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Does Neighborhood Matter? Assessing Recent Evidence

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Abstract

This article synthesizes findings from a wide range of empirical research into how neighborhoods affect families and children. It lays out a conceptual framework for understanding how neighborhoods may affect people at different life stages. It then identifies methodological challenges, summarizes past research findings, and suggests priorities for future work.

Despite a growing body of evidence that neighborhood conditions play a role in shaping individual outcomes, serious methodological challenges remain that suggest some caution in interpreting this evidence. Moreover, no consensus emerges about which neighborhood characteristics affect which outcomes, or about what types of families may be most influenced by neighborhood conditions. Finally, existing studies provide little empirical evidence about the causal mechanisms through which neighborhood environment influences individual outcomes. To be useful to policy makers, future empirical research should tackle the critical question of how and for whom neighborhood matters.

Keywords: Neighborhood; Poverty; Policy

Introduction

Most people want their children to grow up in a "good" neighborhood—where the public schools are effective, where the streets and parks are safe, where other children do not lure them into dangerous or illegal activities, and where adults reinforce the values of responsibility and work. And most people believe that growing up in a "bad" neighborhood puts a child's future at risk. Empirical research generally confirms that neighborhood environment has an influence on important outcomes for children and adults. But efforts to identify which neighborhood characteristics matter most, and to quantify their importance for families and children, have been inconclusive overall. Many aspects of neighborhood environment have gone unexamined, and on many critical issues—such as which neighborhood characteristics

matter most and for whom—different studies come to contradictory conclusions. No studies provide definitive guidance to policy makers about the relative importance of particular neighborhood attributes or about strategies for helping families who live in distressed communities.

This article synthesizes the findings from a wide range of existing research to ascertain what reasonable conclusions can be drawn about the impacts of neighborhood environment on families and children.[1] We hypothesize that neighborhood conditions may influence a variety of individual outcomes, including educational attainment, criminal involvement, teen sexual activity, and employment.[2] Most of the existing empirical research has focused on one of these outcomes at a time, incorporating one or two neighborhood attributes into models that estimate the contribution of other individual risk factors. Our goal is to look across outcomes to assess the overall importance of neighborhood environment as a determinant of social and economic well-being at different stages in a person's life.

Although several other researchers have produced useful reviews of the neighborhood effects literature (Galster and Killen 1995; Jencks and Mayer 1990b; Mayer 1996), this article includes a number of recent studies omitted from these earlier reviews. With the exception of the Jencks and Mayer review, it is also considerably more comprehensive in scope.

The bulk of empirical studies find that neighborhoods do matter. Various neighborhood conditions significantly affect a wide range of individual outcomes. However, neighborhood effects are generally much smaller than the effects of observed family characteristics (such as parents' income, socioeconomic status, or educational attainment). And some of the recent studies that have done the most careful job of controlling for unobserved

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[1] This article is drawn from an exhaustive review of empirical research on the effects of neighborhood location for families and children (Turner and Ellen 1997). It focuses on studies that at least attempt to control for individual or family characteristics, such as income or education. In other words, studies that simply compare average outcomes across neighborhoods of different types have not been included. We should also note that our focus is primarily on quantitative studies, although we discuss a number of qualitative works as well.

[2] Neighborhood environment may also have an impact on health outcomes, through such links as environmental hazards, communicable diseases, and access to medical care. We found surprisingly few studies that attempt to link health outcomes with neighborhood while controlling for individual characteristics. Therefore, we decided not to include health in our analysis.

family characteristics (such as parenting skills or values) find no independent neighborhood effects, casting doubt on the robustness of results from other studies.

Although the literature on neighborhood effects is quite extensive, many potential impacts of neighborhood environment on individual well-being have yet to be investigated. Last, and perhaps most critical, the existing evidence is inconclusive when it comes to determining which neighborhood conditions matter most, how neighborhood characteristics influence individual behavior and well-being, or whether neighborhood effects differ for families with different characteristics. As a consequence, the empirical literature offers remarkably little help to policy makers trying to design or assess strategies for helping families who live in distressed neighborhoods. We conclude that studies that combine qualitative and quantitative methods offer a promising approach to advance the state of understanding about how and why neighborhoods matter.

The remainder of this article consists of four sections. The first section introduces a conceptual framework that helps to organize the existing theory and evidence about neighborhood effects and how they may operate for different types of people and across different life stages. The second section identifies three major sets of methodological challenges involved in measuring neighborhood effects, which help explain why the existing literature tends to be so inconclusive. The third section then summarizes what we can learn from existing empirical research regarding the effects of neighborhood environment on infants and preschoolers, on elementary school children, on adolescents, and on adults. The article concludes by suggesting priorities for future research that could significantly advance our collective understanding of the impacts of neighborhoods and help inform public policy initiatives designed to assist poor families and poor communities.

Conceptual framework

To date, most researchers who have explored the impact of neighborhood characteristics have approached the issue from the perspective of understanding (or predicting) a particular outcome. In other words, they have added neighborhood variables to preexisting conceptual models that explain teen sexual activity, or school performance, or employment status. When one attempts to assess the potential role of neighborhood environment *across* social and economic outcomes, there is no clear conceptual

framework for understanding how or why neighborhood characteristics might affect people's behavior and life chances. Such a framework is needed as a tool for organizing the findings of disparate studies of neighborhood effects. And to provide practical guidance to policy makers, researchers need to investigate *how* neighborhood affects outcomes.

No single causal model fully explains the role that neighborhood environment potentially plays across domains in a person's life. Moreover, neighborhood conditions probably affect individuals in different ways at different life stages. It seems likely, for instance, that neighborhood environment will exert only a small influence on children's intellectual or emotional development before they begin school. Infants and toddlers are not consistently exposed to neighborhood institutions and do not generally form close, ongoing relationships with people outside their homes and families. As children grow up, however, the influence of the immediate family on their values, worldview, and behavior gradually wanes, and the importance of peers and adults outside the family grows (Berndt 1996; Bronfenbrenner 1979). Moreover, theories of child development suggest that the influence of peers (as opposed to adults) increases significantly during the teen years, when young people assert their independence not only from their immediate families, but also from other adults in their schools and communities (Berndt 1996; Connell and Halpern-Felsher 1997; Steinberg and Silverberg 1986). The impact of neighborhood on adults probably operates somewhat differently, influencing people's ability to gain access to services, information, and opportunities, rather than directly shaping their worldview or behavior.[3]

In reviewing the existing theoretical and empirical literature, we have identified six distinct mechanisms through which neighborhood conditions may influence individual outcomes: quality of local services, socialization by adults, peer influences, social networks, exposure to crime and violence, and physical distance and isolation. We build upon theories developed by others and owe a particular debt to Jencks and Mayer (1990b). The remainder of this section introduces these six mechanisms and explores how their relative importance may vary by life stage. But at any life stage, not all individuals and families are necessarily affected by neighborhood environment to the same degree. Some people have strong social networks, sources of support, or other resources that extend beyond the neighborhood in which they

[3] We do not discuss the impacts of neighborhood on outcomes for elderly people.

live. For example, affluent families who live in poor school districts can typically afford to send their children to private schools or to otherwise supplement their children's education if the local public schools are inadequate. In contrast, a single mother working full-time at the minimum wage is probably much more dependent on the local public school system to provide educational services to her children. Thus, it seems likely that some types of families or individuals may be more vulnerable to the influences of neighborhood environment than others.[4]

Quality of local services

An individual's well-being may be significantly affected by the availability and quality of services that are delivered at the neighborhood level. The most obvious example is public school quality, especially in the elementary grades, when children are most likely to attend schools in the immediate neighborhood. If the local public schools are poor, children are unlikely to receive a solid foundation in reading and math skills, particularly if their parents lack the tools to supplement their education. Without these basic skills, students may struggle with school later on and become frustrated and disenchanted.[5]

Other services and institutions whose availability and quality vary across neighborhoods may also have a significant impact on individual outcomes. A majority of children in the United States now attend some form of preschool by age five (U.S. Department of Education 1995), and the neighborhood that a child lives in may constrain the set of child care centers and preschools available. In less affluent communities, these centers and schools are likely to have smaller and less experienced staffs, to have fewer books and toys that encourage learning, and to receive less help and support from volunteer parents. Thus, children may receive less attention and supervision, be less challenged and stimulated, and ultimately be disadvantaged when they begin school.

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[4] It is also possible that economic or institutional conditions in the larger metropolitan area affect the relative role of neighborhood environment. For example, neighborhood job networks may be much more important when the economy is weak than when jobs are plentiful and overall unemployment is low.

[5] Employers may also make assumptions about education and work skills based on their perception of school quality for the neighborhood in which a job applicant lives, effectively discounting the qualifications of applicants because of their place of residence.

Access to quality medical care may also be significant at every stage of life. Both children and adults who get routine illnesses in communities with fewer health care resources may have to miss school or work for longer periods. Those with chronic diseases, such as asthma or diabetes, may go without treatment and be unable to lead the normal lives that they could in other communities. In addition, the availability of afterschool programs, such as sports, music, and art, may matter a great deal, especially during the adolescent years. Without these diversions, teenagers may be at greater risk of getting involved in dangerous or antisocial behaviors and may not have the opportunity to discover talents and strengths upon which to build productive lives and careers.

Socialization by adults

Children learn a lot about what behaviors are "normal" or "acceptable" from the adults they encounter in the community. In addition, adults serve as role models for what young people can aspire to become, and adults outside the immediate family can help parents care for, teach, and discipline their children. Thus, the collective presence of adults in a community to monitor and support children's activities is likely to be critical. Adults, through their actions and words, also communicate values about the importance of work, education, and civility. As children begin to perceive and internalize the power structure within a community, they are most likely to be influenced by the adults who possess power and respect.

For adolescents, adults may serve less as chaperons and monitors and more as role models or even peers themselves. Wilson (1991) argues that children and teenagers growing up in areas with few working adults learn less about planning ahead and managing time. Moreover, if the vast majority of the adults that a teenager knows either are not working or have been unsuccessful in finding decent jobs, the teenager is likely to conclude that there is no real payoff to be expected from responsible behavior. In particular, Wilson (1987) argues that youths living in isolated, high-poverty communities are likely to underestimate the return on education. And as Ludwig (1993) points out, the problem may be exacerbated by the fact that the affluent, educated individuals that inner-city youths do encounter tend to be of a different race. Young people may be less likely to identify with these adults or to view their examples as relevant. They may assume, that is, that the return on education for whites is entirely different from that for minorities.

Peer influences

Studies of peer influences date back at least to the late 19th century (Cook and Goss 1996). Much of the research has focused on how the values and behavior of young people are shaped or influenced by their peers—for better or for worse.[6] Peer pressure can lure young people into dangerous or criminal behavior, or it can challenge them to reach new levels of athletic or academic achievement.[7] Some researchers have also suggested that when young people's peers are significantly better off—economically or socially—they may feel discouraged by their peers' many advantages and actually do worse.

Youths' peer groups are certainly not determined solely by neighborhood. Indeed, recent evidence from the court-ordered desegregation program in Yonkers suggests that teenagers who move often return to their old neighborhoods to hang out with old friends (Briggs 1997b). Still, neighborhood is likely to have a significant impact on the choice of peer group. The potential impact of the neighborhood peer group is perhaps most compelling during the adolescent years, as the influence of one's immediate family diminishes and interaction with peers expands. And indeed, researchers have found that teenagers are prone to be more influenced by their peers than are younger children, who remain more focused on their immediate family, teachers, and other significant adults (Berndt 1996; Steinberg and Silverberg 1986). If many teenagers in a community are uninterested in school, engaging in crime and other dangerous behaviors, and having babies out of wedlock, teenagers will be more apt to see these activities as acceptable, even fashionable, behavior.

Peer effects may also play a role during the elementary school years, as children interact more intensely with people outside their families and form more intimate friendships. At this stage, however, we posit that the influence of same-age peers is probably not as critical as the influence of older children and teenagers in the neighborhood, because elementary school children naturally look up to, and tend to emulate, those who are older than they are. Moreover, the influence of older children may simply be more critical, since the antisocial behaviors of such

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[6] Adults may also be influenced by peers, but we discuss these effects in the context of social networks, below.

[7] Most researchers, following the example of Jencks and Mayer (1990b), refer to peer effects as "contagion effects" and tend to stress the spread of *negative* behavior. But peer influences can just as easily lead to positive behavior as well (Berndt 1996).

older youths (such as smoking or drug use, skipping school, becoming sexually active, and committing crime) are arguably more damaging than any behaviors of younger children.

Social networks

An individual's knowledge about and access to social supports and economic opportunities may depend on his or her network of friends, colleagues, and acquaintances. And many of these networks may be geographically based. Some researchers have theorized that the very existence of dense neighborhood social networks is beneficial for residents because people living in a more socially cohesive community are more apt to look out for their neighbors, help them weather hard times, and share information with them about relevant community news, key resources, and job openings (Coleman 1990; Coulton and Pandey 1992; Furstenberg 1993; Putnam 1995; Sampson and Groves 1989; Sampson, Raudenbush, and Earls 1997; Temkin and Rohe 1997). There is even some evidence that the neighborhood environment influences people's level of civic and political participation (Cohen and Dawson 1993). As Sampson, Raudenbush, and Earls (1997, 919) explain, people are less likely to get involved when "the rules are unclear and people mistrust or fear one another."

The composition of local networks may matter as well. For example, word of mouth is a critical mechanism through which adults as well as adolescents learn about employment opportunities. Thus, people living in a neighborhood in which few people work in decent-paying jobs are less likely to hear about available openings. They are also less likely to know employed people who can vouch for their reliability and character to an employer. Such recommendations, especially from in-house workers, have been shown to be critical to finding jobs (Kasinitz and Rosenberg 1996; Sullivan 1989; Wial 1991). These effects could also be important for adolescents who might be cut off from job opportunities because they simply do not know employed people who can help them find either permanent jobs or the part-time and summer jobs that can serve as important training grounds.

The importance of these neighborhood-based networks depends on a person's connection to networks outside the neighborhood boundaries. Individuals who have strong family, friendship, or collegial networks that extend beyond the community in which they live are less likely to be influenced by their immediate surroundings. They can get information, services, opportunity,

and support from other sources. But people who lack these larger networks may be much more dependent on services and supports within the neighborhood. As a result, vulnerable individuals may be severely constrained by a neighborhood in which few people work in decent-paying jobs.[8]

Although social networks are not immediately critical to elementary school children, Braddock (1980) proposes a "perpetuation theory" of racial segregation, suggesting that patterns of social interactions at a young age may serve to shape a child's patterns of behavior and interactions down the road. In particular, he argues that minority students who attend racially segregated schools and who have not interacted with students of different races tend to overestimate the degree of hostility they will experience in interracial situations. These students will thus tend to make choices to maintain their physical separation when they become adults. Given the racial structure of American society, this means that African Americans and other minorities who do not learn to interact with whites as children may have reduced access to jobs later in life.[9]

Exposure to crime and violence

It goes without saying that people who live in high-crime neighborhoods face higher risks of being victimized, injured, and possibly even killed than people who live in safer neighborhoods. In addition, young children (and possibly adolescents and adults as well) who witness violent crime firsthand may suffer significant and even lasting emotional trauma (Garbarino et al. 1992; Martinez and Richters 1993). Simply witnessing crimes or knowing people who have been victimized may also profoundly affect children's outlook, leading them to see the world as fundamentally violent, dangerous, and unjust.

As children get older, living in a neighborhood where crime is commonplace may lead them to believe that it is acceptable, or even "normal." For example, if young people see vandalism and property damage all around them, they may be more inclined to conclude that there is nothing wrong with breaking windows or spraying graffiti. Similarly, a teenager who knows many peers

[8] Some researchers have found evidence that poor people's social ties are more localized than those of middle-class people (see Briggs 1997a).

[9] This argument could be extended to class segregation as well, although of course a person's class background is less immediately apparent than his or her race.

and adults who have been arrested or served time in jail may not be deterred by fear or shame from engaging in criminal activity. Indeed, Anderson (1994, 94) reports that in certain inner-city communities the "toughening-up one experiences in prison can actually enhance one's reputation on the street."

Finally, people living in high-crime areas are likely to lead more sheltered, isolated lives, spending less time outside their homes participating in community activities. Thus, it is possible that crime may in fact insulate children from the social fabric of a neighborhood, thereby diminishing the influence of neighborhood and enhancing the influence of the more immediate family. But these children may also be exposed to fewer learning opportunities, become more distrustful of others, and interact far less. Thus, families living in high-crime areas may be denied the potential benefits that flow from building close social networks and pooling community resources.[10]

Physical distance and isolation

The most straightforward impact of neighborhood is physical proximity and accessibility to economic opportunities, particularly jobs. Residents of neighborhoods that are a long distance from job opportunities or that lack access to public transportation may be unable to get decent jobs even when they possess adequate skills and motivation. Kain, in his seminal 1968 article, first proposed the concept of "spatial mismatch," although he did not actually use this term. He argued that housing discrimination confines blacks to a few central-city neighborhoods where jobs have become increasingly scarce, as employers (especially manufacturing firms) have relocated to the suburbs. Ihlanfeldt and Sjoquist (1989) have since extended Kain's hypothesis to include poor whites as well, whose families, they argue, cannot afford to move to the suburban areas where job opportunities are growing.

Challenges of measuring neighborhood effects

The well-being of children and families clearly varies across neighborhoods. There is ample evidence that residents of poor, inner-city neighborhoods are less likely to complete high school

[10] Some researchers have also suggested that concentrated poverty itself erodes trust (Briggs 1997a; Rainwater 1970). It is not clear whether this is due to the higher crime rates that high-poverty communities tend to suffer.

and go on to college, more likely to be involved in crime (either as victims or as perpetrators), more likely to be teenage parents, and less likely to hold decent-paying jobs (Coulton et al. 1995; Ricketts and Sawhill 1988). But actually quantifying the independent effect of neighborhood conditions on outcomes for individual residents proves to be quite difficult.

Three significant methodological pitfalls challenge empirical research on neighborhood effects. First, it may be difficult to identify and measure the neighborhood conditions that actually play the most important role in shaping outcomes for families and children. Second, neighborhood effects may be nonlinear, and therefore may not be easily discernible. And third, as many have pointed out, it is difficult to separate the effects of neighborhood environment from individual or family characteristics, especially characteristics that are difficult to measure and observe. Failure to effectively address these pitfalls may cause some studies to *overstate* the effects of neighborhood environment on individual outcomes. But it is also possible that these methodological challenges result in the *understatement* of neighborhood effects.

Measuring relevant neighborhood characteristics

Most studies of neighborhood effects use one or more proxy measures to represent neighborhood conditions. For example, many studies use the poverty rate, the average income level, or the proportion of adults in managerial or professional jobs. But these proxies may not accurately reflect the neighborhood attributes that really matter,[11] and if so, they do not tell us how policy interventions should be targeted. For example, it might be crime rates, school quality, social capital, or some interaction of several factors that makes a neighborhood a more or less healthy place for families to live. Unfortunately, because many symptoms of neighborhood distress are highly correlated, it may be extremely difficult—if not impossible—to differentiate their effects.

Empirical studies may also fail to measure relevant neighborhood conditions accurately if they are unable to define the

[11] A growing number of researchers argue that neighborhoods that appear similar on the basis of standard socioeconomic indicators may vary significantly in terms of their social capital or civic infrastructure, which may play a major role in determining the impact of the community environment on neighborhood and individual outcomes (Coulton and Pandey 1992; Putnam 1995; Temkin and Rohe 1997).

relevant neighborhood boundaries. Researchers typically measure neighborhood characteristics at the census tract level. Census tracts are well-defined units of spatial analysis, and a great deal of data is organized by census tract. However, it is possible that tracts fail to accurately represent the neighborhood conditions that make a difference in people's lives. For some factors, such as crime or vandalism, it might be conditions on a family's block that have an impact. For others, it might be conditions in a larger geographic area, such as a school enrollment area. In general, if researchers are measuring neighborhood characteristics at the wrong scale, they are likely to understate the importance of neighborhood conditions in affecting individual outcomes.

Moreover, with only a few exceptions, empirical research on neighborhood effects uses data that describe neighborhood characteristics at a single point in time. Because families move and because neighborhoods change over time, this approach poses a number of potential problems. First, a point-in-time measure (such as poverty rate or unemployment rate) is likely to measure neighborhood conditions with considerable error and thus may not accurately reflect the environment to which a person is or was exposed. Second, this approach is not sensitive to the length of time an individual or family has been exposed to a particular neighborhood environment. Certainly, we would expect to see greater neighborhood effects for a family living in a neighborhood for 20 years rather than just 1. Similarly, we may not be measuring neighborhood conditions during the period in which they actually make a difference in a person's life.

Capturing nonlinear effects

The impact of any particular neighborhood characteristic on individual and family outcomes may be nonlinear. For example, it seems plausible that high-poverty neighborhoods (where few people have jobs and incomes are very low) may have negative consequences for residents. However, it seems far less likely that a neighborhood with a 2 percent poverty rate provides an environment for residents that is dramatically different from that in a neighborhood with an 8 or 10 percent poverty rate. In other words, there may be a critical threshold for some neighborhood characteristics (Quercia and Galster 1997). As long as the incidence of a problem (such as poverty, unemployment, or crime) remains below the threshold, it may have little impact on neighborhood residents. But once the incidence exceeds the threshold, the problem may escalate, changing the circumstances and the

behaviors of residents throughout the neighborhood. If neighborhood effects are indeed nonlinear, and particularly if neighborhood conditions make a significant difference only at extreme values, then conventional (linear) estimation techniques may understate these effects or even overlook them altogether.

Most of the existing empirical research assumes that the relationship between neighborhood characteristics and individual outcomes is linear, and few studies test directly for nonlinearities. However, this question is critical from a policy standpoint; if the effect of each additional poor neighbor is the same, then distributing the poor more evenly across a metropolitan area might simply redistribute the cost of having poor neighbors, rather than reducing the total cost to society. Crane (1991) devotes considerable attention to the existence of nonlinearities; indeed, his core theory is predicated on their existence. In particular, Crane argues that neighborhood effects operate like epidemics, and that somewhere near the bottom of the distribution of neighborhood quality there should be a jump in the rate of increase. The prevalence of social problems, in other words, should be much greater in areas that have experienced an epidemic.

Accounting for individual and family characteristics

Many of the family and individual attributes that influence a person's life chances may also play a critical role in determining where that person lives. Thus, if studies of neighborhood effects fail to adequately control for the influence of these individual and family characteristics, they may falsely attribute to neighborhood what are truly the effects of the family's own strengths and limitations. Many relevant family characteristics—such as income, education, socioeconomic status, and race—are readily observable, and most studies control for one or more of them.

Other relevant family characteristics are harder to observe, however, and are generally not captured in empirical research. For example, parents who place a high value on education might choose a neighborhood with particularly well-regarded public schools. These same parents would probably also require their children to attend school every day and complete their homework, reward them for good grades, and supplement school assignments with extracurricular activities. If the children subsequently performed well in school, it might be because of good schools (a neighborhood characteristic) or the parents' demands (a family characteristic) or some combination of the two.

Most analysts assume that failure to adequately control for unobserved (but influential) family characteristics will yield empirical results that overstate the effects of neighborhood. But there may be examples in which the bias works the other way as well. Some parents, for instance, may choose to live in inferior neighborhoods because the cheaper housing there permits them to work fewer hours and spend more time with their children (Duncan, Connell, and Klebanov 1997). Without explicit measures of time spent with children, the estimated effect of neighborhood would be understated in this case. Whatever the direction of the bias, it is clearly important to take into account an extensive set of family characteristics. And several recent studies have experimented with new statistical methods for differentiating family effects from neighborhood effects.

Notably, it is possible that neighborhood conditions may affect the well-being of parents themselves (through, for example, job networks and social support) and thus influence children indirectly through their parents. If this is true, then controlling for family characteristics will lead us again to *understate* the role of neighborhoods in shaping the life chances of children and adolescents, capturing only the neighborhood effects that specifically influence children and not their families.

To date, researchers have taken four approaches to the issue of unobserved family characteristics. First, some studies have used nontraditional data sources to attempt to control for the critical parental characteristics that may be correlated with neighborhood location, such as an assessment of parental warmth and of the home learning environment provided by parents (Brooks-Gunn et al. 1993; Duncan, Brooks-Gunn, and Klebanov 1994). However, as Duncan, Connell, and Klebanov (1997) note, it is never clear whether a study has truly accounted for all the relevant effects. And it seems unlikely that one can find data that effectively measure all the critical unobserved factors of parenting, such as the quality of time spent with children or the values and morals communicated to them.

The second approach is to replace the neighborhood measure with an instrumental variable that is purged of its correlation with parenting ability. The key is to identify a variable that is highly correlated with the neighborhood characteristic of interest but not with any unobserved aspect of parenting. To illustrate, Evans, Oates, and Schwab (1992) estimate the proportion of disadvantaged students in school as a function of conditions in the metropolitan area. They then use the predicted proportion of disadvantaged students as an instrument for the actual share of disadvantaged students. Because the instrument is estimated

from metropolitan-area conditions, it should not be correlated with any unobserved characteristics of families in the sample. The problem with the instrumental-variables approach is that it is difficult to find a variable that is truly a determinant of neighborhood choice but not of children's outcomes.[12]

The third approach to dealing with the problem of unobserved family characteristics is to restrict one's analysis to siblings, who have presumably been exposed to identical family conditions. The problem, of course, is that most siblings have also been exposed to the same neighborhoods.[13] But both Plotnick and Hoffman (1996) and Aaronson (1997) find sufficient variation across siblings in neighborhood environments to undertake such an analysis. Further exploration of this innovative approach is clearly warranted.

Finally, perhaps the ideal way to deal with unobserved family effects would be to randomly assign people to neighborhoods, so that we are certain that any unobserved characteristics are uncorrelated with the community's attributes. The Moving to Opportunity (MTO) demonstration being conducted by the U.S. Department of Housing and Urban Development comes close to this ideal. Poor families living in public and assisted housing projects in high-poverty neighborhoods were invited to apply for rent vouchers, which would enable them to move to private homes and apartments. Eligible applicants were then randomly assigned to three treatment groups: (1) MTO experimental families had to move to low-poverty neighborhoods and received assistance in doing so; (2) comparison families could move anywhere in the metropolitan area; and (3) control families remained in their current public or assisted housing projects. Over the next decade, families in all three groups will be tracked and monitored to determine how their location and neighborhood conditions affect employment, income, and educational outcomes. These data will provide an unusually rich resource for researchers investigating the impacts of neighborhood environment on the well-being of both adults and children.

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[12] Evans, Oates, and Schwab (1992) acknowledge that their metropolitan-area instruments may miss important peer group effects. They point out, for instance, that the relevant factor in determining outcomes could plausibly be the relative difference between a teenager's school and the socioeconomic characteristics of the overall metropolitan area. In that case, metropolitan-area characteristics would clearly be inappropriate instruments.

[13] Other potential problems include the possibilities that unobserved sibling differences may influence parents' choices and that moves may be prompted by unobserved family changes.

Existing empirical research

The bulk of the empirical evidence conducted to date suggests that neighborhoods matter. Various neighborhood conditions appear to significantly affect a wide range of individual outcomes, at every stage in a person's life and across social and economic dimensions. High poverty rates, the absence of affluent or well-educated neighbors, high unemployment, high rates of welfare recipiency, and the absence of two-parent families have all been found to play a role in one or more important outcomes for children and families. However, although the effects of neighborhood environment are found to be significant in many studies, they are consistently much smaller than the effects of family characteristics. In other words, parents' income, education, and employment play a much larger role in shaping their children's behavior and well-being than any characteristics of the surrounding neighborhood.

We organized the existing empirical literature on the effects of neighborhood environment according to major life stages—infancy and preschool, the elementary school years, adolescence, and adulthood. The largest volume of empirical research has focused on how neighborhood conditions affect adolescents, and the evidence suggests that a teenager's neighborhood environment influences educational attainment, employment, sexual activity, teen parenthood, and involvement in crime. Comparatively little empirical research has explored the impacts of neighborhood conditions during the elementary school years, even though there are good reasons to hypothesize that school quality, peer groups, adult role models, and crime or violence may be very influential in the intellectual and emotional development of young children.

Infants and preschool children

It seems unlikely that neighborhood environment will exert a large independent influence on a child's development before he or she begins school. Nonetheless, neighborhood conditions may still contribute to a child's intellectual and emotional development, even at very young ages. First and foremost, neighborhoods may influence young children indirectly through effects on their parents. Several ethnographic studies suggest that parental access to supportive social and institutional networks may be a critical factor in the development of young children, but it is not clear whether these networks must be present in the immediate neighborhood to have a beneficial effect (Coulton

1996; Furstenberg 1993; Jarrett forthcoming). In addition, children living in poorer and more crime-ridden areas may spend less time outside and less time exposed to learning opportunities. Finally, young children may also be influenced by interactions in their neighborhood-based day care centers and preschools.

Despite these potential links, few quantitative studies have explored the extent to which neighborhood context influences early childhood development. The exception is a group of multidisciplinary researchers who have analyzed data that follow a sample of low-birth-weight, preterm infants during their first years of life (Brooks-Gunn et al. 1993; Duncan, Brooks-Gunn, and Klebanov 1994). These studies provide evidence that neighborhood matters in the development of very young children. The evidence is stronger with regard to neighborhood impacts on intellectual development than on behavior, and the presence of affluent neighbors appears to be a more critical neighborhood attribute than the presence of poor neighbors. Still, the effects found in most cases are small—considerably smaller than the effects of family-level resources and support—and none of these studies attempts to control for the endogeneity of neighborhood location.

Elementary school children

As children reach school age, their frame of reference broadens beyond their parents to include teachers, classmates, coaches, and the parents and families of classmates and friends. They also begin to understand the social relationships surrounding them and to develop conceptions about what is normal and appropriate behavior based on their observations of adults and older peers. Thus, while families are likely to remain children's dominant source of information, it seems likely that neighborhood environment would play an increasingly important role during the elementary school years.

Surprisingly, virtually no researchers have explored this role. Almost all the research concerning environmental influences on elementary school students instead addresses the narrower question of the relationship between elementary school racial composition and academic achievement (Jencks and Mayer 1990b; Wells and Crain 1994). As for broader neighborhood effects, the one study that focuses exclusively on elementary school children finds little effect (Halpern-Felsher et al. 1997). But we hesitate to conclude from this that neighborhood

environment is largely irrelevant for young children. For one thing, there are reasons to question the generalizability of this small-scale study. Second, the existing research consistently concludes that neighborhood residence matters during the elementary school and high school years *combined* (Aaronson 1997; Corcoran et al. 1989; Duncan 1994; Haveman and Wolfe 1994; Rosenbaum 1991). And studies exploring the relationship between elementary school composition and academic achievement typically find modest but significant effects (Jencks and Mayer 1990b; Wells and Crain 1994). More research is clearly needed to understand how neighborhood residence influences elementary school children.

Adolescents

The potential impact of neighborhood environment is most compelling during the adolescent years, as children spend less time with their immediate families and more time interacting with peers. Indeed, researchers have found that adolescents spend roughly twice as much time with peers as they spend with their parents or other adults (Connell and Halpern-Felsher 1997). Not surprisingly, then, most of the research on neighborhood effects has focused on teenagers and young adults. Because the studies of teenage behavior are so numerous and diverse, our discussion of the empirical evidence is divided into four subject areas: educational attainment, employment, sexual activity and pregnancy, and crime.

Educational attainment. The existing literature on adolescent educational attainment provides general support for the notion that neighborhoods play a role (Aaronson 1997; Brooks-Gunn et al. 1993; Case and Katz 1991; Clark 1992; Crane 1991; Datcher 1982; Dornbusch, Ritter, and Steinberg 1991; Duncan 1994; Duncan, Connell, and Klebanov 1997; Garner and Raudenbush 1991; Haveman and Wolfe 1994). But the evidence is contradictory as to which neighborhood characteristics matter most and which adolescents may be most vulnerable to neighborhood effects. Research by Crane (1991) and Dornbusch, Ritter, and Steinberg (1991) suggests that African-American teenagers are affected more adversely than whites by living in high-poverty areas. Yet Duncan (1994), Brooks-Gunn et al. (1993), and Clark (1992) find that black adolescents are the least affected by the benefits of affluent neighbors. And the results of Plotnick and Hoffman (1996) and of Evans, Oates, and Schwab (1992) suggest that researchers should be cautious in interpreting the

coefficients on neighborhood variables in models that have not controlled for the endogeneity of neighborhood location.[14]

Employment. The evidence on the effects of neighborhood composition on labor market outcomes for youth is also mixed. Of seven quantitative studies reviewed, five find some relationship between neighborhood characteristics and labor market success (Case and Katz 1991; Corcoran et al. 1989; Datcher 1982; Massey, Gross, and Eggers 1991; O'Regan and Quigley 1996), and there is no consistency regarding which neighborhood measures appear most important to which outcomes. As O'Regan and Quigley (1996) point out, the high correlation among relevant neighborhood characteristics may simply render such precision impossible. The three studies that use purely cross-sectional data (Case and Katz 1991; Massey, Gross, and Eggers 1991; O'Regan and Quigley 1996) find the strongest neighborhood effects. In other words, it may be that *present* location is more relevant to labor market outcomes than where a person grows up. Consistent with the ethnographic literature on this subject, this finding would seem to support the importance of social networks in linking people to job opportunities, and it suggests that neighborhood effects may not always persist as one moves to a new location.

Sexual activity and pregnancy. Virtually all of the existing empirical research points to some relationship between neighborhood environment and sexual activity or pregnancy among adolescents (Brewster 1994; Brewster, Billy, and Grady 1993; Brooks-Gunn et al. 1993; Crane 1991; Hogan, Astone, and Kitagawa 1985; Hogan and Kitagawa 1985; Ku, Sonenstein, and Pleck 1993; Mayer 1991). Yet three of the most recent analyses raise some doubts (Evans, Oates, and Schwab 1992; Haveman and Wolfe 1994; Plotnick and Hoffman 1996). None of these three studies, two of which attempt to control for unobserved family effects, finds an independent link between neighborhood environment and either sexual activity or pregnancy.[15] These

[14] Notably, other studies that have attempted to control for the unobserved family characteristics—either through an instrumental-variables approach or through a family fixed-effects model—find that significant neighborhood effects persist (Aaronson 1997; Case and Katz 1991; Duncan, Connell, and Klebanov 1997).

[15] Evans, Oates, and Schwab (1992) find that the effect of school composition (in particular, the proportion of disadvantaged students) on teenage pregnancy disappears in a two-stage model that considers school choice to be endogenous. Plotnick and Hoffman (1996) examine sets of sisters to control for unobserved family effects and find that the apparent link between pregnancy and neighborhood conditions disappears.

results suggest some caution in interpreting the findings of other studies that neighborhood matters in shaping sexual behavior and outcomes among adolescents.

Crime. Surprisingly few studies explore how neighborhood environment might affect criminal behavior. Clearly, crime rates, and violent crime rates in particular, vary dramatically across communities and tend to be particularly high in poor, inner-city neighborhoods (Turner and Ellen 1997). Building on the "social disorganization" tradition that developed from the seminal work of Shaw and McKay (1942), a number of sociologists and criminologists have attempted to understand why certain communities tend to have persistently high rates of crime and delinquency. Yet virtually all the quantitative empirical work in this area has simply analyzed aggregate neighborhood data, which makes it difficult to dissect the independent roles of individual and community factors.

The ethnographic literature strongly suggests that neighborhood environment and social interactions play an important role—along with individual and family characteristics—in pushing an adolescent toward (or away from) criminal activities (Anderson 1990; Sullivan 1989). As for quantitative studies, those that rely on aggregate neighborhood data consistently find a relationship between neighborhood environment and crime. Indeed, two recent studies that use more sophisticated modeling point strongly to the importance of social interactions and cohesion in predicting rates of crime and violence across neighborhoods (Glaeser, Sacerdote, and Scheinkman 1995; Sampson, Raudenbush, and Earls 1997).

The results of the few studies that actually combine individual and contextual data, by contrast, have been fairly inconclusive (Johnstone 1978; Reiss and Rhodes 1961). Yet in what is perhaps the most recent and careful study, Case and Katz (1991) find strong evidence that youth are more likely to commit crimes and use drugs if a greater proportion of the teenagers and young adults who live near them engage in similar behaviors.[16]

In summary, most of the studies considering the effects of neighborhoods on adolescents have found evidence that neighborhood environment matters. The evidence is probably strongest for educational outcomes and weakest for crime. Once again, we say this with caution, since few studies in any of these areas

[16] Case and Katz (1991) find that this effect persists in a two-stage model that attempts to control for the endogeneity of peer group.

effectively control for the endogeneity of neighborhood location, and two of the five that control for unobserved family effects find that neighborhood effects diminish or disappear (Evans, Oates, and Schwab 1992; Plotnick and Hoffman 1996). It is also difficult to conclude much about the precise nature of the mechanisms through which neighborhood effects operate. Some of these studies lend support to peer effects, others to collective, adult socialization, but most of them are largely silent—and simply demonstrate a correlation between general neighborhood distress and inferior economic and social outcomes.

Adults

The influence of neighborhoods on adults is likely to be quite different from their impact on children and adolescents. In particular, neighborhoods are likely to play a smaller role in shaping values and behavior. Instead, the impact of neighborhood is more likely to occur through the influence on residents' access to services, information, and economic opportunities.

Studies of the Gautreaux program provide the best evidence that neighborhood plays a role in shaping adult employment outcomes. Participants in the program received Section 8 certificates to move into predominantly white neighborhoods either in central-city Chicago or in the surrounding suburbs. Moving to the suburbs seems to have significantly improved the labor market prospects for participating adults. Of the adults who were employed before they moved, 74 percent of those who moved to the suburbs were employed after the move, in contrast to just 64 percent of those who chose the city. And of the suburban movers who were unemployed before the move, 46 percent found jobs after moving, in contrast to just 30 percent of the city movers (Rosenbaum and Popkin 1991).

We found only two other studies that attempted to quantify the impact of a neighborhood's socioeconomic characteristics on adult labor market outcomes, and both study the influence of neighborhood residence on the probability of receiving welfare. After controlling for a variety of personal characteristics, Osterman (1991) finds that the zip code a woman resides in significantly influences her probability of receiving public assistance. Vartanian's (1992) results are much weaker, but he still finds some evidence that neighborhood employment rates matter for some groups of women.

The vast majority of empirical research examining the relationship between neighborhood residence and labor market outcomes has emphasized the importance of physical distance, rather than social composition. The findings, however, are inconsistent. Of six recent literature reviews on this topic, three find substantial support for the spatial mismatch hypothesis (Ihlanfeldt 1992, 1997; Kain 1992), two find moderate support (Holzer 1991; Mayer 1996), and one finds the literature too mixed to allow a conclusion (Jencks and Mayer 1990a). Many of the most recent studies on spatial mismatch—which tend to use both better data and superior methods—appear to be finding stronger effects. But the studies that do the best job of controlling for endogeneity are those that focus on youth, not adults.

In sum, research conducted to date provides only tentative evidence that neighborhood location, as well as socioeconomic composition, may influence employment outcomes for adults. It may simply be that neighborhoods have smaller effects on adults than on teenagers, but it also may be that less work has been done exploring neighborhood influences on adult outcomes.

Priorities for future research

Despite the growing body of evidence that neighborhood conditions play a significant role in shaping individual outcomes, the existing research literature offers scant guidance for policy makers. No consensus emerges about which neighborhood characteristics affect which outcomes, or about what types of families may be most vulnerable to problems in the neighborhood environment. On these questions, the existing empirical evidence is inconsistent, incomplete, and sometimes contradictory. Moreover, empirical studies completed to date provide little insight into the causal mechanisms through which neighborhood environment influences a person's behavior or life chances.

Although the effects of neighborhood environment are found to be significant in many studies, they are consistently much smaller than the effects of family characteristics. In other words, parents' income, education, and employment play a much larger role in shaping their children's behavior and well-being than any characteristics of the surrounding neighborhood. Moreover, two recent studies that have done a particularly careful job of controlling for unobserved family characteristics find no independent neighborhood effects, casting some doubt on the robustness of results from other studies (Evans, Oates, and Schwab 1992; Plotnick and Hoffman 1996). However, it is important to note

that several other studies that have used similar statistical techniques or experimental designs to control for unobserved family characteristics still find that neighborhood matters (Aaronson 1997; Case and Katz 1991; Duncan, Connell, and Klebanov 1997; Rosenbaum and Popkin 1991). Thus, we can only conclude that findings from studies that fail to account fully for family characteristics should be interpreted with caution and that future research should seek to strengthen the available methodological tools for addressing this problem.

The difficulty of controlling for unobserved family effects is only one of several methodological challenges involved in quantifying the effects of neighborhood environment on individual outcomes. Better methods are also needed to define meaningful neighborhood boundaries, measure the neighborhood characteristics that really make a difference in residents' lives, collect information about neighborhood characteristics for relevant periods, and test for nonlinearities in the relationship between neighborhood conditions and individual outcomes. Failure to successfully address these methodological challenges is likely to yield results that understate the effects of neighborhood conditions.

However, the next generation of research on neighborhood effects needs to do more than simply refine the statistical tools for determining whether (or how much) neighborhood environment matters. Specifically, we suggest three priorities for future research. First, two serious gaps in the existing empirical literature demand attention: the elementary school years and the effects of neighborhood crime and violence. Second, in addition to developing better methods for controlling for unobserved family and individual characteristics, researchers should systematically explore potential interactions between neighborhood and family or individual effects. Last, and perhaps most important, future research should investigate the mechanisms through which neighborhood environment affects individual outcomes, explicitly testing hypotheses about causal connections. Each of these research priorities is discussed more fully in turn.

Critical empirical gaps

Very little empirical investigation has focused on neighborhood effects during the elementary school years, even though there are good reasons to suspect that the environment in which children grow up and go to school affects their intellectual and emotional development. During the elementary school years, children begin to form intense, regular relationships with other

children and with adults outside their families. Their frame of reference broadens to include teachers, coaches, classmates, and the parents and families of classmates and friends. Moreover, as children reach school age, they begin to understand their surroundings more fully, to develop notions of what "normal" behavior is, and to internalize values based on the behavior of adult acquaintances and older peers. The existing empirical literature on this age group focuses almost exclusively on the composition of public schools. Outcomes for elementary school children may be more subtle and difficult to observe than those for adolescents, but we clearly need a more complete picture of how young children are influenced by the neighborhood environment in which they grow up.

The second major gap in the existing empirical literature involves the impact of living in a high-crime neighborhood. Poor families who applied to participate in the MTO demonstration reported that their primary reason for wanting to move out of the high-poverty neighborhoods in which they lived was to protect their children from crime, drugs, and violence (U.S. Department of Housing and Urban Development 1996). But in fact we know very little about whether living in a high-crime neighborhood increases the risk of becoming involved in criminal activities. And little empirical research focuses on the impacts of a violent and chaotic neighborhood environment on the emotional and moral development of young children, despite the growing belief that watching violence depicted on television and in movies has a harmful effect (Martinez and Richters 1993).

Interactions between neighborhood and family or individual effects

Most researchers investigating the effects of neighborhood environment recognize the possible endogeneity of unobserved family or individual effects, and many attempt to control for it. As discussed earlier, this is a serious methodological issue that warrants further investigation. However, the relationship between neighborhood and individual effects may be complicated in other ways that raise additional challenges for researchers. A few studies suggest that families with limited economic resources may be particularly vulnerable to neighborhood impacts or that environmental conditions can undermine the positive influence of a strong family. But these hypotheses have not yet been extensively investigated. Similarly, several studies suggest that boys and girls are affected differently by their neighborhood environment and that neighborhood impacts differ for blacks and

whites as well. And finally, a few recent studies find that African-American boys do not benefit as much as whites from the presence of affluent, educated, or employed neighbors, unless these neighbors are African American.

These potential interactions between neighborhood and personal or family influences may actually conceal evidence of neighborhood effects. For example, the average effects of neighborhood conditions across all households could appear small even though the effects for some subgroups are large. And if the effect of particular neighborhood attributes is significant but different across subpopulations, estimates based on pooled data might be entirely misleading. Therefore, we suggest three hypotheses about the relationship between neighborhood and family that have not been systematically tested by empirical researchers. Each of these hypotheses can and should be rigorously tested with empirical data.

First, neighborhood environment may be more influential for families who lack social and economic resources than for those who can replace what is missing in their immediate surroundings. The most obvious example involves the connection between the quality of local public schools and children's educational attainment. If parents lack the financial resources or the knowledge to supplement the education that their children receive, then the quality of neighborhood schools is likely to make more of a difference for their children's performance. Thus, the role of neighborhood may be greater for residents with low incomes or low socioeconomic status than for families with more resources. Similarly, single-parent families—where time and personal resources of adults are stretched thin—may depend more on support from neighbors and neighborhood institutions than families in which two parents live together.

Second, specific aspects of neighborhood environment may matter more for some people than for others. As discussed earlier, some evidence suggests that African-American boys may not benefit from the presence of middle-income neighbors unless these neighbors are African American. It is also possible that girls are more influenced than boys by high rates of teen childbearing in their immediate surroundings, while boys are more likely to be influenced by neighborhood crime rates. Analysis that simply measures the average effect of neighborhood conditions across all individuals may be obscuring differential impacts of specific variables for some groups of families or individuals.

Finally, neighborhood conditions may influence children not only directly, but also indirectly through effects on their parents. Brooks-Gunn et al. (1993) hypothesize that neighborhood conditions influence three distinct aspects of family life that tend to filter down to children: family economic resources, parental characteristics (such as education and family structure), and parenting behaviors. For example, if adults living in an isolated, high-poverty neighborhood lack access to information about jobs in the surrounding suburbs, their rate of employment and average wages may be reduced. These attributes of the parents may then influence the well-being of their children. Empirical efforts to control for the employment status of parents in order to measure the independent effect of neighborhoods on children would obscure this kind of indirect neighborhood effect.

Causal mechanisms

The most important challenge for future research is to identify and test the causal mechanisms that link neighborhood conditions to individual outcomes. Although researchers and policy makers have articulated a number of distinct hypotheses about these mechanisms, these hypotheses have not been explicitly tested in the empirical literature. As long as neighborhood effects continue to be treated as a "black box," researchers will not be able to explain *how* neighborhood conditions influence individual outcomes, and consequently they will have little basis for recommending or assessing policy interventions designed to counter the effects of neighborhood environment.

Qualitative methods offer a promising approach for opening up the black box of neighborhood effects. A wide variety of research activities can be characterized as qualitative, ranging from in-depth, long-term participant observation in a neighborhood (Anderson 1990; Howell 1973; MacLeod 1995) to open-ended interviews lasting several hours (Anderson 1991; Kasinitz and Rosenberg 1996) or even focus groups (Jarrett 1996). Such qualitative accounts can offer a vivid and detailed portrait of neighborhood life and relationships not available from quantitative data alone. In past decades, qualitative researchers have provided useful insights into urban social issues not always well understood by policy makers and have helped define the content and direction of urban poverty research and policy (Anderson 1978; Gans 1962, 1967; Liebow 1967; Stack 1974; Whyte 1993).

Qualitative research alone cannot answer all our questions about the possible influence of neighborhood environment on families

and children. It can, however, supplement quantitative research methods in critical ways. It can capture conditions within the geographic boundaries of neighborhoods as defined by residents, rather than by zip codes or census tracts. And qualitative methods can help disentangle neighborhood effects from family and individual characteristics by assembling detailed information on family histories and individual decision-making processes and highlight different strategies that families use to shield their children from the negative effects of their community. Perhaps most important, by documenting how individuals are affected by aspects of their neighborhood environment on a day-to-day basis, qualitative research, and in particular ethnography, can cast new light on causal mechanisms that might not be statistically discernible. In conjunction with more generalizable results from quantitative analysis, qualitative research can both suggest hypotheses for further investigation and provide explanations for statistically significant results.

In summary, although the empirical record generally confirms that neighborhood matters, it offers virtually no guidance for policy—about how to help families choose healthy neighborhoods, how to improve existing neighborhoods to better support families and children, or how to help residents of distressed neighborhoods avoid or overcome the problems that surround them. Policy makers and practitioners in both government and the nonprofit sector need reliable research findings that can help them design and implement more effective interventions for both poor families and poor neighborhoods. For example, programs that subsidize the development of housing for poor families need site selection criteria to determine what types of neighborhoods make good locations for assisted housing. Programs that help poor families move to decent and affordable housing in the private market need information about the types of neighborhood conditions families should avoid. Community revitalization initiatives need to know what assets make a neighborhood a healthy place, so that they can prioritize their investments. And social service agencies that provide mentoring and support services for young people living in distressed neighborhoods need to know how role models and networks can supplement or substitute for the influence of adults and peers living in the immediate community. To be useful, future research should not limit its attention to the question of *whether* neighborhood matters but begin to attack the more difficult questions of *how* and *for whom*.

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