The relationship between neighborhood racial concentration and verbal ability: An investigation using the institutional resources model

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Abstract

Relatively few studies examine the relationship between racial residential segregation and educational or cognitive outcomes. Using data from the National Longitudinal Study of Adolescent Health and the institutional resources model of neighborhood effects, I investigate one account of how macrostructural arrangements between race, neighborhood segregation, and school quality interact to produce inequalities in test scores. Consistent with the institutional resources model, results suggest that school quality varies across neighborhoods based, in part, on their degree of racial concentration. Indeed, school quality and other school characteristics mediate the relationship between racial concentration and verbal skills, particularly among black males. These findings have implications not only for inequalities in cognitive skills among blacks across residential space, but also between blacks and whites given high levels of residential segregation in the United States. In sum, findings illustrate yet another way in which residential segregation contributes to, and not merely reflects, racial inequalities.

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1. Introduction

A broad sociological literature has developed around the causes and consequences of the separation of race and ethnic groups in residential space. Traditionally, sociology has been concerned with the association between a race or ethnic group’s socioeconomic status and its degree of segregation from whites (Park, 1952; Massey and Mullan, 1984; Massey and Denton, 1985). However, of growing concern is whether residential segregation has important consequences for the well-being of individuals, particularly for minority-group members. This question serves as an extension of sociology’s interest in the degree and form of residential segregation because it seeks to understand whether differences in residential location translate into racial inequalities in other spheres of social organization.

Although myriad studies have identified residential segregation as a culprit in the exacerbation of racial inequality in the United States, relatively few have systematically analyzed its relationship to educational or cognitive outcomes. This gap in our knowledge is regrettable for many reasons, the most obvious of which are the longstanding education gaps between blacks and whites (Jencks and Phillips, 1998), coupled with the fact that educational attainment is an important means by which racial inequalities in a host of other areas can be reduced. In this paper, I utilize the neighborhood institutional resources model to investigate the cognitive and learning consequences of residential segregation. I do so by testing whether
school characteristics mediate between neighborhood composition and cognitive skills, in particular, verbal ability. I argue that segregation differentially affects the outcomes of black and white children indirectly via the quality of the schools that serve minority neighborhoods compared to those that serve predominantly white communities. That is, variation in school characteristics, including their quality, across predominantly black and white neighborhoods is a mechanism through which segregation works to contribute to racial inequalities in skills, with implications for inequality in education.

I draw on the collective insights of three literatures for support for this argument. One, I use the residential segregation literature to describe how sorting by race across residential space shapes the composition and quality of the neighborhoods in which black and white children reside. Second, I draw on the neighborhood effects literature to illustrate how the composition and quality of neighborhoods impact their institutional resources, in this case, the quality of their schools. And third, I rely on the school effects literature that demonstrates the importance of school quality for cognitive and learning outcomes. By analyzing the mechanisms through which neighborhood segregation may affect such outcomes, I seek to contribute to a body of research on the ways in which the social contexts of neighborhoods and schools work together, interactively, to differentially shape outcomes for advantaged and disadvantaged groups, in this case, for blacks and whites.

Below, I trace a theoretical and empirical path from residential segregation to neighborhood conditions, then from neighborhood conditions to institutional resources, with potential implications for racial inequality in cognitive and learning outcomes. Along the way, I review prior studies that investigate the relationship between neighborhood segregation and individual-level educational outcomes that pay particular attention to the role that schools may play in that relationship. I then formulate hypotheses informed by the institutional resources model regarding the ways in which race, residential segregation, and school quality jointly contribute to black–white gaps in cognitive outcomes, and describe an analytical framework for testing them.

### 1.1. The neighborhood institutional resources model

Among the mechanisms through which neighborhoods impact children identified in the literature (see Jencks and Mayer [1990] and Ellen et al. [1997]), institutional resources are of particular interest here. Jencks and Mayer argue that neighborhoods influence children’s outcomes through the quality of the social institutions that exist within neighborhoods, a proposition advanced by Wilson [1987, 1996], Connell and Halpern-Felsher [1997] and others. Neighborhood institutions are affected by neighborhood residents and nonresidents alike. Residents structure the quality of institutions as a function of their ability to secure high-quality services. At the same time, neighborhood institutions are shaped by nonresidents who hold positions of authority and who make decisions about the allocation of resources across neighborhoods (Hirsch, 1983), as well as residents in other neighborhoods who compete for them. Thus, to understand the impact of neighborhoods, we must take assessment of both their population composition and the resources that exist within them.

Despite the theoretical appeal of the institutional resources model—that social institutions bridge the space between neighborhoods and the individuals who live within them—there is relatively little empirical support for it (Leventhal and Brooks-Gunn, 2000). That is, few studies demonstrate that institutional resources mediate between neighborhood context and individual outcomes (Duncan, 1994). Nevertheless, Leventhal and Brooks-Gunn (2000) suggest it is the best model for investigating neighborhood effects on educational outcomes in general, and I argue it is the best model for understanding the effects of neighborhood racial concentration on such outcomes in particular. That is, schools, as social institutions, may serve as transmitters of neighborhood advantage and disadvantage—advantage that residential segregation concentrates in the neighborhoods of whites and disadvantage that it builds into the neighborhoods of blacks (Massey and Denton, 1993).

Support for this possibility comes from work on the extent of segregation between blacks and whites and the relationship between segregation and neighborhood conditions. In 2009, the average level of segregation in US metropolitan areas as measured by the index of dissimilarity was 0.63 (Logan and Stultz, 2010), indicating a high degree of segregation in the country despite declines over previous decades (Farley and Frey, 1994). By concentrating race in neighborhoods, segregation concentrates all of the advantages and disadvantages associated with race in the United States. Black and white neighborhoods, then, become differentially shaped by social problems given the existence of racial inequality in such areas as earnings (Grodsky and Pager, 2001), wealth (Oliver and Shapiro, 1995; Conley, 1999), poverty (DeNavas-Walt et al., 2009), and crime and incarceration (Shihadeh and Flynn, 1996; Western, 2006). Moreover, by both contributing to and concentrating unemployment and joblessness in black neighborhoods (Mouw, 2000; Wilson, 1996), segregation also contributes to the concentration of poverty in black communities (Massey et al., 1991). Consequently, blacks and whites reside in vastly different residential contexts.

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[1] Cognitive abilities include verbal comprehension as well as a number of other specific skills, such as general reasoning, for example (see Guilford, 1959). All references to cognitive skills or abilities herein are intended to denote the specific cognitive ability of verbal comprehension.

[2] The term “social institution” refers to “the structural components of a society through which all the main concerns and activities are organized, and social needs . . . are met” (Marshall, 1998, pp. 317–318). Schools and grocery stores, then, are examples of social institutions in that they comprise clear social roles (i.e., students, teachers, clerks, shoppers) and behaviors (learning, teaching, selling, buying) that operate together to meet important societal needs (i.e., distribution of knowledge, socialization, distribution of food) (see also Theodorson and Theodorson, 1969, p. 206). Other entities that are readily found in neighborhoods but that do not meet important social needs (e.g., coffee shops, bars, movie theaters) fall outside the concept of social institution.

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