

SCHOOL INTEGRATION MATTERS

Research-Based Strategies
to Advance Equity

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TEACHERS COLLEGE PRESS
TEACHERS COLLEGE | COLUMBIA UNIVERSITY
NEW YORK AND LONDON

Residential Segregation and Brain Development

Implications for Equitable Educational Opportunities

Michael Hilton

Housing and education are often treated as separate realms of public policy. Consequently, the fundamental nexus between housing and education is often overlooked when defining policy objectives and implementation mechanisms. Such oversight can result in ineffective responses to problems that could otherwise be resolved through a more flexible or holistic approach. The failure of school desegregation policies provides an excellent illustration of this point.

For decades, government authorities have expressed a strong rhetorical commitment to school desegregation, and have undertaken a variety of approaches to promote racial and socioeconomic desegregation in schools. Despite these efforts, school segregation has climbed to levels not seen since the early 1970s (Rothstein, 2013a). The key problem with most of these desegregation policies is their focus on reform *within* public school systems to achieve their goals, overlooking a major contributor to school segregation: housing segregation. Research illustrates a reciprocal relationship between housing and school segregation, finding public schools usually mirror neighborhood demographics since students are typically assigned to schools based on residence (Burgess & Briggs, 2010).

This chapter draws on neuroscience research to examine the effects of concentrated poverty on development. Findings reveal that a student's physical and social environment plays a fundamental role in shaping her or his ability to learn and otherwise benefit from educational services, suggesting that there is an important connection between residential segregation and educational opportunity. As such, interventions like integration in housing could be key in expanding educational opportunity.

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SANCTIONED HOUSING SEGREGATION

The effectiveness of public education depends on the quality of both educational services and educational *opportunities*. For the purposes of this chapter, educational services include resources supplied by public education—facilities, curricula, textbooks, computers, and other learning tools. Although educational opportunity is frequently defined in terms of the quality of such services, additional factors impact students' opportunity to benefit from public schools. Supreme Court jurisprudence recognizes educational opportunities consist of more than simply the "tangible" services provided within a public education system (*Brown v. Board of Education*, 1954). Educational opportunities are determined by a combination of tangible educational services and access to various forms of human and social capital, such as a stable learning environment with qualified, experienced teachers, low teacher turnover, and a group of peers with a wide range of social, economic, and cultural backgrounds.

That schools remain highly segregated 60 years after *Brown* suggests that overt discrimination is not the primary cause of school segregation today, nor is it the chief deterrent to a meaningful education opportunity. Rather, both school diversity and educational opportunities are shaped by external factors, many relating to the socioeconomic status (SES) of communities in which students are located. Housing segregation has a direct impact on school segregation and the nature of educational opportunities in certain communities. Federal, state, and local authorities have facilitated the segregation of communities and schools through affirmative actions (such as when public housing is sited in existing low-income communities, or when suburbs secede from regional school districts to form smaller wealthy districts) and enforcement failures (such as the failure of the U.S. Department of Housing and Urban Development to affirmatively further fair housing). Federal courts recognize that unconstitutional governmental action can be found in the discriminatory application of laws neutral on their face (*Yick Wo v. Hopkins*, 1886) and recognize that discriminatory application of the law by government agents is attributable to the government, even if those actions are legal (*United States v. Price*, 1966). Using these standards, governments should be held responsible for actions executed under color of law resulting in residential segregation, which leads to school segregation because most students attend neighborhood schools.

Richard Rothstein (2013b, p. 174) has made a compelling case that "current residential patterns of racial isolation are unconstitutional products of state action." According to Rothstein, governmental responsibility for ongoing housing segregation is clear when policies related to mortgage lending, public housing construction, highway routing, police practices, and

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easy to conclude that African Americans' failure to achieve equality is attributable either to mysterious demographic and economic forces or to their own choices to self-segregate, perhaps abetted by white private citizens operating entirely independent of the governments they controlled. (Rothstein, 2013b, p. 178)

This failure of public memory leads to the erroneous assumption that African American families prefer to live in primarily African American neighborhoods, when in fact recent research has found African American families hold a preference for integrated neighborhoods (Krysan, Couper, Farley, & Forman, 2009).

Rothstein (2013b) examines racial zoning laws, and their continued enforcement after being declared unconstitutional by the Supreme Court, noting communities even today achieve racial uniformity through zoning ordinances related to minimum acreage, square footage, and multiunit structures. He also evaluates restrictive racial covenants, which were upheld as constitutional in 1926 (*Corrigan v. Buckley*, 1926) and were promoted by the federal government through the Federal Housing Administration (FHA), resulting in public housing authorities continuing the development of intensely segregated public housing communities throughout the 20th century. After the end of World War II, the Veterans Administration's adoption of FHA redlining practices restricted the benefits of the GI Bill to White homebuyers, further contributing to residential segregation (Rothstein, 2013b). The FHA's redlining policies concentrated Black families in specific housing tracts and contributed to draining the economic resources of middle-class Black families and neighborhood deterioration (Rothstein, 2013b). Discriminatory lending practices continue today; evidence of predatory lending in minority communities was discovered in the wake of the 2008 financial crisis (Rothstein, 2013b).

While the federal government has, to a degree, admitted its role in facilitating residential segregation, it has not done enough to combat the continuing effects of prior segregative policies and continues funding public housing authorities that perpetuate segregated housing conditions. Government-sanctioned segregation in housing has led to the formation of pockets of deep poverty and persistent disadvantage; Patrick Sharkey's (2009) work examines urban African American communities in the decades following the expansion of civil rights in the 1960s and describes a system of intergenerational poverty, residential segregation, and resource deprivation almost unknown among White communities.

NEUROSCIENTIFIC PERSPECTIVES ON SEGREGATION

The hardships imposed by residential segregation assume a greater order of magnitude when one considers that research on brain development indicates that living in an area of concentrated poverty may alter the architecture of the developing brain (Lipina & Colombo, 2009; McEwen & Gianaros, 2010). Findings from this area of research suggest that government-sanctioned residential segregation results in unreasonable obstacles to advancement on the basis of individual merit—a constitutional wrong.

A growing volume of neurocognitive and neuroimaging research explores the relationship between SES and brain development (Lipina & Colombo, 2009; McEwen & Gianaros, 2010; Noble, Norman, & Farah, 2005), revealing that “growing up in a family with low SES is associated with . . . impaired cognitive and emotional development” (Hackman, Farah, & Meaney, 2010, p. 651). The reason, of course, is not because of the parents or the child but because environmental conditions associated with poverty and stress have an impact on brain development. Indeed, this emerging neuroimaging research should not be interpreted as deterministic, and researchers are concerned that, although their research findings may support more targeted, effective interventions to facilitate the cognitive development of children living in poverty, it may also be used to rationalize the status quo or blame the victim (Hackman & Farah, 2008). In fact, many researchers warn against the interpretation of biological differences related to SES as essential or immutable, emphasizing that there is little evidence for such a claim (Hackman & Farah, 2008).

One of the key issues that neuroscientists focus on is the effect of stress on the developing brain, as the capacity for changes in neural pathways of the developing brain makes it particularly sensitive to chemical influences (Shonkoff & Garner, 2012). With respect to the relationship between stress and development, children inhabiting areas of concentrated poverty are more likely to experience significantly high levels of stress and exhibit higher levels of cortisol, a marker of stress, than children from higher socioeconomic backgrounds (Blair & Raver, 2012; Lupien, King, Meaney, & McEwen, 2001; McEwen & Gianaros, 2010). Such chronic stress that results in persistently elevated levels of stress hormones can disrupt the developing architecture of the brain: “Exposure to stressful experiences has been shown to alter the size and neuronal architecture of [the brain and] lead to functional differences in learning, memory, and aspects of executive functioning” (Shonkoff & Garner, 2012, p. e236).

In particular, Shonkoff and Garner’s (2012) work suggests that chronic stress affects the capacity of the hippocampus to regulate cortisol production, which leads to impairments in memory and mood-related functions and inhibits the generation of new neurons believed to play a crucial role in memory. The impact of chronic stress on the hippocampus can also limit

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Assume a greater order brain development integrity may alter the architecture (Boydell, 2009; McEwen & Casper, 2009). Research suggests that government-imposed obstacles to educational and constitutional rights, such as the "separate but equal" doctrine, are a constitutional wrong. Neuroimaging research shows that brain development is affected by environmental factors (Lipina & Casper, 2009; Norman, & Farah, 2008). Low SES is associated with "poor cognitive development" (Hackman, Farah, & Meaney, 2005), not because of the parents associated with poverty. Indeed, this emerging research is deterministic, and research findings may support the idea that cognitive development is determined by the status quo. In fact, many researchers have found correlations related to SES as little evidence for such a

connection is the effect of stress on neural pathways. Research is sensitive to chemical influences on the relationship between the environment and the brain. Levels of stress and exhibit in children from higher socioeconomic status (Meaney, King, Meaney, & Casper, 2005) show that chronic stress that reduces cognitive development can disrupt the development of the brain. Research on the effects of stress on the brain has been extensive and lead to research on the effects of stress on the brain and its effects on executive functions.

Research suggests that chronic stress can regulate cortisol production and mood-related functions. Research has shown that stress can play a crucial role in brain development. Research on the hippocampus can also limit

contextual learning and make it difficult for children to distinguish between safety and danger, an effect similar to posttraumatic stress disorder. Thus, chronic stress can at least partially explain the negative relationship between early stressful experiences and linguistic, cognitive, and social-emotional development.

Chronic stress may also have an effect on the expression of genes. Living in a high-poverty neighborhood is correlated with the increased expression of genes related to the adrenaline system, and the decreased expression of genes related to the regulation of a grouping of organs key in controlling reactions to stress, as well as regulating digestion, the immune system, mood and emotions, and energy storage and expenditure (Blair & Raver, 2012). While developmental adaptations like hypervigilance to environmental clues and altered hypothalamic-pituitary-adrenal axis may facilitate "more rapid learning and response to conditions of threat" in unpredictable environments, such responses may cause difficulty in social settings like classrooms (Blair & Raver 2012, p. 313). Importantly, researchers in this area generally agree that "environments and experiences of childhood in different socioeconomic strata are at least in part responsible for different neurocognitive outcomes for these children" (Hackman & Farah, 2008, p. 71), and such changes in neuronal circuitry are reversible in a healthy, resilient brain (McEwen, 2011). Indeed, because the brain is malleable these findings suggest that housing integration policy may be one important way to reverse the effects of living in concentrated poverty on developing children. As noted previously, the effects of stress and other environmental conditions related to concentrated poverty should not be interpreted as deterministic of a child's future. Just the opposite, what the research suggests is that interventions like housing integration could be key to reversing changes and improving educational opportunity.

LEGAL OBLIGATIONS AND COMMITMENTS: EQUAL PROTECTION, EDUCATIONAL OPPORTUNITY, AND SCHOOL DESEGREGATION

Although there is not an established federal right to an education, the federal government has the means and authority to assume a significant role in education policy, especially with regard to encouraging integrated learning environments for all students. Examples of federal support for school desegregation can be seen in the enactment and ongoing enforcement of Title VI of the Civil Rights Act of 1964, which prohibits discrimination based on race, color, or national origin in programs or activities that receive federal financial assistance, as well as the implementation of the Magnet Schools Assistance Program, which administers grants for the operation of magnet schools in conjunction with an approved desegregation plan. Taking into account a combination of case law, federal statutory text, agency action,

and international treaties, it is possible to craft a compelling argument for federal action designed to increase integration in public schools (Tegeler, 2014).

Case Law

The Supreme Court was the first branch of the federal government to acknowledge the importance of an integrated education for primary and secondary public school students. In *Brown v. Board of Education* (1954), the Court produced a unanimous decision, declaring that the principles of separate but equal were unconstitutional and that education must be available to all on equal terms. In supporting their determination, the Court quoted with approval a lower court's finding that segregation has a detrimental impact on minority children and that the negative effects of segregation are greater when they have "the sanction of the law" (*Brown*, 1954, p. 494). *The sanction of the law* is a key phrase, with sanction meaning "official permission or approval" (www.merriam-webster.com). Thus, the Court's statement applies not only to segregation created and enforced by law but to segregation permitted by law—there is no need for the law to create or enforce segregation in order to sanction it; the law must only uphold the structures or principles resulting in segregation. Through this reading, *Brown's* application is extended to situations where educational segregation results from the neutral application of the law, requiring not only the dismantling of state-imposed educational segregation, but the dismantling of laws and social structures permitting educational segregation to exist as well.

The federal interest in pushing beyond the mere abolition of state-imposed segregation is evident in *Lau v. Nichols* (1974). The Court observed that because non-English-speaking students in California public schools received fewer benefits than English-speaking students, the non-English-speakers were denied "a meaningful opportunity to participate in the educational program" (*Lau*, 1974, p. 568). Relying on Section 601 of the Civil Rights Act of 1964, the Court established that equal inputs such as facilities, textbooks, teachers, and curriculum are not equitable if a subset of students lacks the capacity to utilize available resources.

In *Plyler v. Doe* (1982) the Court acknowledged the role of schools in maintaining what we think of as American society, and the importance of schools as a place where societal values and skills are imparted unto youth. The Court further emphasized the importance of public schools as a place where minority groups have the opportunity to overcome stereotypes and cultural biases held by the majority. The Court also recognized that the "denial of education to some isolated group of children poses an affront to one of the goals of the Equal Protection Clause: the abolition of governmental

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barriers presenting unreasonable obstacles to advancement on the basis of individual merit" (*Plyler*, 1982, pp. 221–222).

The "education" the Court references must be read as an integrated education; minority students will have little opportunity to absorb the values and skills upon which our society rests or to raise the level of esteem in which they are held by the majority if they are educated in racial, cultural, and social isolation (Orfield, Kucsera, & Siegel-Hawley, 2012). An isolated education denies minority students access to the primary method of obtaining majoritarian skills and values, as well the opportunity to earn the esteem of the majority group, and, like the alterations in brain development previously discussed, is a clear barrier presenting unreasonable obstacles to advancement on the basis of individual merit (Hoxby & Avery, 2013). Thus, after *Plyler* the Equal Protection Clause can be understood to require the abolition of segregated schools created and supported by governmental entities.

Finally, while the Constitution requires the elimination of segregation in public schools, it also prohibits the explicit consideration of race in individual student assignment in districts where segregation was never explicitly imposed by the state, which is the holding of Chief Justice Roberts's majority opinion in *Parents Involved in Community Schools v. Seattle School District No. 1* (2007). However, a different majority of the Court led by Justice Kennedy found that the avoidance of racial isolation and promotion of student diversity are compelling government interests and that the use of some race-conscious measures to meet these goals is permissible under the 14th Amendment (*PICS*, 2007). Overall, the Court's treatment of public education suggests a strong constitutional interest in the elimination of racial isolation and the creation of integrated, equitable public schools.

Statutes, Treaties, and Guidance

In addition to the constitutional interest in equitable and diverse public schools, there are sources of legal authority arising from federal statutes, international treaties, and agency-level actions expressing a strong federal interest in education. Civil rights advocate Philip Tegeler (2014) identifies and details several such sources of legal authority that should enable the executive to actively promote integrated schools at the state and local level with no additional input from the legislative branch. Tegeler finds support for executive action to integrate schools in Title VI of the Civil Rights Act of 1964, discussed above, the Elementary and Secondary Education Act (ESEA), the Department of Education Organization Act and accompanying Senate Report, Department of Education priorities and guidance, and the International Convention on the Elimination of All Forms of Racial Discrimination (CERD).

According to Tegeler (2014), the original ESEA recognized the importance of integration and tied funding to compliance with requirements in the Civil Rights Act of 1964. The ESEA also contains support for magnet schools and interdistrict transfer programs that encourage integration. The Department of Education Organizing Act of 1979 noted one purpose of the department was “to strengthen the Federal commitment to ensuring access to equal educational opportunity for every individual” (United States Congress, 1979b, p. 3), and the accompanying Senate Report noted that through a combination of “compliance efforts, technical assistance, and financial assistance the Federal government has promoted racial desegregation” (United States Congress, 1979a, p. 13). Furthermore, the Department of Education has included promoting diversity as a priority for competitive grant programs, and has issued multiple “Dear Colleague” letters, as well as guidance concerning the use of race in student assignment after *PICS*, noting a compelling government interest in school diversity. Support for federal action to combat racial isolation and promote school diversity is not limited to domestic policy; CERD “embodies an obligation, both within government programs and in society at large, not only to avoid policies with a discriminatory impact but also to affirmatively take action to address racial disparities in outcomes for people of color” (Tegeler, 2014, p. 1034).

SOLUTIONS

Programs aimed at combating segregation in schools and neighborhoods have seen mixed success since the decision in *Brown* and the subsequent passage of the Civil Rights Act. However, there are promising examples of such efforts; using various techniques, some suburban communities have managed to maintain the quality of their schools while achieving sustained and significant levels of economic and racial diversity. In some communities, governmental intervention in housing policy has resulted in stable levels of residential integration above what an unregulated housing market would be able to achieve. In other areas, communities have drawn together and executed concerted plans to establish and maintain diverse neighborhoods. A federal program could incorporate lessons from these innovations to foster integration in isolated communities and schools.

Inclusive Zoning Practices

Developments in Montgomery County, MD, reveal differences in outcomes between strategies to improve isolated schools versus strategies that result in an integrated school experience. In Schwartz’s (2010) findings, the residential and scholastic integration of low-income students, as a result of inclusive zoning practices, produces better long-term educational results than

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providing low-income students with compensatory resources, despite the fact that Montgomery County Public Schools instituted most of the highly touted reforms emphasized in *Race to the Top*.

Housing Interventions in Transitioning Suburbs

During the late 1960s, Oak Park, IL, faced the threat of racial transition and resegregation. Rather than accept the change as inevitable, the community mobilized against resegregation in several ways: investing in consensus-building for government action; engaging with businesses and religious institutions; bringing in public-relations personnel; quickly addressing issues in housing to avoid overconcentration of poverty and formation of ghetto-like conditions in areas where disinvestment may have occurred; and even offering insurance to maintain housing value (Frankenberg & Orfield, 2012). The Oak Park Housing Center was created to ensure a stable mix of racial and economic diversity among residents, and the community itself actively monitored behavior of real estate agents, even pursuing prosecution and revoking agents' licenses in cases of residential steering (Frankenberg & Orfield, 2012). Oak Park's efforts to establish a diverse community have resulted in sustained integration, including diverse and successful schools (Illinois State Board of Education, 2014).

Suggestions for Federal Policies and Incentives

Integration programs should be tailored to the unique circumstances of each community. To accommodate varied and innovative approaches, the federal government should develop a cooperative federalism framework. Typically this approach consists of "congressional or administrative efforts to induce (but not coerce or commandeer) states to participate in a coordinated federal program" (Fischman, 2005 p. 184). Congress may offer incentives for states to cooperate or "require federal agencies to impose the 'stick' of preemptive federal requirements if states do not regulate as desired" (Fischman, 2005, p. 189). To bypass a gridlocked Congress, the U.S. Department of Education could utilize its existing statutory authority to impose conditions on the receipt of federal education aid or create a competitive funding scheme like *Race to the Top*, which has successfully encouraged states to change educational approaches.

The nationwide program could be structured to provide for a diverse array of state and/or local actions. A housing program targeting areas of concentrated disadvantage and working toward racial and socioeconomic integration could have a significant impact. A change in the residential environment of low-SES, segregated minority students could not only provide a more nurturing, lower-stress environment in which to mature, which could have significant positive impacts on brain development and thus academic

achievement, but also place low-SES students in schools with higher-resource peers, which has also been observed to strongly raise student achievement (Schwartz, 2010). This change could be achieved by preserving diversity in resegregating suburbs or integrating isolated, high-income communities through inclusive zoning.

The program could be implemented on a voluntary basis, with the federal government providing technical assistance or grants for state or local integration programs complying with certain criteria. The division of authority and obligation might resemble the following:

- State/local authorities submit plans to federal agency, outlining steps they will take to promote residential and educational integration and verifying state compliance with monitoring, reporting, and other program requirements.
- Overseeing agency reviews implementation plans to confirm that they comply with all statutory and/or regulatory requirements and that they are likely to achieve specific program goals.
- Grant recipients monitor program implementation and submit periodic reports on progress and outcomes.
- Formal process is established for reviewing outcomes, assessing program design, and improving future programs based on these findings.
- Federal agency collects and disseminates information on effective strategies to state/local authorities, providing them with a valuable form of technical assistance, and facilitates communication and collaboration between current and prospective grant recipients to foster greater learning.

Perhaps the most complicated aspect of such a program would be establishing criteria upon which implementation plans are evaluated for compliance with program requirements and, if support is provided on a competitive basis, the relative merits of different proposals that meet core criteria. It may be useful to integrate specific policy preferences into these criteria—for example, additional credit could be given to projects that focus on communities with a larger proportion of families with young children and new families likely to have children if Congress or the implementing agency determines that these families represent the largest expected return on investment.

CONCLUSION

Economic and racial segregation in housing fostered by federal, state, and local governments, alongside the systematic deprivation of public resources, creates areas of deep disadvantage. The relationship between segregated

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housing and access to an equitable educational opportunity is clear, with brain development research showing residential segregation and racial isolation can result in significant developmental impacts. Residential segregation has also resulted in an increasingly segregated system of public education by race and class and these schools have concentrated disadvantage (Orfield, Kucsera, & Siegel-Hawley 2012). This increasing school segregation is occurring not because school integration wasn't successful but because of "the tacit acceptance of segregation by our educational and political leaders, who cover it with hopeful rhetoric, which has not borne fruit in practice" (Orfield, Kucsera, & Siegel-Hawley 2012, p. 84).

The federal government, due to its role in creating and sustaining segregation in housing, has an obligation to remedy segregation in schools. The federal government has the authority and ability to pursue policies designed to integrate schools, which neuroscience research suggest should be pursued through residential integration. Integrating racially and socioeconomically isolated neighborhoods has the potential to remove barriers to success for poor and minority students at the same time it encourages the formation of diverse, integrated public schools in keeping with ideals articulated in *Brown*.

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