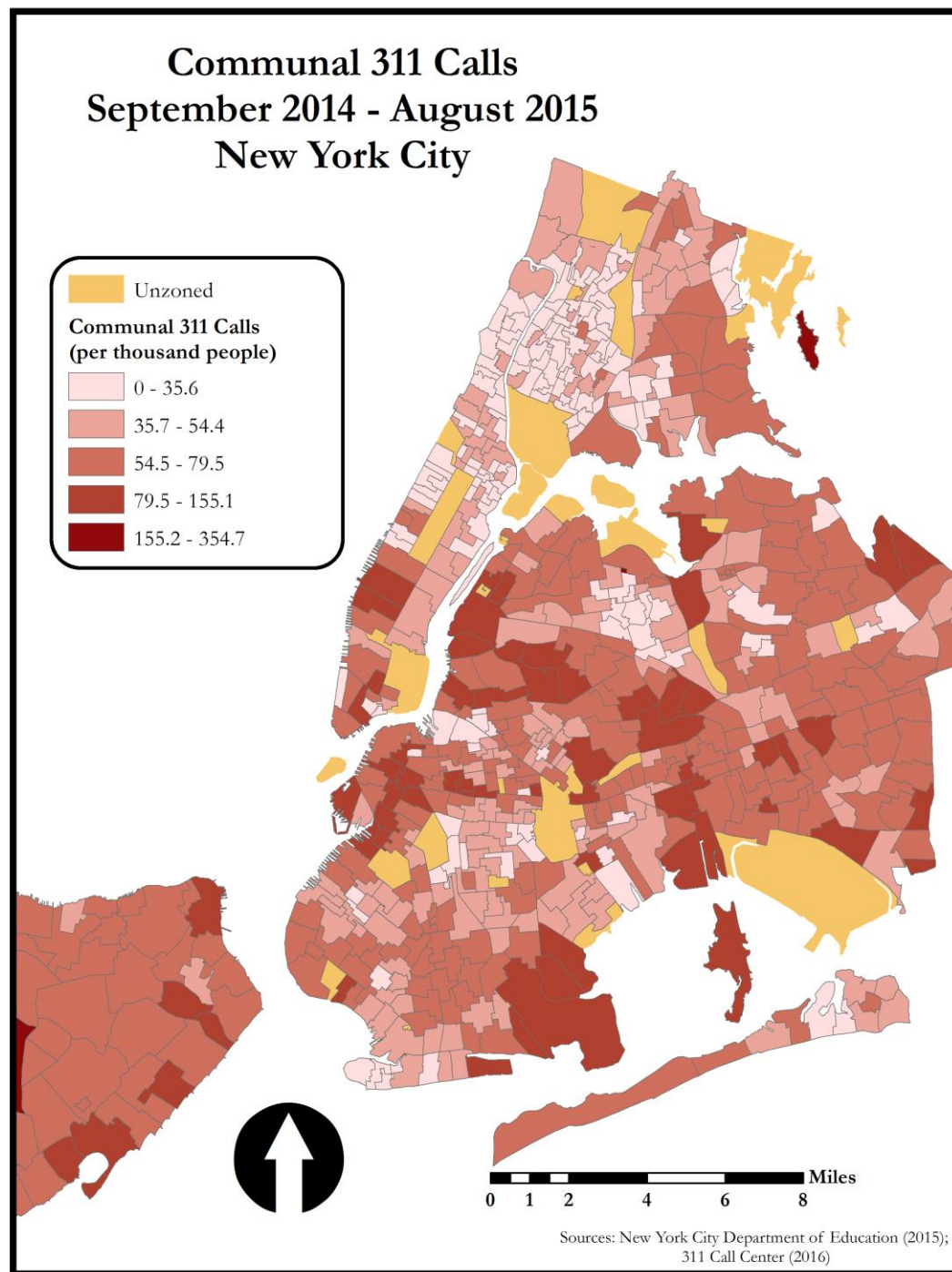


matters, and 39% of 311 requests related to communal concerns. As noted above, this study relies on the 412,353 311 requests relating to communal matters as an indicator of collective efficacy.

Map 13 and Map 14 show that there are similarities in the locations of communal and non-communal 311 calls. Given the large number of calls made to 311, neither map is particularly useful in demonstrating the density of 311 calls. Map 15 addresses this deficiency and displays the number of communal 311 calls per capita in each of the 631 elementary school zones across New York City. Few clear patterns emerge on the map. There are instances of high, medium, and low levels of communal 311 calls per capita in each of the five boroughs. Across the city, there is a range of 4 communal 311 calls per thousand people to 355 communal 311 calls per thousand people ( $M=52.78$ ,  $SD=26.52$ ).

One pattern worth noting is that the areas of the city with a high density of office buildings and commercial centers have above average communal 311 calls per capita. For example, parts of lower Manhattan, midtown Manhattan, and downtown Brooklyn have above average communal 311 calls per capita. One can easily hypothesize that these elevated numbers are a result of the increased presence of people during business hours. Given that the daytime populations of these areas is not reflected in the total population count from the census, which is used to normalize the 311 communal calls, it is important to be cautious when analyzing patterns in these areas.

Table 19 provides a useful analysis of the relationship between communal 311 calls per capita and a range of other variables in the city's elementary school zones. As discussed in greater depth in Chapter Three a spatial weighting method was used to estimate population variables in New York City's elementary school zones using data



Map 15: Communal 311 Calls per capita by Elementary School Zone<sup>31</sup>

<sup>31</sup> This data is displayed using a *natural breaks* classification.

from the decennial census. All of the variables shown in Table 19, with the exception of communal 311 calls per capita, are based on the census spatial weighting method. A collection of Pearson correlation coefficients was calculated to demonstrate the relationships between communal 311 calls per capita and relevant census data.

	Communal 311 Calls per capita	% Asian	% Black	% Hispanic	% White	% Owner Occupied Housing	% Vacant	% HH with Kids
Communal 311 Calls per capita	1.00							
% Asian		1.00						
% Black	-.155***	-.471***	1.00					
% Hispanic	-.318***	-.245***	-.141***	1.00				
% White	.364***	.130**	-.638***	-.524***	1.00			
% Owner Occupied Housing	.468**	.216***	-.140***	-.574***	.467***	1.00		
% Vacant	.278***			-.213***	.207***		1.00	
% HH with Kids	-.159***	-.195***	.310***	.483***	-.606***	-.141***	-.225***	1.00
% Single Family	-.374***	-.554***	.700***	.503***	-.797***	-.627***	-.111**	.436***

Pearson correlation coefficients are only printed for relationships where  $p < .05$ .

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

*Table 19: Pearson Correlation Coefficients for Communal 311 Calls per capita (NYC 311, 2017; U.S. Census Bureau, 2010)*

The percent of the total population that is white, the percent of owner-occupied housing units, and the percent of vacant housing units were all positively correlated with communal 311 calls per capita. Conversely, the percent of the total population that is black, the percent of the total population that is Hispanic, the percent of households with children, and the percent of families with children headed by a single parent were all negatively correlated with communal 311 calls per capita. These statistics demonstrate that as the white population increases, the number of communal 311 calls per capita increases; whereas, when the black and Hispanic populations increase, the number of 311 calls per capita decreases. There is no significant relationship between the size of the Asian population and the number of communal 311 calls per capita.

Countless explanations could account for these relationships. However, prior research indicates that white people are more likely to use government resources, and people of color are more likely to be skeptical of both the usefulness of certain government resources as well as the process of sharing information with the government (VanRyzin, Muzzio, & Immerwahr, 2004). Regardless of the reason for the correlation between race and the number of communal 311 calls per capita, it is clear that race must be considered in any statistical models that use communal 311 calls per capita as a variable.

The positive correlation between the proportion of housing units that are owner-occupied and the number of communal 311 calls per capita aligns with theories of social capital and collective efficacy. People who own their homes and live in them have an economic interest in the well-being of their neighborhoods. While the positive correlation between communal 311 calls per capita and the percent of housing units that are owner-occupied aligns with logic and theory, the positive correlation between the vacant housing stock and communal 311 calls per capita requires deeper consideration. One possible explanation is that the increase in vacant housing leads to greater problems that need to be reported to 311. An alternative hypothesis is that vacant housing is more prevalent in areas dominated by white populations that are more likely to use 311. The positive correlation between the proportion of the population that is white and the percent of housing units that are vacant offers some support for the latter hypothesis. The full explanation for the positive correlation between the number of communal 311 calls per capita and the percent of housing units that are vacant is likely a combination of both factors identified above, as well as others.

Finally, it is worth considering the negative correlation between the number of communal 311 calls per capita and the proportion of households with children. Given the relatively high correlation between the proportion of households with children and race, it seems likely that these variables have some degree of a confounding relationship. It is also possible that members of households with children have less time to spend contacting 311, leading to a lower number of communal 311 calls per capita. Perhaps the clearest conclusions that can be drawn from the Pearson correlation coefficients in Table 19 are that a complex combination of demographic factors shape the number of communal 311 calls per capita and that using the number of communal 311 calls per capita as an indicator of collective efficacy requires great care.

Before proceeding, it is important to note that issues of spatial autocorrelation may present some issues for the models constructed in the following sections. Because communal 311 calls are likely to cluster in certain areas, this may have an effect on the results of the models that follow. Given the theoretical nature of this work, a complex spatial autocorrelation analysis and spatial econometric modeling are beyond the scope of this study. However, future work may include a deeper study of the effects of spatial autocorrelation on these data.

### *Voter Turnout Data*

The second collection of data that this study uses as an indicator variable for collective efficacy is the proportion of eligible voters who voted in the 2009 New York City mayoral election.<sup>32</sup> Voter turnout serves as a useful indicator of collective efficacy

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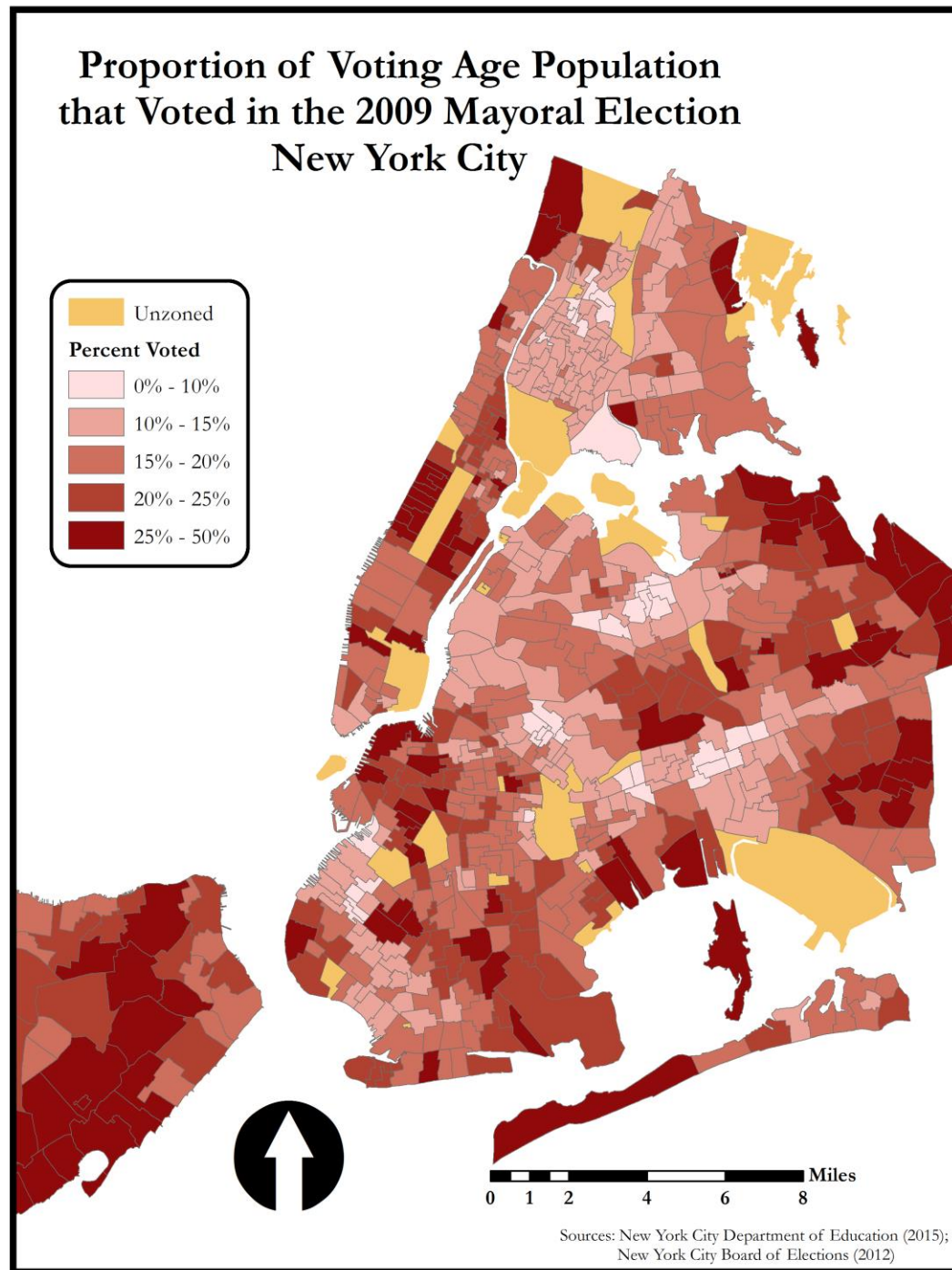
<sup>32</sup> The U.S. Census Bureau partners with each state's board of elections to join voting data with data from the decennial census. The most recent files containing voting data of this kind date back to 2006-2010.

because of its relationship to civic virtue. Prior scholarship on voter turnout has shown that the impetus to vote is tied to a range of factors. While economic resources and race continue to shape voter turnout, these effects have diminished over time (Miller & Shanks, 1996). The civic virtues model suggests that an individual's sense of responsibility to other members of their society also shapes voter turnout (Capara, 2008). While empirical studies have not tested the civic virtues model, theory supports the concept. An individual's ability and decision to vote are complex matters, but the action does indicate a level of commitment to civic life. As a result, voter turnout provides a useful indicator of collective efficacy.

Map 16 shows the proportion of the voting age population that voted in the 2009 mayoral election. In order to produce this map, a spatial weighting method was used to estimate data from the 5,757 voting tabulation districts in the 631 elementary school zones. The proportion of the voting age population in each elementary school zone that voted in the 2009 mayoral election ranges from 6% to 41% ( $M=.1794$ ,  $SD=.0614$ ). Similar to the data on the number of communal 311 calls per capita, Map 16 shows that there are instances of high, medium, and low voter turnout across all five boroughs. Unlike the number of communal 311 calls per capita, there are some more obvious patterns visible in Map 16. First, many of the wealthier areas of the city—including Riverdale, the Upper West Side, the Upper East Side, Brooklyn Heights, and areas on the west side of Brooklyn's Prospect Park—have high levels of voter turnout. Conversely, areas with higher levels of poverty—including large areas of the Bronx and parts of Brooklyn and Queens—have lower voter turnout rates. Another visible pattern is that

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There was no local election in 2010, making the 2009 mayoral election the most appropriate source of data for this study.



Map 16: Proportion of Voting Age Population that Voted by Elementary School Zone<sup>33</sup>

<sup>33</sup> This data is displayed using a *natural breaks* classification.

areas with less dense populations—including Staten Island and the outer limits of Brooklyn and Queens—have relatively high levels of voter turnout.

Finally, areas with large immigrant populations—including parts of Queens, the Bronx, Brooklyn, and upper-Manhattan—have relatively low voter turnout rates. The voting records dataset only adjusts for each individual’s age; it fails to adjust for residents who are ineligible to vote, including non-citizens and people who are incarcerated or on parole. Because the dataset accounts for the voting age population rather than the voting eligible population, it is likely that voter turnout rates are inappropriately depressed in elementary school zones with high concentrations of noncitizens and individuals on parole. This source of error cannot be easily resolved, but it will be considered in the analysis that follows.

	Voter Turnout	% Asian	% Black	% Hispanic	% White	% Owner Occupied Housing	% Vacant	% HH with Kids
Voter Turnout	1.00							
% Asian	-.110**	1.00						
% Black		-.471***	1.00					
% Hispanic	-.578***	-.245***	-.141***	1.00				
% White	.527***	.130**	-.638***	-.524***	1.00			
% Owner Occupied Housing	.505***	.216***	-.140***	-.574***	.467***	1.00		
% Vacant				-.213***	.207***		1.00	
% HH with Kids	-.515***	-.195***	.310***	.483***	-.606***	-.141***	-.225***	1.00
% Single Family	-.326***	-.554***	.700***	.503***	-.797***	-.627***	-.111**	.436***

Pearson correlation coefficients are only printed for relationships where  $p < .05$ .

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

*Table 20: Pearson Correlation Coefficients for 2009 Voter Turnout (New York State Board of Elections, 2012; U.S. Census Bureau, 2010)*



Table 20 provides an analysis of the correlation between voter turnout and a range of census variables. As with the analysis of communal 311 calls per capita, this analysis considers the relationships between a collective efficacy indicator variable and a range of relevant census data. Both the voter turnout data and the census data have been calculated within elementary school zone boundaries using a spatial weighting method. Pearson correlation coefficients are used to show the relationships between all variables.

The percent of the population that is white and the proportion of housing units that are owner-occupied are both positively correlated with voter turnout. Conversely, the percent of the total population that is Asian, the percent of the total population that is Hispanic, the percent of households with children, and the percent of families with children headed by a single parent were all negatively correlated with voter turnout. These statistics demonstrate that as the white population increases, voter turnout increases; whereas, when the Asian and Hispanic populations increase, voter turnout decreases. There is no significant relationship between the size of the black population and voter turnout. One clear explanation of these relationships is that the Asian and Hispanic populations have sizable numbers of noncitizens, depressing their voter turnout numbers.

Similar to the positive correlation between communal 311 calls per capita and the proportion of housing units that are owner-occupied, the positive correlation between voter turnout and the proportion of housing units that are owner-occupied aligns with both logic and theory. People who own their homes have a direct economic interest in their community, and their vote for a mayor has the potential to shape policy that impacts their investment. Notably, there is no significant correlation between vacancy rates and

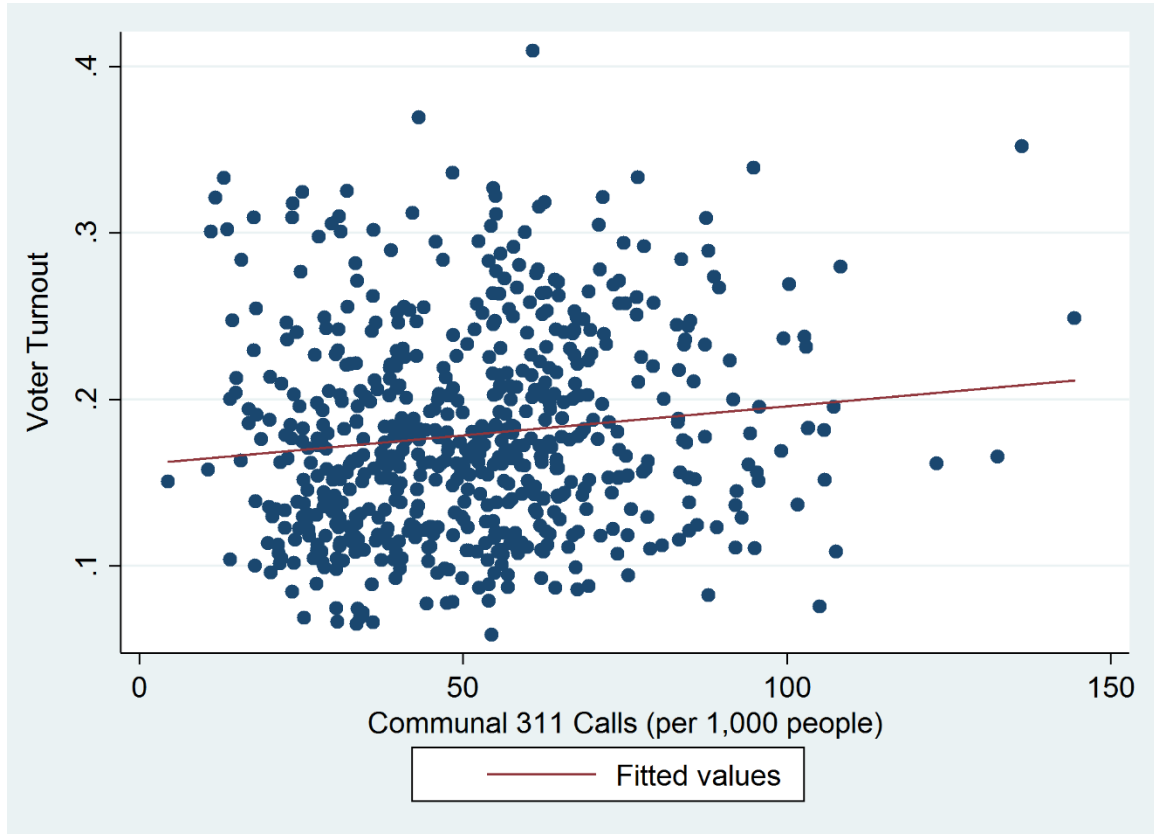
voter turnout. Given the nature of New York City's housing market, which strains to meet the needs of low- and middle-income residents, the lack of correlation between vacancy rates and voter turnout is not particularly meaningful.

The relationship between voter turnout and households with children also mirrors the relationship between communal 311 calls per capita and households with children. In both cases, there is a negative correlation. A possible explanation of this pattern is that people with children have less time to spend caring for issues beyond the needs of their families. As noted above, the percent of households with children also correlates with race in a manner that makes it challenging to note any potential causality between this variable and the collective efficacy indicator. It is worth noting that while there is a significant negative correlation between the percent of families headed by a single parent and voter turnout ( $r = -0.326$ ,  $p < 0.001$ ), there is a significant positive correlation between the percent of families headed by a married couple and voter turnout ( $r = 0.326$ ,  $p < 0.001$ ). Again, this pattern may be a result of the comparative resources available to cast a vote under the conditions found in a single-parent family versus a married couple family; or, it may be a result of the confounding relationship between race, class, and family structure.

#### *Collective Efficacy Index Variable*

The number of communal 311 calls per capita and voter turnout highlight different forms of collective efficacy. The first, communal 311 calls, demonstrates an individual's willingness to take action on behalf of the common good. Voter turnout offers a slightly different view into collective efficacy in that it demonstrates an individual's engagement with civic life. As shown in Figure 10, there is a small, but

significant relationship between these two indicators of collective efficacy ( $r = .130$ ,  $p < 0.01$ ). Given that both sets of data capture an element of collective efficacy, it is logical that the two correlate; however, the relatively weak correlation between the two measures is unsurprising given that each indicator variable captures a different aspect of collective efficacy.



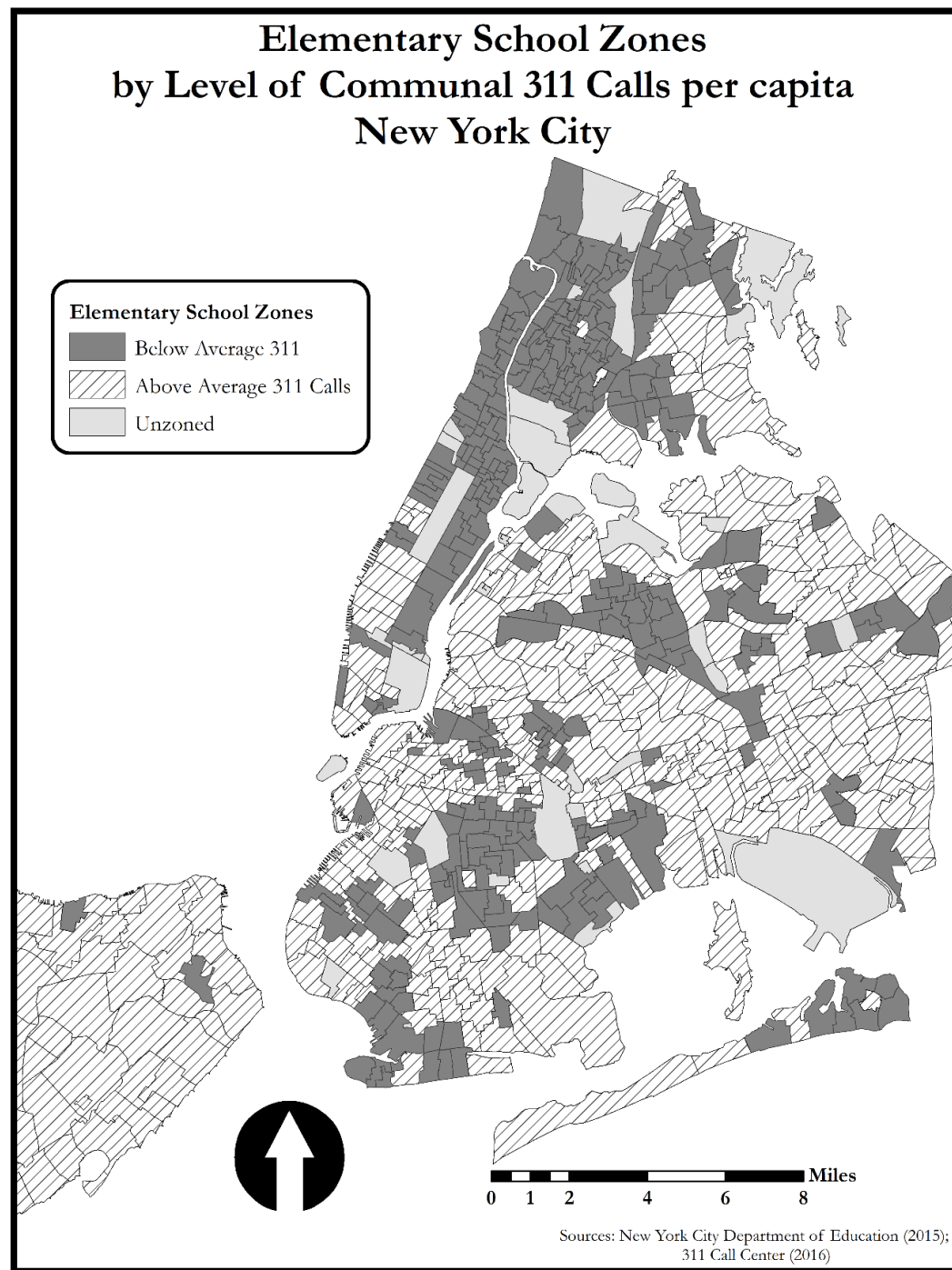
*Figure 10: Scatterplot of Voter Turnout and Communal 311 Calls per capita*

Each of the measures of collective efficacy has its strengths and weaknesses. Perhaps the greatest strength of both measures is that they capture actions taken by citizens rather than stated views about hypothetical scenarios, such as the data used to measure collective efficacy in prior studies. One of the weaknesses of the communal 311 calls variable is that the elevated daytime population of areas with office buildings and commercial centers may influence the measure. People working in these areas or visiting

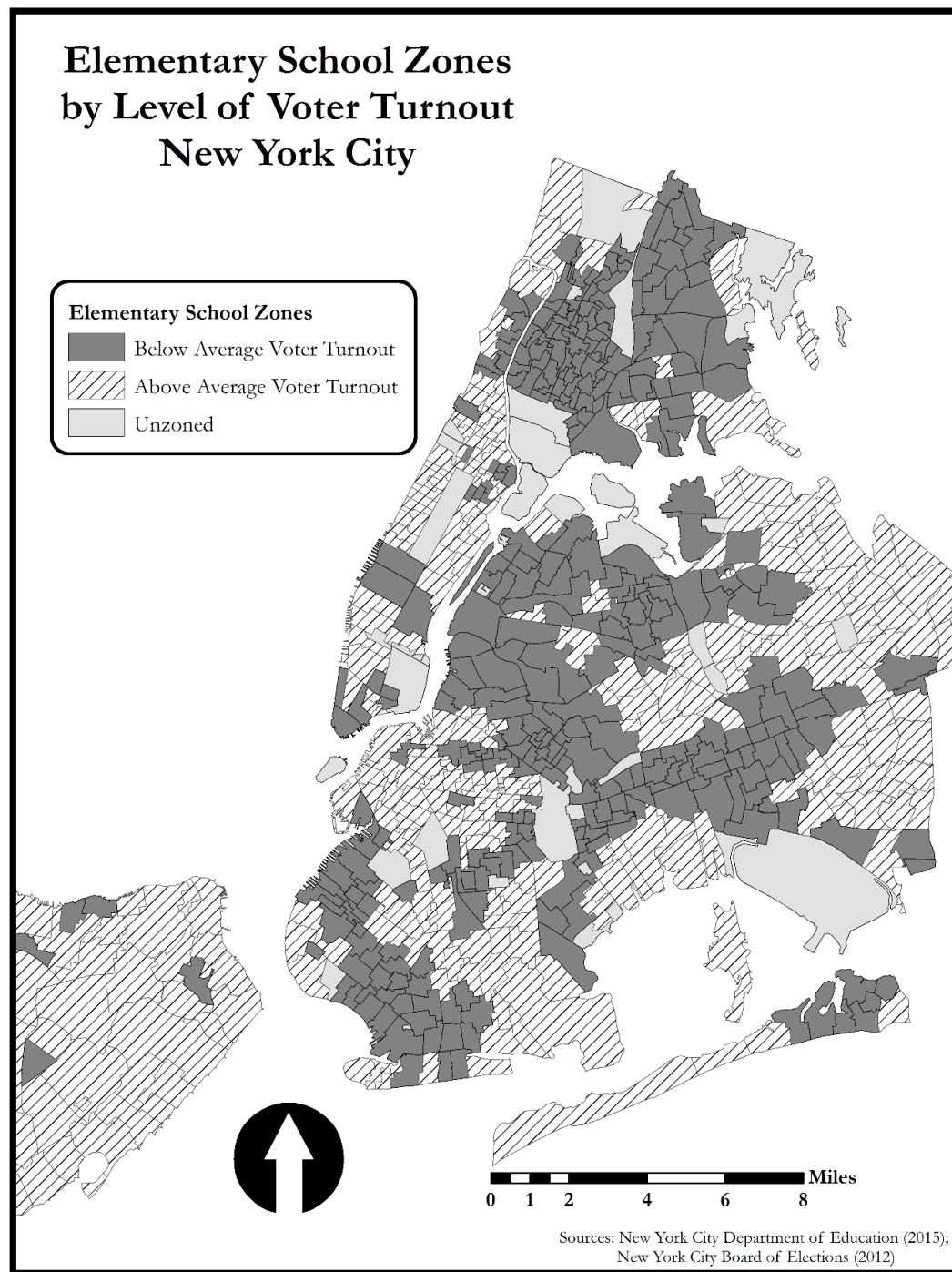
them to shop may contact 311 out of a communal concern for issues they witness. While this is a form of collective efficacy, the individuals making these calls are not residents and are not represented in the population count for the area. As a result, the communal 311 calls per capita measure may be misleadingly high in commercial and business centers. Voter turnout also has a number of weaknesses, which were discussed in detail earlier. The two most significant issues with this measure are that it does not adjust for people who lack citizenship or for people who are on parole.

The weaknesses of both measures of collective efficacy necessitate that the study employ them with great care in any analysis. These weaknesses do not override the usefulness of the measures. In reality, there are few, if any, perfect measures; and all studies must carefully consider and account for the weaknesses in their data. Because the weaknesses in the two collective efficacy indicator variables are quite different, the elementary school zones with unnaturally elevated communal 311 calls per capita and with unnaturally depressed voter turnout rates do not overlap. Given that the areas where the communal 311 calls and voter turnout measures may be problematic do not overlap, it is possible to combine the two indicators of collective efficacy into a single index of collective efficacy that adjusts for the weaknesses in the data.

In order to construct a single measure of collective efficacy, this study first changes the communal 311 calls per capita and the voter turnout rate variables from continuous variables into binary variables. The binary variables simply divide the continuous variables into separate above average and below average groupings. Map 17 and Map 18 display the new binary variables of above and below average communal 311 calls per capita and voter turnout. Finally, the two binary variables are combined into a



*Map 17: Level of Communal 311 Calls per capita by Elementary School Zone*

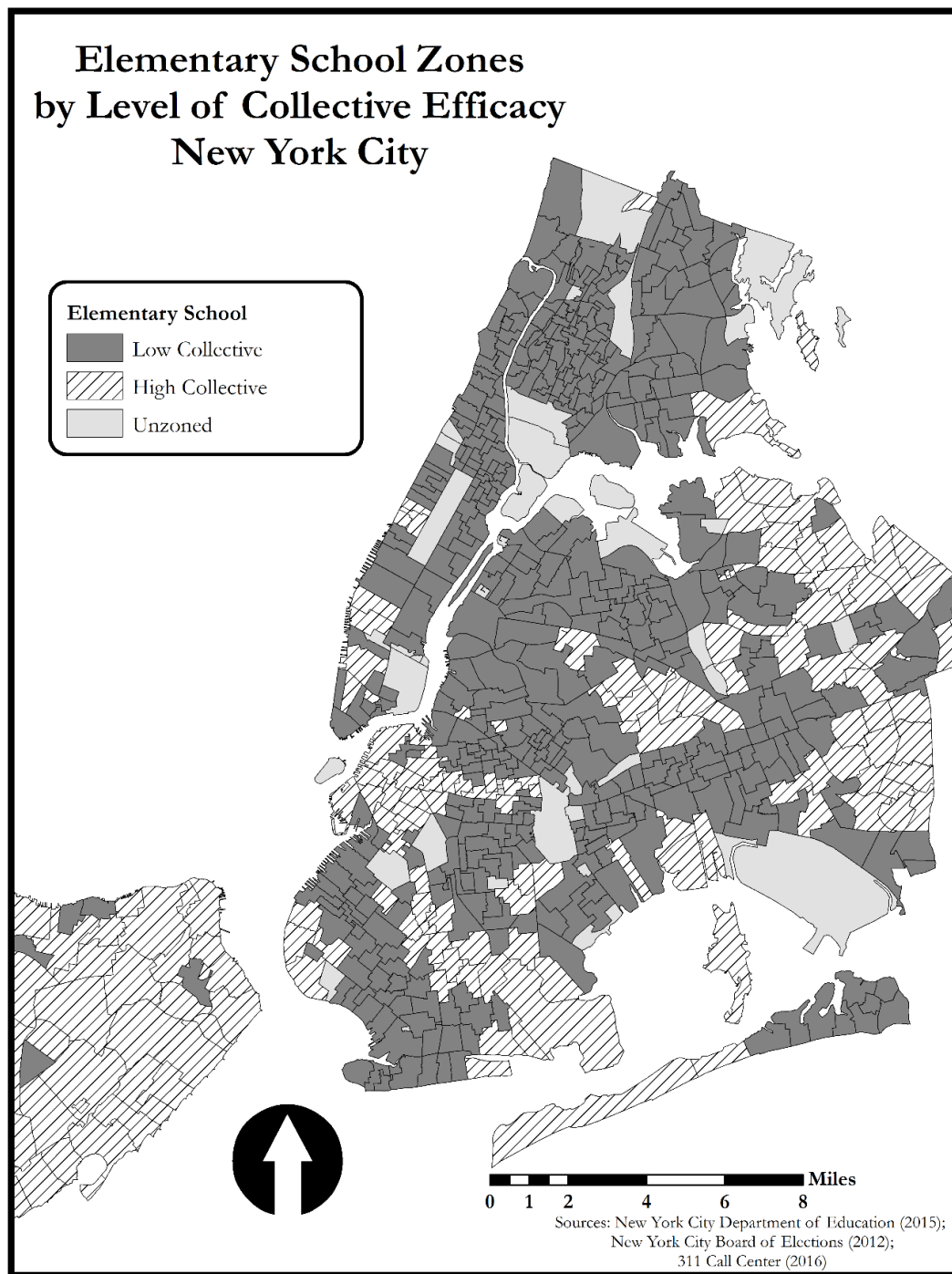


*Map 18: Level of Voter Turnout by Elementary School Zone*

single binary variable of high collective efficacy and low collective efficacy. High collective efficacy consists of elementary school zones that have both above average communal 311 calls per capita and above average voter turnout rates. Any elementary school zones that do not meet these conditions are grouped into the low collective efficacy category.

Map 19 shows the distribution of elementary schools zones with high and low collective efficacy using the combined communal 311 calls and voter turnout data. The map shows that areas with high collective efficacy tend to cluster together. Another visible feature of this map is that the Bronx only has a couple of elementary school zones with high collective efficacy whereas Staten Island has an abundance of areas with high collective efficacy. While the stark differences in levels of collective efficacy by borough must be studied at the city-level, it is also worth conducting distinct studies of collective efficacy by borough.

Similar to the school segregation analysis in Chapter Four, which provided a breakdown by borough due to the distinct nature of each area, the analysis of collective efficacy in this chapter considers each borough as separate entities. Table 21 provides a range of demographic variables and information about collective efficacy by borough. In the Bronx—where there is a childhood poverty rate exceeding 40%, fewer than 20% of adults have bachelor’s degrees, and less than 20% of housing units are owner-occupied—only 1.7% of elementary school zones have high collective efficacy. In Staten Island—where the childhood poverty rate is less than 20%, more than 30% of adults have bachelor’s degrees, and close to 65% of housing units are owner-occupied—more than



*Map 19: Level of Collective Efficacy by Elementary School Zone*



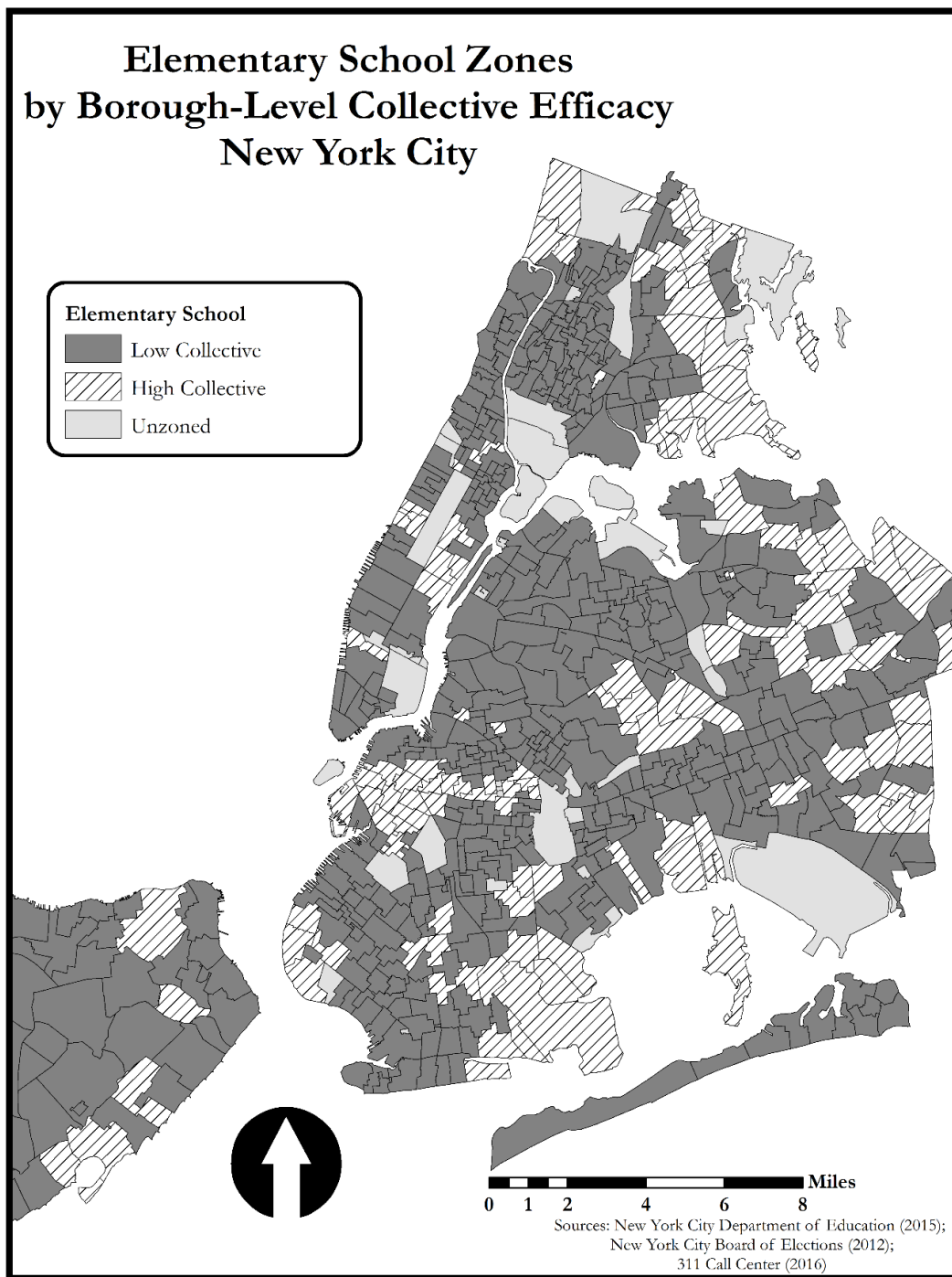
	Bronx	Brooklyn	Manhattan	Queens	Staten Island	Total
% Child Poverty	42.2%	33.4%	24.0%	21.0%	17.5%	29.7%
% Bachelor's Degree or Higher	18.3	31.6%	59.4%	30.3%	30.6%	35.0%
% Not a Citizen	18.7%	16.5%	15.2%	21.8%	7.7%	17.6%
% Asian	3.4%	10.4%	11.2%	22.8%	7.4%	12.6%
% Black	30.1%	31.9%	13.0%	17.8%	9.5%	22.8%
% Hispanic	53.5%	19.8%	25.5%	27.5%	17.3%	28.6%
% White	10.9%	35.7%	48.0%	27.7%	64.0%	33.3%
% Owner Occupied Housing	19.3%	27.7%	22.8%	43.0%	64.1%	31.0%
% Vacant	5.6%	8.3%	9.8%	6.6%	6.3%	7.8%
% Households with Children	40.4%	33.4%	18.2%	33.4%	35.6%	30.8%
% Families with Single Parent	61.5%	44.3%	43.2%	34.2%	29.1%	44.0%
Mean Communal 311 Calls 1,000 people	37.3	55.5	38.3	61.1	75.6	52.8
Mean Voter Turnout	14.1%	17.7%	21.1%	18.0%	22.9%	17.9%
% of Elementary School Zones with High Collective Efficacy	2.6%	25.1%	9.4%	31.1%	85.7%	24.6%

Table 21: Collective Efficacy Variables and Demographics by Borough (U.S. Census Bureau, 2010, 2015)

half of the elementary school zones have high collective efficacy. Brooklyn, Manhattan, and Queens also have distinct demographic qualities.

Given the extreme range in the proportion of elementary school zones with high collective efficacy across boroughs, this study considers an intra-borough measure of collective efficacy in addition to the citywide measure. The intra-borough measures of collective efficacy mirror the measure of collective efficacy used for the whole city. Instead of using the binary above average and below average communal 311 calls and voter turnout rate measures across all elementary school zones in the city, the intra-borough collective efficacy constructs only use these measures across the elementary schools zone from each separate borough. The result is a separate binary measure of collective efficacy for each borough.

Map 20 shows areas with high collective efficacy using the intra-borough measure of collective efficacy. 21.8% of elementary school zones in Brooklyn have high



*Map 20: Borough-Level Collective Efficacy by Elementary School Zones*

intra-borough collective efficacy, 19.0% of elementary school zones in the Bronx have high intra-borough collective efficacy, 14.1% of elementary school zones in Manhattan have high intra-borough collective efficacy, 20.9% of elementary school zones in Queens have high intra-borough collective efficacy, and 14.3% of elementary school zones in Staten Island have high intra-borough collective efficacy.

Although it is worth studying New York City as a whole with a single measure of collective efficacy, the significant demographic differences between the five boroughs make it necessary to also analyze each area individually. The models used to assess the utility of the school-neighborhood bond in the sections that follow will analyze New York City as a whole as well as each borough as an individual site.

### **Relationship Between Collective Efficacy, Schools, and Neighborhoods**

There are significant differences between neighborhoods with low collective efficacy and high collective efficacy; there are also significant difference between schools in neighborhoods with low collective efficacy and high collective efficacy. Table 22 provides an overview of New York City's elementary school zones by level of collective efficacy. As Table 22 shows, the proportions of children living in poverty and children classified as English language learners are lower in elementary school zones with high collective efficacy than in elementary school zones with low collective efficacy.

Additionally, elementary school zones with high collective efficacy have a higher proportion of white residents and a lower proportion of black and Hispanic residents. The areas with high collective efficacy also have a much higher proportion of housing units that are owner-occupied and a much lower proportion of families that are headed by a

	ESZ with High Collective Efficacy	ESZ with Low Collective Efficacy	All Elementary School Zones
<b>School-Level Variables<sup>34</sup></b>			
% Child Poverty (4-yr average)	64.4 (26.8)	88.4 (18.9)	82.5 (23.5)
% English Language Learners (5-yr average)	8.2 (7.6)	16.9 (12.0)	14.7 (11.7)
% Classified Special Education (5-yr average)	17.2 (5.1)	17.5 (5.4)	17.4 (5.3)
<b>Neighborhood-Level Variables<sup>35</sup></b>			
% Asian	11.4 (13.2)	11.6 (15.2)	11.5 (14.6)
% Black	21.2 (30.1)	28.3 (26.9)	26.6 (28.1)
% Hispanic	13.8 (9.3)	35.6 (23.2)	30.3 (22.7)
% White	51.2 (29.4)	21.5 (24.0)	28.8 (28.4)
% Owner Occupied Housing	52.6 (21.1)	24.3 (16.9)	31.3 (21.7)
% Vacant	7.3 (3.3)	7.2 (3.4)	7.2 (3.4)
% Households with Children	31.0 (7.7)	36.2 (10.3)	34.9 (10.0)
% Families with Single Parent	31.8 (16.7)	49.3 (18.5)	45.0 (19.6)
<b>School Outcome Variables<sup>36</sup></b>			
% Proficient 3 <sup>rd</sup> Grade ELA (5-yr average)	48.1 (16.7)	33.2 (15.6)	36.8 (17.1)
% Proficient 3 <sup>rd</sup> Grade Math (5-yr average)	55.0 (19.0)	40.3 (18.2)	43.9 (19.5)
Number of Elementary Schools Zones (N)	152	468	620

Note: Standard deviations are included in parenthesis

Table 22: Comparison of Schools and Neighborhoods by Level of Collective Efficacy

<sup>34</sup>Averages were generated using enrollment statistics (New York City Department of Education, 2016b). Because of data availability, child poverty—measured using the number of children eligible for free and reduced-price lunch—is a 4-year average, including the 2011-2012 through 2014-2015 school years. All other data are 5-year averages, including the 2010-2011 through 2014-2015 school years.

<sup>35</sup> These data are generated from a spatial weighting of census tracts within elementary school zone boundaries (U.S. Census Bureau, 2010).

<sup>36</sup> Proficiency rates were generated using outcomes data (New York City Department of Education, 2016d). These proficiency rates are 5-year averages— including the 2010-2011 through 2014-2015 school years— of the proportion of children who met or exceeded expectations on the state exams.

single parent. Lastly, the neighborhood schools in elementary school zones with high collective efficacy have a higher proportion of third graders who demonstrate proficiency in math and English language arts.

The differences between the spaces with high and low collective efficacy align with the theoretical and practical discussions presented throughout this study. Despite the clear correlation between collective efficacy and educational outcomes shown in Table 22, this is not sufficient evidence of a causal relationship between neighborhood collective efficacy and educational outcomes. In fact, the large standard deviations of the data points in this table necessitate caution when seeking to attribute causality. As Figure 11 and Figure 12 show, there is a large amount of overlap in the range of proficiency levels found in elementary school zones with high collective efficacy and low collective efficacy. Because there are many factors that shape and impact educational outcomes, the overlap between high and low collective efficacy areas is unsurprising.

Given the overlap in proficiency levels between elementary school zones with high and low collective efficacy, the large standard deviations in school-level and neighborhood level variables for elementary school zones with high and low collective efficacy, and the complex relationship between demographic factors and educational outcomes, assessing causation is challenging. Simply comparing the educational outcomes in elementary school zones with high collective efficacy to the educational outcomes in elementary school zones with low collective efficacy is insufficient. Instead, this study uses a treatment effects model to assess causation.

The treatment effects model used in this study matches elementary school zones that share similar demographic profiles but fall into different collective efficacy

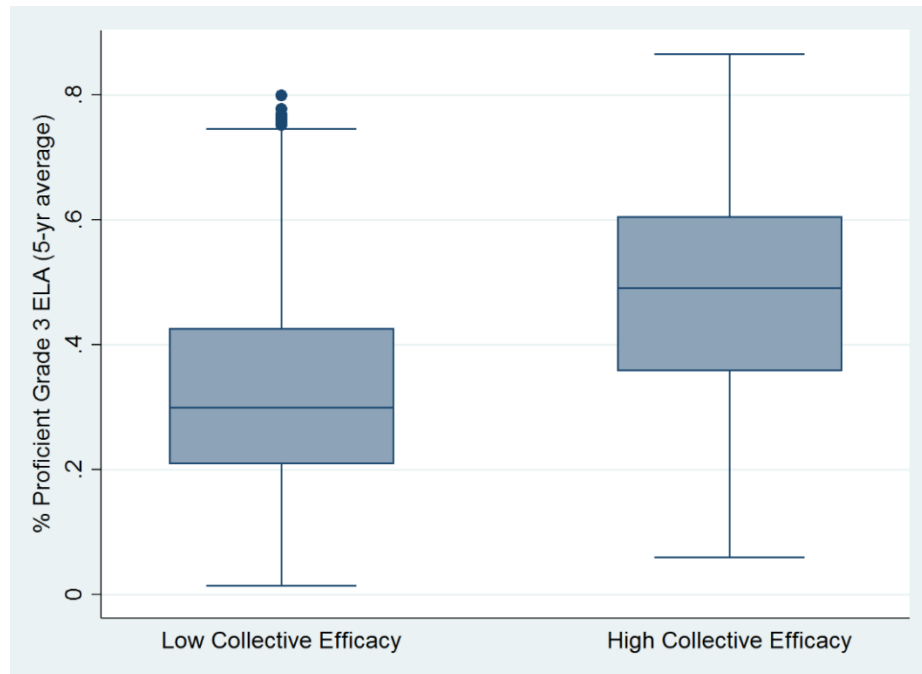


Figure 11: ELA Proficiency by Level of Collective Efficacy

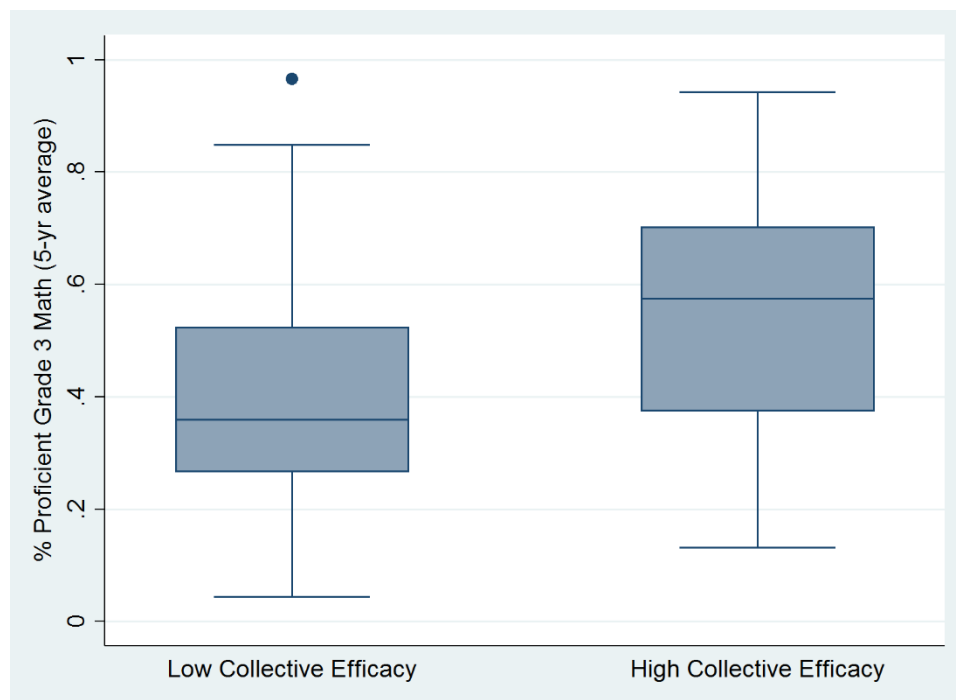


Figure 12: Math Proficiency by Level of Collective Efficacy

categories. In order to complete the matching process, the model uses a collection of covariates. This study relies on all of the school-level and neighborhood-level variables that differ between high and low collective efficacy neighborhoods as covariates. The list of covariates includes the proportion of students classified as disadvantaged, the proportion of students classified as English language learners, the proportion of residents who identify as black or Hispanic,<sup>37</sup> the proportion of owner-occupied housing units, the proportion of households with children, and the proportion of families headed by a single parent.

	ESZ with High Collective Efficacy N=152	ESZ with Low Collective Efficacy N=468	Standardized Difference
<b>School-Level Variables</b>			
% Child Poverty (4-yr average)	64.4 (26.8)	88.4 (18.9)	-107.3
% English Language Learners (5-yr average)	8.2 (7.6)	16.9 (12.0)	-85.1
<b>Neighborhood-Level Variables</b>			
% Black or Hispanic	35.0 (31.3)	63.9 (31.1)	-95.7
% Owner Occupied Housing	52.6 (21.1)	24.3 (16.9)	136.1
% Households with Children	31.0 (7.7)	36.2 (10.3)	-70.5
% Families with Single Parent	31.8 (16.7)	49.3 (18.5)	-99.1

Note: Standard deviations are included in parenthesis

*Table 23: Baseline Characteristics of High and Low Collective Efficacy Areas in Original Sample*

Table 23 summarizes the baseline characteristics of elementary school zones with high and low collective efficacy and uses standardized differences to compare the balance

<sup>37</sup> This model uses the proportion of residents who identify as black or Hispanic as a single variable because both have a negative correlation with educational outcomes and with collective efficacy. Given that the proportion of the population that is Asian does not differ between areas with high and low collective efficacy and that the proportion of the population that is white has a positive correlation with educational outcomes and collective efficacy, the combined black and Hispanic population serves as an effective proxy for race in this model.

between the two groups. The large standardized differences suggest a high degree of confounding and indicate a need to use a treatment effects model that matches like-neighborhoods based on the covariates.<sup>38</sup>

Because there are more elementary school zones with low collective efficacy (N=468) than with high collective efficacy (N=152), an inverse probability weighting model is used to generate synthetic data points allowing for more complete and accurate matching between treatment groups.<sup>39</sup> Figure 13 shows density graphs for each of the covariates before and after weighting. As these density graphs demonstrate, the inverse probability weighting process ensures that the matched elementary school zones in the treatment (high collective efficacy) and control (low collective efficacy) groups are comparable as defined by the collection of covariates.

High Collective Efficacy		Low Collective Efficacy	
Raw N	Weighted N	Raw N	Weighted N
152	303	468	317

*Table 24: Inverse Probability Weighting Sample*

While the raw dataset consists of 152 elementary school zones in the treatment group with high collective efficacy and 468 in the group with low collective efficacy, the weighted datasets create a more even collection of data points for analysis. As summarized in Table 24, the weighted sample consists of 303 data points in the high

<sup>38</sup> In general, the literature suggests that standardized differences in excess of 10% indicate confounding and necessitate the use of a matching model rather than a regression model (P. Austin, 2008).

<sup>39</sup> Inverse probability weighting is a type of propensity score matching that allows for the unbiased analysis of average treatment effects in studies where there are confounding covariates and a disproportionate number of cases in the treatment groups (P. C. Austin & Stuart, 2015). See Chapter Three for a complete discussion of statistical methods.



collective efficacy group and 317 in the low collective efficacy group. An overidentification test was employed to confirm that the weighted sample balanced the covariates in the two collective efficacy groups without generating sources of error.

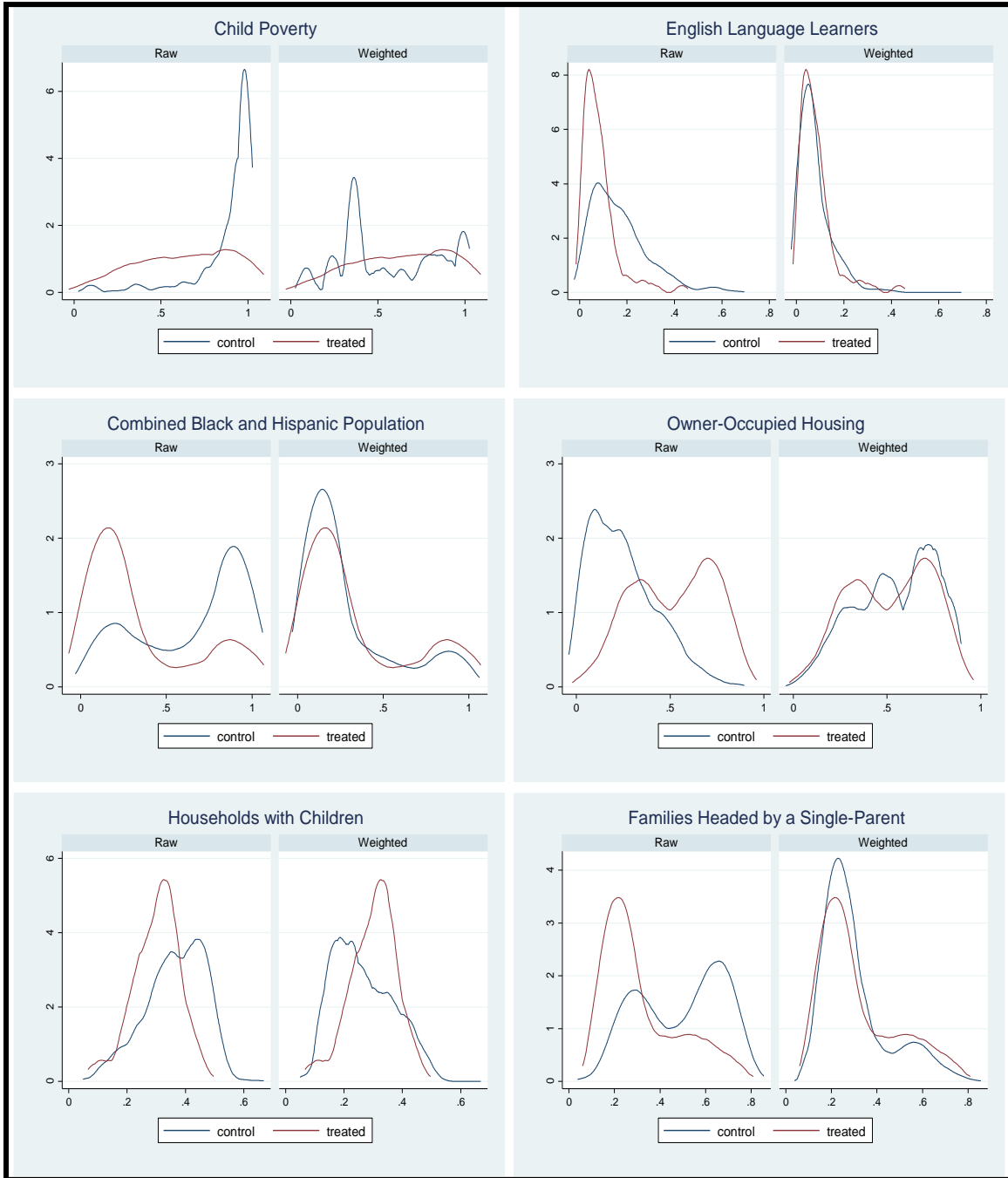


Figure 13: Raw and Weighted Density Graphs for Treatment Effects Model Covariates

The treatment effects model shows that high collective efficacy leads to significantly higher proficiency rates in both math and English language arts at neighborhood schools. Among elementary school zones, the treatment of high collective efficacy increases math proficiency rates at neighborhood schools by an average of 6.98 percentage points ( $p < .05$ ). Similarly, the treatment of high collective efficacy increases English language arts proficiency rates by an average of 6.20 percentage points ( $p < .05$ ). This final treatment effects model concludes that high collective efficacy increases math proficiency rates at neighborhood schools by 11.2% ( $p < .01$ ), and it increases English language arts proficiency rates at neighborhood schools by 11.3% ( $p < .01$ ).

As discussed earlier, the stark differences between New York City's five boroughs necessitates a separate analysis of the relationship between collective efficacy and educational outcomes at the borough-level. When the relationship between collective efficacy and educational outcomes is analyzed at the borough-level, the results are mixed. There is no significant relationship between borough-level collective efficacy and educational outcomes in Brooklyn, the Bronx, or Manhattan. While there is a significant positive relationship between borough-level collective efficacy and educational outcomes in Queens, there is a significant negative correlation between borough-level collective efficacy and educational outcomes in Staten Island. Among elementary school zones in Queens, the treatment of high borough-level collective efficacy increases math proficiency by 12.02 percentage points ( $p < .01$ ). Similarly, the treatment of high borough-level collective efficacy increases English language arts proficiency by 11.01 percentage points in Queens ( $p < .01$ ). In Staten Island, the treatment of high borough-level collective efficacy decreases math proficiency by 9.61 percentage points ( $p < .01$ ),

and the treatment of high borough-level collective efficacy decreases English language arts proficiency by 6.39 percentage points ( $p < .01$ ).

The mixed results of the relationship between collective efficacy and educational outcomes at the city-level and borough-level raise a number of questions. First, how does the diversity of neighborhood types found across New York City versus within individual boroughs shape the analysis? The smaller number of data points found within each individual borough may contribute to the fact that the study found no significant relationship between borough-level collective efficacy and educational outcomes in three of the five boroughs. It is also possible that the relative uniformity across elementary school zones in Staten Island contributes to the results of the analysis for that borough. Regardless of the exact reason for the variation in outcomes for the city-level and borough-level analyses, it is clear that the results must be interpreted with caution.

Another essential question that the results of the treatment effects analyses raises relates to the construct of the collective efficacy variable. Is the use of communal 311 calls per capita and voter turnout an appropriate indicator of collective efficacy? As discussed in detail earlier in this chapter, there is no universally accepted way to measure collective efficacy. In the past, survey data has served as the foundation for most measures of collective efficacy. This study's attempt to use observational data to determine collective efficacy levels is pioneering. While there is strong theoretical support for the use of communal 311 calls and voter turnout as an indicator of collective efficacy, accounting for social phenomena and human behavior is difficult to do quantitatively.

Yet another question that the results of the treatment effects analyses raises involves the use of test scores as a measure of educational outcomes. While the function of schools certainly involves ensuring that children develop math and literacy skills, which standardized test scores captures to some degree, perhaps this is not the best educational outcome to assess within the context of a study of collective efficacy. More logical school-level outcomes that relate to collective efficacy are students' abilities to collaborate with peers and students' levels of civic engagement. Of course, such measures do not exist.

In many ways, the statistical analysis of the effect of collective efficacy on math and English language arts proficiency generates more questions than answers. While it is not possible to state that this study provides conclusive evidence of a causal relationship between collective efficacy and educational achievement, the city-level analysis does provide enough empirical evidence that collective efficacy matters to warrant careful consideration of the utility of the bond between neighborhoods and schools.

## **Conclusion**

The lessons from this study's analysis of collective efficacy and the utility of the school-neighborhood bond fall into two categories:

1. the potential for collective efficacy to serve as a tool for strengthening community in a way that advances the work of schools that are bounded to neighborhood; and
2. the additional research needed to better understand the utility of the school-neighborhood bond.

Before delving into the specific lessons that this study provides, it is essential to reiterate both the complexity and importance of deepening society's understanding of the value of

the school-neighborhood bond. As shown in this study, private school attendance and the proliferation of school choice education reform programs are leading to an increase in the dissolution of the school-neighborhood bond. While there are countless objections to school choice reforms, one that has received little consideration is the fact that schools and neighborhoods have historically shared a symbiotic relationship. More specifically, there is reason to believe that the school-neighborhood relationship is characterized by mutualism, in which each benefits from the other. Schools can benefit from the actions of neighborhood residents who support the well-being of students and the needs of the school; and neighborhood residents can benefit from a school that provides services, occasions for social interaction, and a physical space where people can come together. The school-neighborhood bond makes it possible to strengthen community, advance the needs of residents, and support children.

#### *Lesson Learned about the Utility of the School-Neighborhood Bond*

The analysis of collective efficacy and educational outcomes in this chapter provides empirical support demonstrating the utility of the school neighborhood bond. According to the city-level treatment effects model, high collective efficacy results in elevated math and English language arts proficiency rates. Given the inherent connection between a neighborhood and a traditional public school—a relationship that does not exist between a geographic community and private schools or public schools of choice—the results of this collective efficacy analysis suggest that there is value in the school-neighborhood bond.

There is a multitude of caveats to the above finding that the analysis in this chapter demonstrates the utility of the school-neighborhood bond. As noted earlier, the

model does not demonstrate consistent results at the borough-level. While there are countless explanations for the lack of consistency between the borough-level analysis and the city-level analysis, the only clear conclusion is that the results must be interpreted with caution. The second major caveat is that the data used as a proxy for collective efficacy is not a direct measure of the social phenomenon. In reality, there is no direct measure for collective efficacy, and any study that investigates the effects of collective efficacy must acknowledge the limitations of any calculation that tries to capture the concept. A final caveat is that this study only evaluates outcomes at neighborhood schools. It is possible that private schools, charter schools, and other schools of choice benefit from being located in areas with high collective efficacy. However, the lack of formal relationship between unzoned schools and the residents in the geographic area surrounding these schools limits the ability of these institutions to serve as anchors for all community members. Without a formal school-neighborhood connection, it is harder to leverage the social bonds of all neighborhood residents—particularly people without school-age children—in the way that neighborhood schools can. Still, it is important to recognize that additional research is needed on how unzoned schools may leverage neighborhood collective efficacy.

Despite these caveats, the results of this study provide empirical evidence that should at least pause reform efforts that blindly sever the school-neighborhood bond. Not only does the city-level treatment effects model suggest that a socially engaged set of neighborhood residents positively affects the work done in traditional public schools, but theory and logic support the idea as well. When neighborhood residents are engaged with the life of the community, they are able to support the work of local institutions such as

schools. Neighborhood residents can positively influence the outcomes of traditional public schools in a number of ways—through directly engaging with the school and through supporting the general health and well-being of a community. Engaged residents volunteer to fill unmet needs at a school; they speak out when they feel that a school is not meeting expectations; and they build coalitions to raise money, demand greater support from the government, and bring about policy changes that affect schools. Outside of the schoolhouse, engaged residents ensure that their neighborhoods are safe and welcoming spaces; they look out for one another, particularly the youth; and they support community members in times of need. All of the actions described here are examples of collective efficacy in action.

While it is logical that collective efficacy can generate conditions that enhance learning in traditional public schools, collective efficacy's greatest contributions are unlikely to manifest in the form of elevated standardized test scores. Instead, neighborhood-level collective efficacy is likely to shift some of the focus on private desires towards a greater concern for the common good. Such a shift helps everyone. It places an emphasis on equity in a world where inequality is growing and contributing to a range of social problems. It sets an example for children that shows them how to care for one another in a way that could alleviate the ongoing fight to end school bullying. And it brings groups together in a society where globalization and technology appear to be disconnecting people from one another. These results of neighborhood collective efficacy are admittedly amorphous and utopian, but that does not negate the potential power of collective efficacy to accomplish such goals. Most people can point to specific moments in time when they felt supported by relative strangers or part of a group working towards

a common goal in a way that left them feeling fulfilled. Neighborhood boundaries and an institution that unites people, such as a traditional public school, have the potential to bring people together in a positive way and focus attention through collective efficacy on the common needs of a community.

The manifestation of collective efficacy described above does not result from individuals calling 311 or voting in local elections. This study is not arguing that simply increasing the use of 311 or voting at higher rates will lead to higher educational achievement in traditional public schools or any of the other positive social outcomes described throughout this chapter. These datasets simply serve as indicators of the kinds of community investment that bring about positive results for a neighborhood.

There are some obvious recommendations for increasing a neighborhood's collective efficacy. Perhaps the single most important action that could promote collective efficacy is finding ways to increase housing ownership and the length of time people stay in a community. As the data has shown, there is a strong positive correlation between measures of collective efficacy and the proportion of housing units that are owner-occupied—likely a result of the economic investment in a community that accompanies home ownership. Policies that promote home ownership and make it possible for low- and middle-income households to purchase homes could lead to increases in collective efficacy, particularly in areas where home ownership is low and tenure in a neighborhood is short.

In order to generate high levels of collective efficacy and the positive outcomes associated with it, communities cannot, and should not, follow a rigid set of steps. All neighborhoods have a unique character that must be considered and honored. However,



there are a number of actions and resources, beyond incentivizing home ownership and neighborhood tenure, that should be considered when seeking to increase neighborhood collective efficacy. There are certain kinds of physical spaces that bring people together, connect neighbors, and encourage activities that support the common good. For example, parks, front porches or front stoops, walkable sidewalks, community centers, and schools with space for community events all provide opportunities for people to interact with one another in a way that has the potential to bring about efforts that support the common good. Supporting the construction and maintenance of these types of spaces through government resources, philanthropic dollars, and tax breaks could lead to greater levels of neighborhood collective efficacy.

Beyond physical resources, there is a range of activities and events that can unite community members in a positive way. For example, block parties and other community social events, free classes focusing on topics of interest such as art or technology, and interest groups such as a book group or a community bowling team all provide opportunities to bring people together and develop a greater interest in supporting the well-being of a community and its residents. Individuals and organizations can all play a role in planning these kinds of events.

There are also factors beyond the control of a neighborhood that can increase collective efficacy. A tragic death, a horrific event of historical significance, or an injustice that needs to be fought all have the power to bring people together. While all of these conditions bring about some kind of pain, such significant moments do have the power to unite people to work towards the common good. On occasion, a community can build off the organizing that happens in response to tragedy to augment collective

efficacy in a way that supports people well beyond the shocking event that originally united the group. Leveraging the kind of unity that is born from tragedy requires strong leadership and thoughtful planning.

In addition to the conditions and resources discussed above, the people living in a neighborhood need time to engage with one another in order for collective efficacy to flourish. If people work long hours or spend extended periods of time out of town for vacation or business, they are unable to engage with neighborhood life in a consistent and meaningful way. However, when people do have the time, a community has the right resources, and conditions allow for the growth of collective efficacy, positive social outcomes are likely to result.

One final condition that should be considered by neighborhoods seeking to build collective efficacy is diversity. The relationship between diversity and collective efficacy is complex and is discussed in greater depth in the Chapter Six. However, it is worth noting that certain forms of diversity clearly augment collective efficacy. For example, a diversity of ages in a community allows everyone to benefit from the wisdom of the elderly and the free time they often have to volunteer in neighborhood institutions and keep watch over a community. Additionally, the presence of children has the potential to inspire a greater level of concern about the future and a desire to ensure that the youth have what they need to lead happy and successful lives. The relationship of other forms of diversity—including race, ethnicity, and socioeconomic status—to levels of collective efficacy will be explored in the following chapter.

### *Future Research*

Before turning to the next chapter's discussion of diversity, collective efficacy, and school boundaries, it is worth highlighting a few specific lessons that the analysis of the school-neighborhood bond provides for future work in this area. Using communal 311 calls and voter turnout rates as an indicator of collective efficacy is far from ideal. While these measures are appropriate indicators of collective efficacy, they are not measures of collective efficacy itself. However, unlike communal 311 calls and voter turnout rates, other potential measures of collective efficacy beyond survey data are much harder to collect. High participation rates in parent teacher organizations, active neighborhood associations, and other kinds of community volunteer work provide better evidence of collective efficacy, but collecting this data on a large scale is costly and difficult to quantify. Future research can build on the work of this study, seek stronger measures of collective efficacy, and consider the utility of the school-neighborhood bond on a smaller scale rather than looking across an entire city.

The next step in studying collective efficacy and the utility of the school-neighborhood bond requires a qualitative analysis of the relationship between individual schools and neighborhoods. One approach to such a qualitative study could be to select a sample of school zones from both the high and low collective efficacy categories used in this study. After choosing a small number of sites for in-depth studies, extensive fieldwork is needed to understand the conditions and resources that promote or inhibit collective efficacy and potentially give value to a school-neighborhood bond. Observations at community events, neighborhood association meetings, and parent teacher organizations would be an essential part of such a study. Additionally, interviews with key stakeholders and community leaders, along with focus groups that include

parents and other residents would be helpful. Developing an in-depth understanding of what the school-neighborhood bond looks like in practice would provide immensely useful insight into this area of study. The following chapter provides additional details about future research needs.

## Chapter Six – Conclusion

This study began with the words of G.K. Chesterton that outline a paradox of reform. Chesterton describes two kinds of reformers: the first, “the more modern type,” is quick to eliminate a construct, policy, or institution when its function is not immediately apparent, while the second, “the more intelligent type,” requests a deep inquiry into the purpose of the construct, policy, or institution before determining its future. Many school choice advocates act like the first kind of reformer and have been quick to sever the bond between schools and neighborhoods without considering the utility of this relationship. This study has sought to follow the route of the second type of reformer and evaluate the purpose of the school-neighborhood bond and its potential value in contemporary society.

In the pages that follow Chesterton’s introduction to his paradox, he elaborates on his view of intelligent reform. Chesterton writes,

Nobody has any business to destroy a social institution until he has really seen it as an historical institution. If he knows how it arose, and what purposes it was supposed to serve, he may really be able to say that they were bad purposes, or that they have since become bad purposes, or that they are purposes which are no longer served. But if he simply stares at the thing as a senseless monstrosity that has somehow sprung up in his path, it is he and not the traditionalist who is suffering from an illusion (Chesterton, 1929).

As Chesterton argues, the history of institutions matter and must not be ignored when looking towards the future. Chapter Two’s detailed review of prior scholarship on the school-neighborhood bond provides some of the historical context needed to assess the utility of this construct.

The literature review demonstrates that the relationship between a school and neighborhood originated to meet the practical need of limiting travel time between individual students’ homes and the schoolhouse. Despite this purely practical origin, the

bond between a neighborhood and a school has served a range of other purposes over time. In the best circumstances, school zone boundaries have defined communities and brought neighbors together in the schoolhouse to advance common interests, provide each other with resources, and support schools' primary mission of preparing youth for adulthood. In the worst circumstances, school zone boundaries have been used to keep populations out of a school based on race or class, concentrate advantages for the children of adults in positions of power, and perpetuate a society based on classism and racism. Given the fact that school zone boundaries have been used to advance just and unjust goals, reformers are right to question the role of school zones going forward.

School choice advocates often begin with the claim that school zoning practices have trapped disadvantaged children in failing schools. They move from this claim to the contention that bureaucracies and what they see as the deficient work of teachers and staff in neighborhood schools are at fault. These reformers make an illogical jump from the claim that zoning practices are the root of the problem to the solution of replacing neighborhood schools with a different school model that serves the same children in the identical location. Remarkably, many of the schools of choice that are offered as alternatives to neighborhood schools are placed in the same buildings as neighborhood schools. In effect, these reformers are removing the school zone construct without addressing any real problems associated with the school zone construct. If research demonstrated that the pedagogical practices and management structures found in charter schools eliminated educational inequalities, there is no reason why this form of schooling could not take place within the existing school zone construct. It seems that school choice

advocates, by seeking to eliminate school zones without understanding their function, have fallen into the trap of Chesterton's "modern type of reformer."

As the literature review in Chapter Two and the segregation analysis in Chapter Four have shown, school zone boundaries fail children when they segregate students by race and class and concentrate disadvantage. If school choice advocates developed a model that addressed this real problem of the school zone construct, perhaps society would be best served by severing the school-neighborhood bond. However, this study's segregation analysis shows that elementary schools of choice are more segregated than neighborhood schools. Not only are school choice advocates in New York City destroying the school-neighborhood bond without regard to its function, but they are also deepening the problem of school segregation.

A small number of school choice advocates do focus on the problem of school segregation and argue that thoughtfully severing the bond between neighborhood and school could help desegregate schools. Chapter Two discussed examples of controlled interdistrict and intradistrict choice in Hartford, Connecticut and Wake County, North Carolina. In both cases, the school-neighborhood bond was broken in an effort to integrate schools and raise student achievement. Evidence from these two cases suggests that controlled choice can have positive results. However, advocates of controlled choice have not fully satisfied Chesterton's demand that reformers understand the function of the school-neighborhood bond before seeking to destroy it. While advocates of controlled choice have demonstrated that the school-neighborhood bond can lead to school segregation, they have failed to identify and analyze the way that school zones can define communities and bring people together to work towards common goals.

The literature review provides strong historical and anecdotal evidence of the utility of the school-neighborhood bond. When a community nurtures the relationship between these two institutions, students and neighborhood residents appear to benefit. John Dewey's argument in *The School as Social Centre*, accounts of the positive outcomes of community schools in the early twentieth century, and evidence from contemporary Promise Neighborhoods indicate that strengthening the relationship between schools and communities advances the needs of society. In addition to these examples, the growing body of research on neighborhood collective efficacy offers empirical evidence of the social benefits of strong communities. Finally, this study's analysis of the impact of collective efficacy in elementary school zones on educational outcomes at neighborhood schools provides new evidence of the utility of the school-neighborhood bond. While more research is needed to deepen our understanding of the value of the school-neighborhood bond and of strategies for maximizing its value, this study demonstrates that severing the school-neighborhood bond eliminates a clear pathway to improving schools and communities.

Despite strong indications that the school-neighborhood bond has utility, there is even stronger evidence that school segregation is crippling certain groups of students. When Chesterton conservatively argued that people should not eliminate social structures until their historical functions are fully understood, he failed to consider the complexity of the world and the fact that some structures may have benefits under certain conditions and drawbacks under others. Perhaps controlled choice advocates' should dismantle the school-neighborhood bond in an effort to advance desegregation even though this



structure has utility. The following section offers a brief analysis of data on segregation and collective efficacy in an attempt to offer some insight into this matter.

### **The Relationship Between School Segregation and Neighborhood Collective Efficacy**

A chi-square test of independence showed that the relationship between school segregation and neighborhood collective efficacy is significant,  $\chi^2 (3, N=552) = 53.84$ ,  $p < .001$ . Figure 14, Figure 15, and Map 21 illustrate this relationship in greater detail. Figure 14 shows that 68% of neighborhood schools in elementary school zones with low levels of collective efficacy are intensely segregated, while multiracial schools make up only 26% of neighborhood schools in low collective efficacy areas. Conversely, almost half of neighborhood schools in elementary school zones with high collective efficacy are multiracial, while only a quarter of neighborhood schools in elementary school zones with high collective efficacy are intensely segregated. Figure 15 shows that only 11% of intensely segregated neighborhood schools are in high collective efficacy elementary school zones. A much higher proportion (37%) of multiracial neighborhood schools are in high collective efficacy elementary school zones.

Map 21 shows elementary school zones by levels of school segregation and neighborhood collective efficacy. There are seventy-two elementary school zones with high neighborhood collective efficacy and a multiracial neighborhood school; 0% are in the Bronx, 39% are in Brooklyn, 4% are in Manhattan, 40% are in Queens, and 17% are in Staten Island. A different perspective reveals that 0% of elementary school zones in the Bronx have high neighborhood collective efficacy and a multiracial school, 13% of elementary school zones in Brooklyn have high neighborhood collective efficacy and a multiracial school, 4% of elementary school zones in Manhattan have high neighborhood

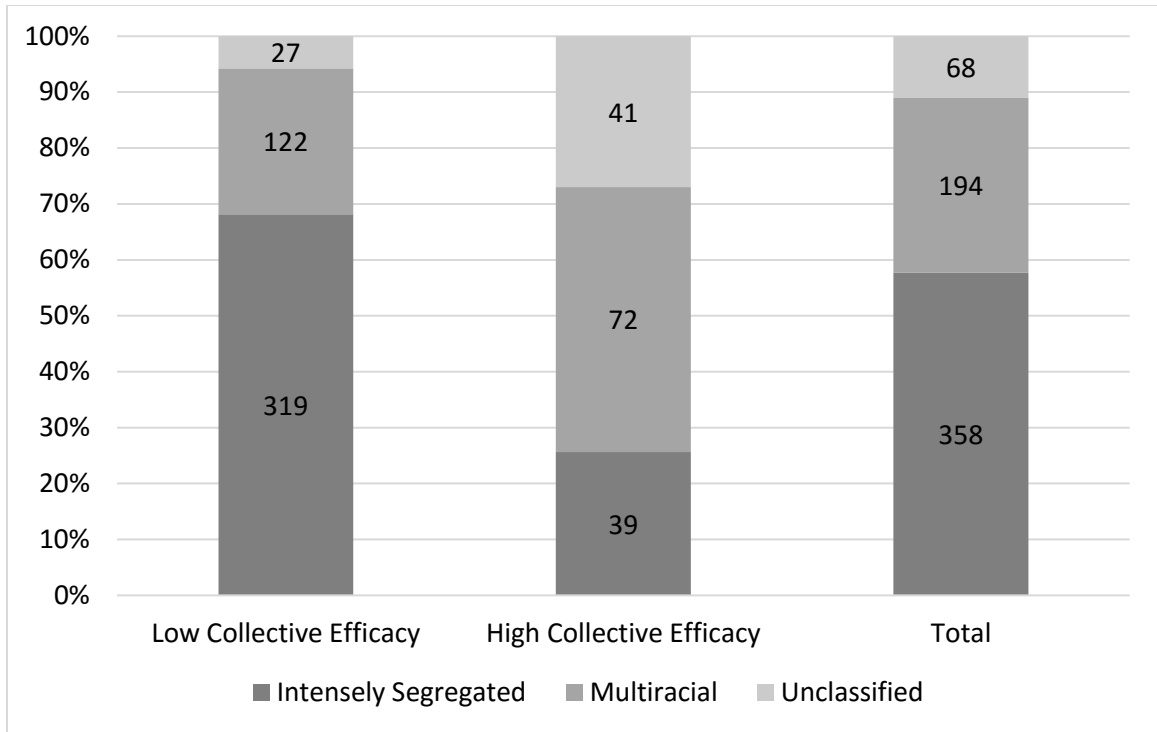


Figure 14: School Segregation by Level of Elementary School Zone Collective Efficacy

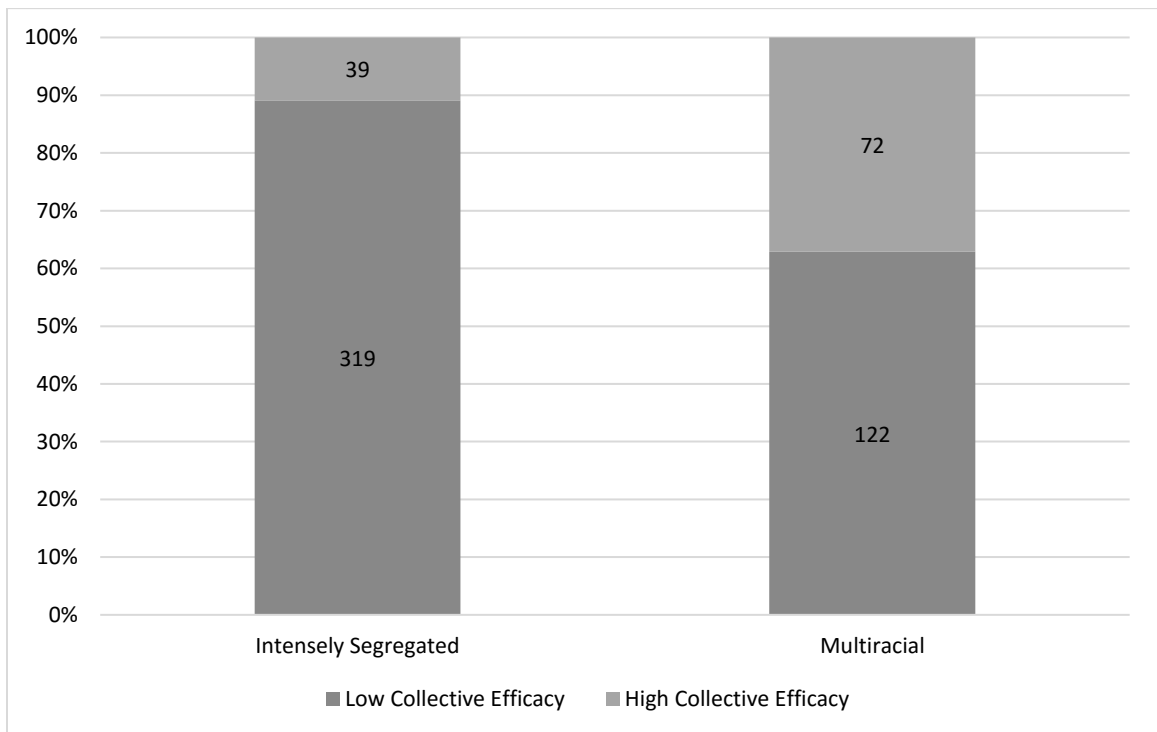
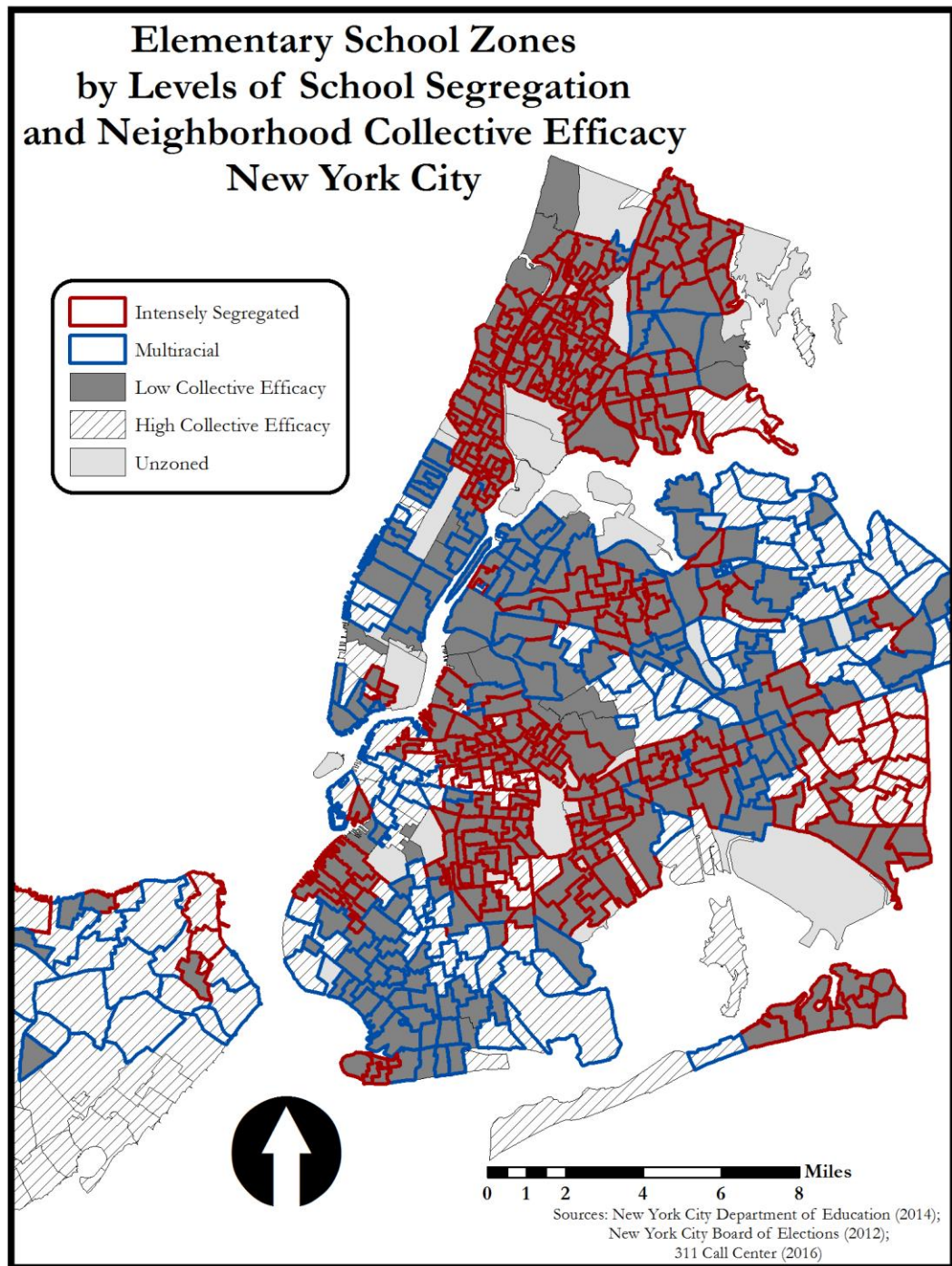


Figure 15: Elementary School Zone Collective Efficacy by Level of School Segregation



*Map 21: Elementary School Zones by Levels of School Segregation and Neighborhood Collective Efficacy*

collective efficacy and a multiracial school, 16% of elementary school zones in Queens have high neighborhood collective efficacy and a multiracial school, and 29% of elementary school zones in Staten Island have high neighborhood collective efficacy and a multiracial school. Given prior analyses in Chapter Four and Chapter Five, it is unsurprising that a majority of elementary school zones with high neighborhood collective efficacy and a multiracial school are located in the less densely populated outer boroughs of New York City

The significant correlation between school diversity and high neighborhood collective efficacy indicates that the school zone construct permits the coexistence of integration and community strength. In light of evidence of the utility of school zone boundaries and the positive association of diversity and high collective efficacy, society should seek reforms that address the problem of school segregation without severing the school-neighborhood bond.

There are a number of existing reforms that integrate schools without eliminating the school zone construct. First, efforts to integrate residential areas produce desegregated schools. Evidence from the Gautreaux Project and the Moving to Opportunity Program demonstrate the effectiveness of housing policies that integrate neighborhoods by race and class. Local, state, and federal agencies should pursue policies requiring a dramatic increase in affordable housing in previously unaffordable neighborhoods. Additionally, government agencies should increase programs that stabilize housing costs in gentrifying areas so that people are not priced-out of their homes in these neighborhoods. These are just a sample of housing policies that governments should adopt in an effort to integrate neighborhoods. Policies that integrate residential areas have the twin benefits of

diversifying neighborhoods and schools, whereas policies that simply target school segregation only diversify schools.

While society must pursue the long-term goal of integrating communities, neighborhood desegregation requires the relocation of households and takes more time and resources than simply transporting children to different schools in an effort to integrate educational spaces. Along with working towards residential integration, more immediate steps should be taken to integrate schools. This study argues that the proliferation of school choice models is counterproductive; however, schools of choice are now embedded into our system and are unlikely to be dismantled. Given this reality, the government should require schools of choice to control for segregation. Controlled choice advocates have shown that their approach encourages integration and benefits all children.

Another model that promotes school integration pairs demographically dissimilar neighborhoods and transports children between these areas to desegregate schools. In this model, children from both neighborhoods are divided into two groups. Children in Group A from the first neighborhood travel to the second neighborhood for elementary school, while children in Group B from the first neighborhood stay in the local school during this period. Simultaneously, children in Group A from the second neighborhood travel to the first neighborhood for elementary school, while children in Group B from the second neighborhood stay in the local school during this period. These groups switch localities for middle school so that the burden of travel is equally split between all people. There are clear drawbacks to this model, but it promotes integration while maintaining the school-neighborhood bond to some degree.

In an ideal scenario, all children would attend high-quality, diverse schools in close proximity to their homes. Until residential demographic patterns make this possible, other interventions are required. GIS technologies offer new opportunities for aiding efforts to assign children to diverse schools without severing the bond between neighborhood and school. New York City, for example, could commit to redrawing all school zone boundaries on a semi-regular basis. Each time that school zone boundaries are redrawn, the city could use a set of rules to scientifically generate new school zones.<sup>40</sup> These rules could include requirements that demand contiguity, minimize travel distance, and maximize demographic balance. Given demographic patterns, rules concerning contiguity and travel distance would continue to limit diversity; however, such an approach would be a dramatic improvement from the relatively static school zoning system that exists today. Furthermore, eliminating assumptions that a home will be perpetually linked to a school could reshape housing markets in way that shifts pricing and aids in neighborhood diversification.

There are no simple solutions to the problem of school segregation or neighborhood segregation. Reformers have been fighting to resolve this problem for decades and have achieved little success. Prior efforts to address school segregation demonstrate that the problem requires a large-scale commitment that strategically dismantles discriminatory structures as well as both racist and classist mindsets. This study suggests that as society works towards the goal of integration, it should leverage the school-neighborhood bond rather than dismantle it. Perhaps controlled choice

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<sup>40</sup> Some scholars have begun to use a similar method to address gerrymandering and reshape voting districts. In particular, they have created a measure of compactness and an algorithm that seeks to scientifically draw an electoral map that is fair (Najmabadi, 2017).

advocates are correct to seek a separation of school and neighborhood in the short-term, but the ultimate goal should be to build diverse communities that can come together to work towards the common good within school zone boundaries.

### **Limitations and Future Research**

Because the analyses in Chapter Four and Chapter Five are distinct bodies of work, they each contain their own discussions of limitations and implications for future research. However, there is also a need to note some limitations of this study's overarching investigation into the utility of school attendance boundaries as well as to describe its implications for future research.

First, the use of New York City as a case study limits the generalizability of this work. The New York City DOE serves nearly twice as many students as the next largest school district in the country and the day-to-day experiences of New York City residents, while varied, are distinct from those of people who live elsewhere. Despite the unique qualities of New York City, its struggle with segregation, its use of school choice models, and its population are similar enough to those found in other parts of the country to be able to extend this study's findings beyond the city limits. Still, as with all case study research, caution should be exercised when generalizing beyond the case site.

Perhaps the most significant limitation of this study is its inability to assess the lived experience in schools with varying levels of segregation and in neighborhoods with different amounts of collective efficacy. While the study did not seek to accomplish such a task, the research reveals a need to do so. Prior scholarship offers deep insight into the experience of attending segregated and integrated schools, but researchers have yet to

consider a range of issues relating to life in areas with high and low collective efficacy. Furthermore, little is known about how segregation and integration affects neighbors' efforts to work towards the common good in their communities and local schools.

This study reveals an immediate need for four new studies in addition to the future research described in chapters four and five. First, a qualitative study should consider the ways in which neighborhood collective efficacy and school segregation intersect. Such a study should investigate elementary school zones and schools that fall into the following categories: (1) high neighborhood collective efficacy and high levels of diversity, (2) low levels of neighborhood collective efficacy and high levels of diversity, (3) low levels of neighborhood collective efficacy and low levels of diversity, and (4) high neighborhood collective efficacy and low levels of diversity. Categories three and four should each contain multiple study sites with varying demographics (e.g. a predominantly Asian population, a predominantly black population, etc.). One goal of this qualitative study should be to consider causes for the varying levels of collective efficacy and the ways in which segregation and integration shape collective efficacy in these spaces. Another goal of this research should be to understand how collective efficacy at the neighborhood-level can affect the work that takes place in neighborhood schools.

A second piece of future research should look more closely at schools of choice to understand the effects of severing the school-neighborhood bond. The research presented here has focused on spaces where the school-neighborhood bond remains intact. Understanding how eliminating the bond affects students and community members would offer a useful perspective. Such research may indicate that severing the bond between



schools and neighborhoods is beneficial under certain circumstances and harmful under other conditions. Research is needed to consider this matter.

Third, GIS tools allow for a more sophisticated analysis of the models presented in this dissertation. In a future study, a cluster analysis of communal 311 calls will be analyzed to deepen our understanding of patterns explored in this study. Additionally, new tools in ArcGIS allow for more complex grouping analysis. A future study will explore these new toolsets and evaluate the measures of collective efficacy used in this study from new angles.

Finally, researchers should conduct a geostatistical study that considers different approaches to drawing school zones. The goal of such a study would be to determine the degree to which a new set of boundaries could integrate schools. Such a study could establish different sets of rules relating to neighborhood contiguity, travel distance between home and school, and demographics. After establishing multiple sets of rules, researchers could build an algorithm that generates new school zones based on the established rules and test the varying levels of integration associated with each set of rules. The result of such a study could reshape school zoning practices and aid in school integration efforts.

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