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Book Deserts: The Consequences of Income Segregation on Children's Access to Print

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Abstract

We examine the influence of income segregation on a resource vital to young children's development: a family's access to books in early childhood. Income segregation reflects the growing economic segregation of neighborhoods for people living in privilege (1%) compared with those in poverty or near-poverty (20%). After describing recent demographic shifts, we examine access to print for children in six urban neighborhoods. Results indicate stark disparities in access to print for those living in concentrated poverty. We argue that such neighborhoods constitute "book deserts," which may seriously constrain young children's opportunities to come to school "ready to learn."

Keywords

reading, identity, achievement gap, social, poverty, urban, academic achievement, Urban Education, literacy

Every large city in the United States, whether economically vibrant or withering, has higher and lower income neighborhoods (Jargowsky, 2014). The average socioeconomic status of these neighborhoods, however, varies considerably.

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Some neighborhoods are likely to support resources that promote children's positive growth and development (Duncan & Murnane, 2011); others, in decline, may fuel a cycle of decay that seriously limit or reduce access to resources (Neuman & Celano, 2012). Neighborhoods, in short, can influence the choices people make, the opportunities and institutions they are able to access, and the ways they may be treated by others (Hopson, 2014; also, see special issue of *Urban Education*, 2014).

In the last 40 years, the demographics of these metropolitan areas have shifted, becoming more segregated not solely on the basis of race and ethnicity but by economic circumstances. *Income segregation* (Bischoff & Reardon, 2014), or socioeconomic residential sorting, reflects the extent to which families of different incomes live in different neighborhoods. Because the ability to afford housing in a given neighborhood is generally tied to income, high-income families are likely to live in neighborhoods among other high-income families, and low-income families with other low-income families.

The rapid rise of income segregation (Reardon, 2011), particularly in the last decade, has consequences for young children and their development. Because most young children spend a great deal of time in their neighborhoods, it has the potential to further accentuate the economic advantages of high-income families and exacerbate the economic disadvantages of low-income children. For example, it can lead to disparities in the quality and quantity of crucial resources (Lareau & Goyette, 2014), public amenities such as parks, libraries, and recreation, and influence what schools students are likely to attend and their ability to attract highly skilled teachers. Furthermore, as shown in a number of carefully designed observational studies (Duncan & Brooks-Gunn, 1997; Gottfried, 2014), prolonged residence in very poor neighborhoods is associated with unequal school resources among communities which in turn may lead to inequalities in educational success among high- and low-income children.

In this article, we examine the influence of income segregation on a resource vital to young children's development: a family's access to books in early childhood. Studies have shown that access to print resources—board books, stories, and informational books—early on in a child's development has both an immediate and long-term effect on their vocabulary, background knowledge, and comprehension skills (Allington et al., 2010). In this article, we first focus on how these demographic shifts may affect young children's access to print. We then report on an analysis of access in six neighborhoods across the United States, representing east coast, Midwest, and Western communities. In so doing, we will suggest that neighborhoods of concentrated poverty constitute "book deserts," which may seriously constrain young children's opportunities to come to school "ready to learn."

Background

Changes in the Composition of Neighborhoods in the New Millennium

Demographers have reported that the new millennium has seen a dramatic rise in income inequality and with it, greater socioeconomic residential segregation (Jargowsky, 2014; Massey, 2007). The increasing isolation of wealthier families in neighborhoods of concentrated advantages has only exacerbated the clustering of poor families in neighborhoods with high poverty rates. Today, there are more zones of concentrated poverty than have ever been recorded before, eclipsing what had been the all-time high in 1990 by 14% to 3,764 census tracts (Jargowsky, 2014). In his classic studies, William Julius Wilson (1987, 1997) highlighted the effects of such spatial concentrations of poverty that isolate residents from the resources and networks needed for them to reach their potential. According to these reports and others (Brooks-Gunn, Duncan, & Aber, 1997), it is especially devastating for young children. For example, a recent longitudinal analysis reported that the effects of neighborhood disadvantage during childhood continued to have strong impacts on achievement goals and job aspirations for these children as they moved into adulthood (Sharkey, 2013).

However, there are substantial differences in how poverty is manifested in the new millennium (Reardon, 2011). In contrast to the concentrated poverty of previous generations, there are fewer extreme high-poverty tracts, identified by demographers as those with poverty rates of 60% or more. Neighborhoods that used to be dominated by public housing projects have become somewhat dispersed, leading to slight declines in poverty concentration rates. Nevertheless, the news is not good: The population of high-poverty neighborhoods in the last decade of 40% or more has increased by a troubling 56% (Jargowsky, 2014).

In addition, another dramatic shift in this demographic profile is the growing number of "borderline" neighborhoods—those with poverty rates of 20% to 40% (Jargowsky, 1997). In the last decade, borderline neighborhoods have increased 43% compared with 10% for high-poverty neighborhoods. As a result, there are major increases in the total number of poor people, estimated to have risen since the year 2000 by 26%, and major changes in the number and the distribution of poverty census tracts. These high-poverty neighborhoods continue to be disproportionately composed of members from minority groups, reflecting the continuation of racial and ethnic segregation. At the same time, however, the number of non-Hispanic White people residing in high-poverty neighborhoods has more than doubled in the new millennium,

suggesting that all racial and ethnic groups have been affected by the increases in poverty (Bischoff & Reardon, 2014).

In short, the new millennium has seen a dramatic increase in residential segregation occurring at both ends of the income distribution: Both high- and low-income families have become increasingly residentially isolated, resulting in greater polarization of neighborhoods by income. More of the wealth is concentrated among a smaller and smaller proportion of the population. And in its wake, the rich have left the poor and the near poor to scramble for resources that would have otherwise benefited a larger share of the population.

The Effects of Income Segregation and Limited Resources

These changes in the demographics of income and the growth of residential segregation are likely to have profound consequences for children's school readiness skills (Lareau & Goyette, 2014). Studies have shown that children from households with limited resources enter school at a significant disadvantage (Denton, West, & Waltston, 2003; Hart & Risley, 2003). Lee and Burkam (2002), for example, reported gaps as large as 60% on letter knowledge, sounds, colors, and numbers for kindergarten children coming from economically disadvantaged communities compared with their more middle-class peers.

The challenges that children with economic disadvantages face compared with those that are free from financial constraints are considerable in these early years. A virtual consensus of research (Bus, Van Ijzendoorn, & Pellegrini, 1995; Hoff, 2003) indicates that conversations and hearing stories read aloud play a significant role in preparing children for academic success. Children who are read aloud to at home develop a stronger vocabulary, more background knowledge, better expressive and receptive language abilities, and strong phonological awareness than those children who are not well-read-to (Bowman, Donovan, & Burns, 2000; National Early Literacy Panel, 2008). Relatedly, children from impoverished communities have access to fewer books and other reading materials than do their more financially stable peers. For example, in 2001, we examined access to print in two low-income and two middle-income neighborhoods in a large industrial city and documented stark differences in access to books (Neuman & Celano, 2001). In a community of privilege, large chain bookstores, educational toy stores, and little boutique children's bookshops dotted the landscape. There were about 13 book titles for every one child. On the other hand, in the community of concentrated poverty (80%), the landscape was bare. We found only 33 titles, all of which were coloring book titles, or about one book for every 300 children.

As a recent large-scale survey involving 27 nations with more than 70,000 cases revealed, a book-oriented environment endows children with the tools that are directly useful in learning at school (Evans, Kelley, Sikora, & Treiman, 2010). Even more significantly, the presence of books, according to the authors establishes a "scholarly culture"—a way of life in homes where books are numerous, esteemed, read, and enjoyed—which may have even greater impact on children's futures. According to the most recent Progress in International Reading Literacy Study (PIRLS; Mullis, Martin, Foy, & Drucker, 2012), which surveys 215,000 children across 49 countries, the presence of children books in the home strongly predicts reading achievement, with the average reading achievement difference between students from homes with many children's books (more than 100) and those from homes with few children's books (10 or fewer) being very large (91 score points, almost one standard deviation).

Although digital devices have opened up new opportunities for book reading, there is evidence that access to the Internet is uneven. A recent survey (Rideout & Katz, 2016), for example, found that many low- and moderate-income families remain underconnected, with mobile-only access and inconsistent connectivity. Furthermore, families headed by Hispanic immigrants were less likely to have Internet services because they could not afford it. Although the public library with its rich resources of print and Internet access remains an important staple in many urban communities, this national survey found that only 8% of low-income families reported to have taken advantage of library resources. Even those who were seriously underconnected claimed to use the library only "sometimes."

Consequently, the focus of our study was to examine the current landscape: how high-poverty communities and the new "borderline" neighborhoods in urban areas are faring in providing access to books. In this respect, we hoped to contribute to an understanding of the affordances and constraints of urban intensive environments (Milner, 2012). In these urban areas, out-of-school factors such as housing, poverty, and transportation may either directly or indirectly affect a family's ability to access certain resources. At the same time, all sections of an urban intensive environment are not equal. Certain sections (e.g., borderline) may support a rich array of services, making it easier to access resources. Other sections of an urban intensive environment (e.g., concentrated poverty) might lack the infrastructure to support the necessary resources to the large number of people who need them. Therefore, this study is designed to highlight the variation *within* urban intensive environments and what it might mean for children's opportunity to learn.

In contrast to our previous study which examined neighborhoods in one industrialized city, in this study, we attempted to gather a more national

perspective, selecting metropolitan areas in the Northeast (Washington, D.C.), Midwest (Detroit), an area of the country that has experienced the most dramatic increases in poverty, and West (Los Angeles Basin). Each of these cities represents an urban intensive environment that is highly diverse in population, large, and dense (e.g., numbers of people per square foot). According to statistics (www.citymayors.com), these cities are representative of the top 25 largest cities in the United States. Furthermore, because the racial and ethnic characteristics of these neighborhoods have become less monolithic (Massey, 2007), we sought to examine neighborhoods that reflected different compositions of non-Hispanic Whites, and minority groups.

In this study, we chose to focus our analyses of neighborhood resources during the summer months when schools were closed, and when many preschools and child care programs were on summer recess. It has been theorized that these are the critical months when children are most likely to experience fewer outside options for learning (Allington et al., 2010), and therefore, the most crucial time for book reading. Entwisle, Alexander, and Olson (2014) have proposed the "faucet theory" in describing the differences in the learning trajectories for poor and middle-class children. When school is on, all children are learning, but when school is off, children in poor and borderline communities are too often left without the resources to learn. The *summer slide* has become the term of art for the phenomenon: Without resources, school readiness skills accumulated throughout the year are likely to drop precipitously during summer, whereas, for middle-class children, they are likely to be stable or even grow. In this scenario, therefore, limited access to books in the home and community may have serious consequences for children's continuing growth in reading and skill development.

Method

Sample

Our goal was to gather a sample of neighborhoods in three areas of the country to gain a more national perspective on communities that were most affected by these demographic shifts in the new millennium. According to Sampson and Raudenbush (1999), a "neighborhood" is a subset of a larger community, a collection of both people and institutions occupying a spatially defined area that are influenced by ecological features that include cultural, ethnic, and sometimes physical forces. In studying neighborhoods, demographers have focused on what Grannis (1998) calls "tertiary communities"

delineating aggregates of street blocks that are reachable by pedestrian access. These are areas that pedestrians can walk through without having to cross major thoroughfares, or boundaries, and where people are likely to congregate and interact.

We selected two contiguous neighborhoods in three cities, one that reflected a high-poverty tract (40% and above), and the other, a borderline tract (roughly 18%-40%) representing a neighborhood in which families had likely "moved up" from the former tract. In Washington, D.C., we selected Anacostia, a hilly neighborhood with a mixture of modest houses and apartment complexes in view of the Capitol yet isolated from the rest of the city by the Anacostia River and the Anacostia freeway as the high-poverty neighborhood. Close by is the Capitol Hill borderline neighborhood, with its yoga studios alongside outdoor restaurants and cafes, along with pockets of abandoned homes and boarded up buildings. In Detroit, we selected Hamtramck, a diverse low-income community, home to dozens of closed-down factories, auto centers, and boarded up stores, symbolic of the turndown in the auto industry. Poles make up the majority of the population along with a significant immigrant community from Africa and South Asia. Nearby, the University District, the borderline neighborhood is predominantly African American, with some sections that include well-kept houses with manicured yards, and private security signs. In the LA Basin, Vermont Square, the low-income neighborhood, is a highly dense community (with 21,364 people per square mile), in which 75% of the population is Hispanic. Neat, one-story houses are packed next to each other behind chain-linked fences, and colorful hand-painted signs in nearby businesses are in Spanish, with Mexican symbols such as the Virgin de Guadalupe frequently depicted in murals. Ten minutes away is the largely middle-class neighborhood of Culver City with its large homes and manicured lawns. While there is certainly variation on different streets, it is largely middle-income and remains the hub of the motion picture industry.

As shown in Table 1, each of the high-poverty tracts exceeded the 40% threshold, indicating an environment of concentrated poverty. Given their square footage, all were dense communities with large populations of children under age 18. Reflecting the norm in past decades, two of these high-poverty neighborhoods were dominated by a single group (e.g., Black in Washington, D.C.; Hispanic in LA) with the exception of Hamtramck in Detroit, which included a mixed high-poverty population almost equally distributed among Blacks, Asians, and non-Hispanic Whites. Borderline neighborhoods, on the other hand, again with Detroit as an exception, were more integrated across racial and ethnic groups.

Table 1. Demographics of Six Neighborhoods.

Neighborhood	Total population	<18 Population	Ethnicity	Child poverty	Elementary school reading proficiency[a]
Anacostia (low-income, Washington, D.C.)	21,247	4,148	97% Black 1% Hispanic 2% Other	61%	20% CAS
Capitol Hill (borderline, Washington, D.C.)	29,045	3,971	34% Black 53% White 7% Hispanic 9% Other	21%	63% CAS
Hamtramck (low-income, Detroit)	39,038	11,631	37% Black 37% White 1.4% Hispanic 22% Asian	67%	44% MEAP
University District (borderline, Detroit)	38,727	9,361	93% Black 4% White 0.9% Hispanic 0.5% Asian	32%	48% MEAP
Vermont Square (low-income, LA)	62,276	18,670	22% Black 26% White 75% Hispanic 1% Asian	54%	38% CST
Culver City (areas of borderline, middle-income, LA)	31,766	7,428	10% Black 54% White 33% Hispanic 15% Asian	18%	76% CST

Note. CAS = comprehensive assessment system; CST = California Standards Test; MEAP = Michigan Education Assessment Program. Available through American Factfinder.
[a]Available on school district websites.

Each of the high-poverty tracts experienced high unemployment with Detroit's statistics most striking. Reflecting the sharp declines in manufacturing throughout the Midwest, unemployment affected almost a quarter of the possible working population in both high-poverty and borderline communities. Child poverty was high in all of these census tracts, indicating, on average, a troubling statistic of almost two out of every three children in the high-poverty tracts and one out of every five children in the borderline tracts. In this respect, each of our neighborhoods experienced poverty, however,

some more extreme than others. As shown in the far right column (Table 1), state test scores reflected trends reported on the National Assessment of Educational Progress (NAEP; 2004): Children in high-poverty communities were likely to score lower on state-related assessments than those in the borderline communities.

Together, these tracts seemed to represent the characteristics most associated with the prevalence, character, and nature of neighborhoods in metropolitan areas across the country that have experienced the greatest changes in the new millennium. Therefore, in examining the ecological context more closely, we sought to engage in systematic social observation (Sampson & Raudenbush, 2004), collecting data that more directly reflected the "sights, sounds, and feel of the streets." In particular, we wanted to examine how these environments might support the opportunities children have to access print in their neighborhoods.

Data collection procedures. To begin our data collection process, we examined residential databases to delineate neighborhoods. For each neighborhood, we then divided our map into smaller sections of three. Three research assistants visited each neighborhood, taking a section at a time. In a round robin fashion, each then independently visited one section, then the next section, and the third section, ensuring that each section of the neighborhood was visited three times.

Our first visit was designed to get a sense of the neighborhood—where people congregated—and the availability of shops and other resources. From the very beginning, it was evident that neighborhoods of concentrated poverty looked very different from the more borderline neighborhoods. Each of the high-poverty tracts tended to have a threatening appearance, marked by dilapidated housing, vacant units with broken or boarded up windows, and blight. In one neighborhood, for example, bullet-proof glass often separated patrons from the cashiers at stores, with signs saying that "loiterers" could be arrested. In another high-poverty neighborhood, dozens of stores were boarded up or falling down. Residential streets had abandoned houses with caved-in roofs, no windows, with trees growing up inside homes, suggesting a neighborhood where blight had become the norm and not the exception. At the same time, while some whole streets were abandoned, it was more common to see such houses intermixed among those in decent repair with people sitting on their stoop and chatting with neighbors. In Vermont Square in the Los Angeles Basin, more temperate climate allowed for more temporary housing. We found one-story houses densely packed with tarps and other temporary structures outside to help expand the space for 15 or more people to live.

In contrast, borderline neighborhoods in the 18% to 40% range generally had a very different look and feel. Fewer units in these neighborhoods were vacant or in disrepair. There was less litter and broken glass. Fewer people were "hanging out," and even fewer looked sickly. Although still showing signs of distress, such neighborhoods appeared to be a mix of middle-class and blue-collar residents. While providing a stark contrast to Anacostia, Capitol Hill, the borderline neighborhood was not very well-integrated, with poorer housing and non-White populations more concentrated at the eastern part of the neighborhood, further away from the Capitol and monuments. University District, on the other hand, in Detroit still suffered from some of the fallout from the higher poverty tracts. In this borderline tract, well-kept houses with manicured yards "patrolled by private security" sat alongside abandoned houses and buildings. Of greatest contrast, Culver City in Los Angeles Basin had the largest homes with grass parks for children to play, where families and their young children could picnic and watch a "Shakespeare for kids" without fears of crime or the stresses that were typical of living on the periphery of a high-poverty area.

In the next set of visits, we engaged in a systematic social observation focusing on the prevalence of books in the neighborhood. We hired city bikes and then walked and biked each and every street in the neighborhood to meticulously examine what kinds of print resources might be available for

Table 2. Summary of Data Collected in Each Neighborhood.

Neighborhood	Miles of streets surveyed	Number of businesses counted and categorized	Number of stores with any print resources
Anacostia, D.C.	21	137	4
Capitol Hill, D.C.	29	311	11
Hamtramck, Detroit	70	606	12
University District, Detroit	63	621	14
Vermont Square, LA	45	859	17
Culver City, LA	53	645	17
Total	281	3,179	75

purchase. Whenever we saw a store that might have any type of print resources (including newspapers), we entered the store and counted and categorized every resource. Although our focus was on the availability of materials for young children (birth through age 8), we examined all types of materials including game books, fiction, nonfiction, workbooks, and newspapers for all age groups (e.g., preschoolers, elementary, tween, and young adults). In addition, we noted the type of store and where it was located.

Across our six neighborhoods in three cities, we traversed over 280 miles. Once we had finished counting the businesses and print resources on a given street, we highlighted that street on our map to prevent repetition (e.g., overcounting) or undercounting. We entered our data into a spreadsheet, documenting the address where we found books for sale, the type of store, as well as the number and type of print resources. As shown in Table 2, we counted a total of 3,179 businesses in these six neighborhoods, of which 75 included print resources representing 2% of all businesses. The discrepancies between neighborhoods were substantial in Washington, D.C., while they were less so in Detroit, and LA Basin.

Data Analysis

Together, we counted more than 82,389 print resources (i.e., books, magazines, and newspapers) in 75 stores across these six neighborhoods. Because we were particularly interested in print resources for children, we focused on the number of preschool and children's books available. We excluded "game books" (such as coloring books, word searches, and sticker books) from our analysis because these books usually contain minimal print. We calculated the number of preschool books in a neighborhood, then divided it by the number of children age 5 and below. We also added together all fiction and

Table 3. Types and Numbers of Stores Selling Children's Reading Resources.

Types of stores	Anacostia, D.C.	Capitol Hill, D.C.	Hamtramck, Detroit	University District, Detroit	Vermont Square, LA	Culver City, LA
Bookstores	0	1	1	0	1	3
Department store	0	0	0	0	1	4
Dollar stores	0	0	5	5	5	1
Drugstores	1	0	1	3	1	0
Grocery	0	2	0	1	0	1
Thrift store	0	0	1	0	0	0
Toy store	0	0	0	0	0	2
Total	1	3	8	9	8	11

Note. These are stores where we found any children's magazines, preschool, elementary, tween, or young adult fiction and nonfiction.

nonfiction children's books (including preschool, elementary, tween, and young adult books) in a given neighborhood, and divided this number by the number of children age 18 and below.

We also analyzed our data to investigate where books were sold. We tabulated the types of stores where we found books, and compared data between our high-poverty and borderline neighborhoods to better understand where families in these areas might be most likely to find books to buy for their children.

Results

Across Washington, D.C., Detroit, and the Los Angeles Basin, the data are consistent: Children's books are hard to come by in high-poverty neighborhoods. During the precious summer months, with schools closed and preschool programs often converted to day camps or shut down for the vacation, the likelihood that one could find a book for purchase in these neighborhoods is very slim. In the following, we first describe where these books are sold and the numbers that are available in different neighborhoods.

Where Are Children's Books Sold?

In Table 3, we outline the types of stores where we found access to print materials—books and magazines for children—in our six neighborhoods. These numbers paint an important picture of where children's resources might be available. For example, dollar stores were the most common type of store in which to find children's books—especially in the low-income communities. As described above,

Table 4. Numbers of Children's Books for Sale by Neighborhood.

	Anacostia (low-income, D.C.)	Capitol Hill (borderline, D.C.)	Hamtramck (low-income, Detroit)	U. District (borderline, Detroit)	Vermont Square (low-income, LA)	Culver City (borderline, LA)
Total preschool books	0	686	80	384	467	2,450
Total nonpreschool children's books	5	1,330	196	492	973	4,806
All children's books (preschool through young adult)	5	2,016	276	876	1,440	7,256

Anacostia, Washington, D.C., had the fewest stores of any kind. In the entire neighborhood, we found only five books in a CVS drugstore.

Borderline neighborhoods had more locations to buy books, yet there were few dedicated bookstores, reflecting the dramatic decline in once-independent bookstores as well as bookstore chains. The few bookstores we did find often carried only niche collections, such as religious bookstores or comic bookstores, or in Hamtramck, one that only sold titles in Polish.

However, as these data show, there were vast disparities across neighborhoods where one could potentially purchase a children's book. Ironically, the fewest locations occurred in the nation's capital for both neighborhoods, whereas the options were far greater in Detroit and LA Basin. In fact, Culver City, the most middle-to-upper-class neighborhood in our sample, could be considered relatively rich in print compared with all other communities.

Nevertheless, what was available *within* these stores did vary dramatically, highlighting a stark narrative of inequality. As shown in Table 4, Anacostia was bereft of any books for preschoolers; for the older set, in total, we found only five elementary fiction books. Neighboring Capitol Hill, in contrast, while only supporting three places to buy books carried over 2,106 different titles, including a sizable number for preschoolers. Similarly, borderline communities in Detroit and middle-class Los Angeles had substantially greater numbers of books than in their neighboring high-poverty tract.

Yet, the absolute numbers belie a more complicated picture of access in these communities, both high-poverty and borderline. These communities often carried only specialized or niche collections for particular racial/ethnic groups. For example, we found a number of religious bookstores in these communities, some of which were closed on certain days, or unavailable to

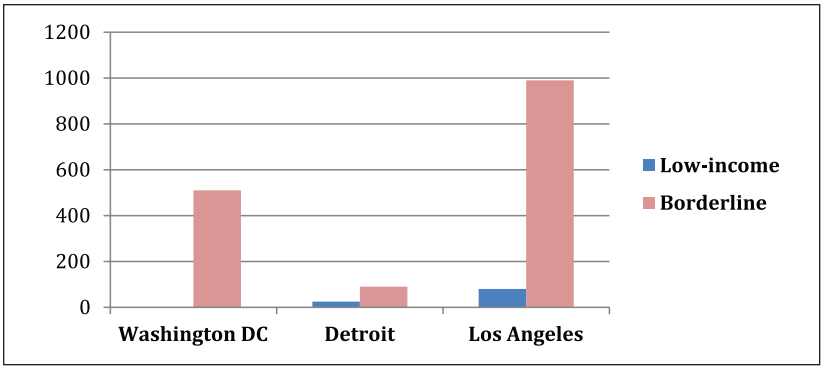

Figure 1. Preschool books per 1,000 children below age 5.

the general public. Some of the books were only in a particular language; for example, we found a bookstore in Hamtramck that sold only titles in Polish. In Vermont Square, we found a large Christian bookstore, most of which was devoted to adult books. In addition, several comic bookstores, primarily targeted to the tween and youth audience, were recorded in our counts in the borderline tracts. There was little to attract young children to books or to reading any print.

How Many Books Per Child Are Available in Different Neighborhoods?

Our data show that there are significant inequalities in the numbers of books for sale per child across neighborhoods. Figures 1 and 2 show the number of preschool books per children below 5, and the total number of children's books for those below 18. Given the importance of the early years and the read-aloud experience, we separated out these figures to provide a better portrait of children's access to print, knowing that their relative contribution to reading development changes across the grades. For example, reading aloud strongly influences vocabulary and word recognition early on, and indirectly influences reading comprehension in later grades.

While it is obvious from these graphs that the borderline and middle-income neighborhoods have significantly more literacy resources than the high-poverty communities, it is difficult to ascertain exactly what this means for children in the communities. Therefore, in the following, we present the same data in a slightly different way. Here we ask: What is the correspondence between the number of books in the neighborhood tract and the

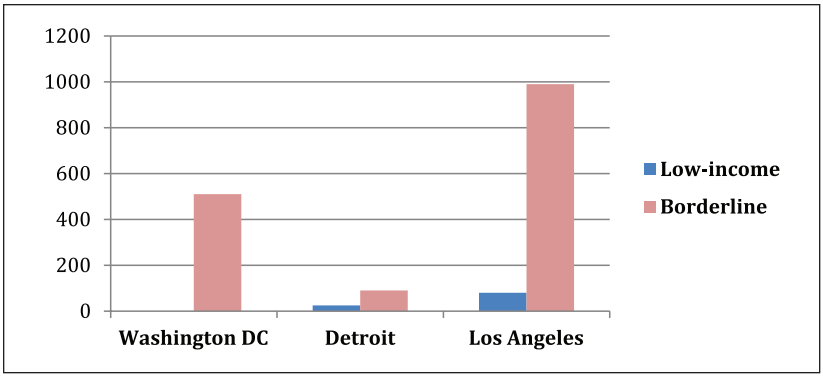

Figure 2. Number of books per 1,000 children (below age 18).

number of children who live there? Or, in other words, how many children would need to share one book?

These figures portray an even more troubling scenario. Only one of our neighborhoods (Culver City) had more preschool books for sale than it had preschool children. We quantified these data by saying that there are 1.4 preschool books for every child (below 5) in Culver City.

In Table 5, higher numbers mean that there are fewer literacy resources for sale in that neighborhood. For example, in Anacostia, D.C., for preschoolers, no sharing would be possible as there are no preschool books available. For the older children, the news was not that much better; 830 children would have to share one book. By contrast, across the river in Capitol Hill, only two children would have to share a book. Although far less extreme, the other neighborhoods show rather scant print resources for children as well. In Hamtramck, 42 would need to share one book, whereas 11 would need to share in the University District. Vermont Square, as well, would have limited resources, as indicated by the need for 13 children to share one book. In addition, in all likelihood, these numbers may *overestimate* the availability of resources rather than the other way around. If one takes into account the niche collections, the numbers might have been even starker.

These data show significant print resource gaps between high-poverty and borderline communities. Dividing the total number of children's books we found for sale by the total number of children in our neighborhoods, we found that overall, our borderline and middle-income neighborhoods had 16 times as many books per children than our lower income neighborhoods.

Table 5. Number of Children Who Would Need to Share One Book.

Neighborhood	Number of children 0-5 who would need to share one book	Number of children 0-18 who would need to share one book
Anacostia, D.C.	N/A (no preschool books; 1,411 children below age 5)	830
Capitol Hill, D.C.	2.5	2
Hamtramck, Detroit	37	42
University District, Detroit	5	11
Vermont Square, LA	12	13
Culver City, LA	1.4 books per child	1

Note. Higher numbers in this table indicate that there are fewer literacy resources available, and that the neighborhood is more of a book desert. For example, in Anacostia, there was only one book available for every 830 children. In the University District, Detroit, there was one book available for every 11 children. Culver City, LA, was the only neighborhood where the number of books available was equal to (or higher than) the number of children in the neighborhood. In Culver City, there were enough books available for each child to have one.

Discussion

This study highlights the disparities in access to print for children living in high-poverty neighborhoods compared with those who live in borderline communities. It shows how the increasing income segregation of neighborhoods may affect a family's ability to provide resources for enhancing children's school readiness and beyond. Nevertheless, none of these communities, whether borderline or high poverty, were actually well-equipped to support children's early literacy skills and interests in learning to read. None appeared to have an abundance of reading resources or adequate choice of book titles for children, especially for those in the early years. According to our calculations, Culver City was the only community that had more than one book available per child, a number small in comparison with previous analyses, which have documented 13 books per child available for purchase in a middle-income community (Neuman & Celano, 2001).

This research may contribute to the growing and increasingly rigorous scholarship in urban education. Although each of our targeted cities was identified as an urban intensive city according to Milner's (2012) typology of urban education, our evidence showed the variation of opportunities within each of them. It suggests that further classifications and categorizations within this typology may be warranted to better distinguish the community realities that families face in educating their children.

Some might argue that the presence of print resources in neighborhoods, however, is less important given Internet access and the increasing variety of resources available online. Certainly, the book market has changed dramatically in recent years, with smaller booksellers and bookstores driven out of business by larger retail stores and the web. A recent study, for example, showed that in 2010, approximately 13% of children's books were sold online by "e-tailers"; by 2012, this amount had jumped to 25%, essentially doubling in 2 years' time (Milliot, 2014).

Nevertheless, recent data show that people purchasing books online are likely to come from higher socioeconomic circumstances (Rideout, Foehr, & Roberts, 2010). Therefore, the availability of physical books for sale may matter even more to families in low-income communities. According to a recent Publishers Weekly report (Milliot, 2014), 75% of children's books are still bought in bricks and mortar stores. Consequently, stores that have access to resources reflecting a range of ages and interests remain an important presence in a community.

Furthermore, while the digital divide has decreased some in recent years, the problem has not gone away. A 2013 study (Rideout, 2013), for example, showed that 46% of low-income families with children below 8 had Internet access at home, in contrast to 86% of middle-income families. Similar gaps were reported for mobile devices; 61% of low-income families compared with 91% of middle-income families have mobile devices that can access the Internet. Even when the Internet is available, families are less likely to download e-books or use educational applications on a smartphone than on a table or computer. Evidence from the most recent survey of media habits (Rideout, 2014) bears this out: 57% of low-income families compared with 80% of middle-income families who owned a mobile device were said to download educational games or activities rather than books. Therefore, although the world of communications technology and access is rapidly changing, for the foreseeable future, families are still using physical books more than e-books and still reading bedtime stories in print book form. Ideally, decreasing costs and policy initiative such as ConnectED, a federal effort, may in the future lead to greater access, creating a multiplatformed access to books and resources.

However, at this point, families in these low-income communities will have to rely on the public libraries for books in the community, representing our country's only safety net for information literacy. While offering excellent services to children and their families, in some areas, decreased funding has led to limited hours and curtailed services. For example, although Anacostia's library was thriving, the public library in Detroit was under repair, and closed for the summer. The public library nearest to the Vermont

Square neighborhood in LA Basin was not easily accessible by public transportation. Furthermore, in many low-income communities, demand has actually exceeded capacity placing a great strain on computer resources (Neuman & Celano, 2012) and on family resources as well; parents are often resistant to check out books due to the potential library fines. As good as they are, therefore, we cannot rely on libraries to be the single source for access to resources in communities.

Unfortunately, additional evidence suggests that school libraries and media centers might also inadvertently contribute to the access gap. Pribesh, Gavigan, and Dickinson (2011), for example, examined differences in school library characteristics (staffing, books added to collections schedule, and number of days closed) in schools with various concentrations of students who come from low- and middle-income status. Similar to Neuman and Celano's (2001) findings, these researchers found that those students attending schools with the highest concentration of students living in poverty had the fewest school library resources to draw from.

The lack of resources reported in our analysis is especially troubling given what we know about the summer slide. Summer learning shortfalls have consequences that reverberate through children's schooling and can predict who may or may not earn a high-school diploma (Alexander, Entwisle, & Olson, 2007). Cooper, Nye, Charlton, Lindsay, and Greathouse (1996), for example, conducted a meta-analysis of 39 studies of summer academic loss. His results indicated that middle-class students appeared to gain on reading tests during the summer, while lower class students lost ground on these measures. On average, they found that summer vacations created a reading gap of about 3 months between middle and lower income groups per year. Alternatively, Allington and his colleagues (2010) found that when children were provided with about 10 to 20 books over the summer, as many as 50% of the children not only maintained their skills but actually made significant reading gains. In short, reading proficiency is tied to the amount of time students spend reading.

Consequently, it is critical for children to be immersed in a book culture early on. Although libraries are critically important, studies have shown that the very presence of books in children's homes is related to reading achievement (Mol & Bus, 2011). However, the relationship actually belies a more complicated theory of action, one based on the premise of physical and psychological proximity (Neuman & Carta, 2011). Children engage most often in activities that are within their most immediate environment. They seek to interact with those most close to them and books serve as exceptional communicative partners. The psychological relationship that occurs through joint attention with sharing books together sets in motion children's appetite for books and therefore, reading proficiency.

When there are no books, or when there are so few that choice is not an option, book reading becomes an occasion and not a routine. This has enormous consequence for children's reading development and school success. The lack of a routine means that children are likely to miss the rich vocabulary, the rhythms and cadences of our language, that is, the print concepts that are central to learning to read. But perhaps even more important, they are likely to miss the great pleasure of being read to. Early on in their development, children acquire strong, positive feelings about books (Bus & Van Ijzendoorn, 1995), and being read to, especially when the reading is embedded in relationships with people who are important to them, places them in prime position to acquire a wide range of knowledge about written language and about the process of reading. These routines become impossible where environments are bereft of print. Such concerns have sparked new programs such as Every Child Ready to Read, a national campaign in public libraries to engage parent–child interactions through singing, reading, writing, talking, and playing to promote early literacy activities, birth through 5.

There are a number of limitations to consider in our research. Specifically, we engaged in an analysis of community resources; therefore, we cannot determine the relationship between books in the marketplace and books at home. Nevertheless, we may speculate on the basis of our subsequent research. Based on surveys of 450 families in Anacostia, D.C., we found that the number of books in homes ranged from 0 to 20, far below the number reported in the PIRLS report (Mullis et al., 2012). In addition, although the Internet connections in our study were inconsistent, and a substantial number of families could not afford access, we cannot rule out the possibility that books in digital form might have been made available to families. Finally, our study addressed only one type of access to print, and did not address other resources in the community.

In theorizing about these resource inequalities, we use the term *book deserts*, arguing that like the food desert construct, these shortages in given neighborhoods have significant consequences for the well-being of families. This term helps us draw attention to the structural inequalities—rather than individual or family characteristics that result in academic gaps between communities (Burke, Greene, & McKenna, 2016). The book desert phenomenon is particularly striking in high-poverty tracts; it is only somewhat ameliorated in borderline communities. Still, neither of these community contexts comes close to book availability in higher income communities (e.g., estimated to be more than 300 books per child), nor do they provide the quality of selection and choice that previous research has shown to be associated with reading achievement (Mullis et al., 2012). Rather, what we see here are

critical barriers to further achievement. Concentration of poverty and limited access to reading resources can only contribute to the glaring gap already present even before children enter school.

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