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Does Housing Matter for Poor Families? A Critical Summary of Research and Issues Still to be Resolved

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Over the course of its 75-year history, the goal of assisted housing policy has been to help low-income households live in physically decent and affordable housing. An important, if not always explicit, justification for government intervention has been the belief that decent and affordable housing will yield important social benefits to both the occupants and society, such as better health, fewer behavior problems, greater educational attainment, and increased labor force participation.[1] While the tug of war continues in and out of government about how housing policy goals should be accomplished, its persistence affirms that taxpayers care enough about how others are housed to support earmarked subsidies for housing (Aaron, 1972; Mason, 1982).

But does improving housing in fact carry with it benefits in addition to the value of the housing? In his seminal 1980 monograph, John Weicher said "No": "More than 40 years' experience with public housing and other subsidized programs, and a large body of independent research findings have provided little evidence that better housing does, indeed, yield benefits to society over and above the improvement in housing itself" (Weicher, 1980, p. 8).

Is Weicher's negative conclusion still warranted? Significant strides have been taken in research on the effects of housing on individuals since Weicher's book, both in number and in methodological rigor. My intent in this paper is to contribute to answering this question through a critical review of the research since Weicher's

[1] This argument was stated in the negative in the period preceding passage of the first housing act in 1937. For example, Senator Taft argued at that time that federal aid was justified to avoid the harmful effect of substandard housing on residents (Foard & Fefferman, 1966). The logical extension of this argument was, and is, that if substandard housing has harmful effects, decent housing has beneficial effects.

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verdict on the effects of housing on the lives of residents, particularly children. My answer is that we still don't know for sure, and I identify issues that need to be resolved before a definitive answer can be given.

I begin with two brief sections setting the policy context for the ongoing housing policy debate on the social benefits of housing. I then delineate the particular focus and approach of my paper. Next is a five-section critical review of the last roughly quarter century of housing policy research. This is followed by a discussion of outstanding measurement issues before my concluding section.

THE SOCIAL BENEFITS OF HOUSING: BACKGROUND AND HISTORICAL CONTEXT

Housing has always had an uneasy relationship with the rest of the social welfare safety net, at least in part because housing has never been strictly a poverty issue. By far, the largest government housing subsidies flow to the middle class and affluent through the mortgage interest deduction, for which poor families typically do not qualify. But even in the housing assistance programs, recipients once included substantial numbers of non-welfare families (that is, the lower middle class and "working poor"). This changed in the 1980s, as larger and larger proportions of very poor recipients were given priority for housing assistance. In 2001, for example, the latest year for which data are readily available, roughly 29 percent of single mothers with at least one child who received housing assistance also received welfare (Harkness & Newman, 2006) and about 25 percent of all single mothers receiving welfare also received housing assistance (U.S. Department of Health and Human Services [HHS], 2001).[2] Because of this substantial and increasing overlap between those receiving cash assistance and those receiving housing assistance, housing should be included in any list of government approaches to addressing poverty and disadvantage.

Housing also deserves attention because it is such a large item in the social welfare budget. Housing assistance programs cost about $37 billion a year (OMB, 2007) and serve about 5 million households—a larger government expenditure serving more people than Temporary Assistance for Needy Families, the successor to Aid to Families with Dependent Children.

That decent housing can improve the lives of residents has its roots in two squalid blots on the urban landscape of late 19th and early 20th century America: the shacks that housed workers in the burgeoning industrial centers and the slums that housed the very poor and the new immigrants teeming into cities (Mitchell, 1985). Slums were unhealthful and unsafe, and were associated with a range of social pathologies from crime to social disorder (Mitchell, 1985). Journalist Jacob Riis dramatically publicized the inhuman conditions of the slums in his widely read *How the Other Half Lives: Studies Among the Tenements of New York* (1890) (see von Hoffman, 1998). Since these degraded environments were viewed as a threat to the physical, social, and moral well-being of their residents (Mitchell, 1985), the logical remedy seemed to be decent and safe housing.

The U.S. Housing Act of 1937 (P.L. 93-383, Sec. 2) inaugurated a national policy of assisted housing for the poor. This legislation created a national low-rent public housing program to be administered by local public agencies (which became known as public housing authorities). Senator Robert Wagner of New York, who coauthored the act with Henry Steagall of Alabama, argued that "The disease and crime that are generated in slum areas produce an appalling social waste. . . . [T]he real benefits of a low-rent housing program must be gauged in broader terms" (Wagner, 1936).

The landmark 1949 Housing Act memorialized these concerns, stating the nation's housing goal as a "decent home and suitable living environment for every American

[2] Based on the estimated number of adult female recipients who are not married. This estimate was derived by applying the nonmarried percentage of all adults to adult female recipients (HHS, 2001).

family" (P.L. 87-71, Sec. 2). The debate surrounding this act demonstrates that "the harmful effects of substandard housing on their occupants" and the role of "a policy of assisting housing, thereby relieving poverty and hardship" were prime motivating factors in passing this law (Foard & Fefferman, 1966, pp. 105, 107).

The breadth of the expected benefits of "good housing" is worth emphasizing in light of contemporary social policy debates about the most effective way for the poor to achieve economic independence. Beyond salutary effects on health, improved housing was expected to achieve the broader goals of social and economic advancement. Throughout the evolution of housing policy, some advocates and policymakers have argued that housing assistance for the poor should be designed so that it promotes human development, and that the country should gauge its housing progress by how well it achieves this human development goal. In 1936, James Ford's book *Slums and Housing* set forth what may be the first published conception of the broader social benefits of housing assistance policy (Ford, 1936). Ford described a housing program "in which each home will be a positive element in the self-development of its occupants and of the community." The housing attributes he identified as essential for achieving "self-development" were predominantly the physical features of the home, such as its physical adequacy, safety, and space (that is, privacy and lack of crowding).

Ford was not alone in his vision. The authors of *A Housing Program for the United States*, the basis for the Housing Act of 1937, believed that subsidized housing would serve as a means for human development (cited in Wood, 1982). Scholars of the day attempted to quantify the costs of slums, including crime, squalor, and low productivity. They argued that rehousing these households would be cost effective in part because their social and economic lives would be improved. But not everyone was convinced. An early report warned: "Many claims have been made that public housing will lessen certain social evils and improve living conditions of the families housed. These claims will have to be substantiated" (U.S. Housing Authority, 1940). But this warning was not heeded and a comprehensive and systematically developed information base on the effects of housing on a wide range of life outcomes was never developed.

Historically, interest in the deleterious effects of poor housing and the beneficial effects of decent housing was not the sole preserve of housing policymakers and federal housing agencies. In the late 1920s, for example, welfare agency staff were directly involved in evaluating the housing of clients and assisting them, if necessary, to find suitable housing. According to a 1928 survey of Mothers' Aid Bureaus in 10 localities, all the agencies evaluated the physical adequacy of mothers' aid families and sought to relocate those living in inadequate conditions (Bogue, 1928).

Although this hands-on approach was abandoned shortly thereafter, the potential role of housing in helping welfare families advance continued to surface from time to time. In 1969, under the leadership of Wilbur Cohen, the Department of Health, Education, and Welfare (HEW) produced what is probably the most important document on the role of housing in the economic and social advancement of the very poor: *The Role of Public Welfare in Housing* (Cohen, 1969). Based on an analysis of data on the housing status of welfare recipients, the report made far-reaching recommendations to the House Ways and Means Committee and the Senate Committee on Finance regarding methods for improving the housing of welfare recipients. HEW declared in no uncertain terms that it viewed decent housing as a route to economic independence: ". . . [HEW is] committed to the premise that improved housing for welfare recipients is essential to the success of the entire social and rehabilitation program designed to move this group of poor people toward self-support, self-care, and a better quality of life."

To achieve decent housing for welfare recipients, the report recommended that Congress (1) establish decent housing as a requirement for welfare programs; (2) require the states to fund their shelter grants at a level that would allow recipients

to obtain decent housing; and (3) provide federal financial assistance to assure that these goals were met.[3] Policy interest in the role of housing in the lives of welfare recipients has been only sporadic since the late 1960s. Arguably, the best recent opportunity to resurface the housing issue was in the debate leading up to passage of the 1996 welfare reform legislation, and the continuation of that debate when that legislation was reauthorized in 2005 (P.L. 109-171, Title VII). But although there was an energetic conversation about the roles that child care, transportation, and health care would play in moving welfare recipients to economic self-sufficiency, housing was left out. At least one plausible explanation for housing's orphan status is the lack of hard evidence that could be brought to the table—echoing a similar concern voiced more than 60 years earlier by the U.S. Housing Authority on the eve of World War II.

FEDERAL HOUSING ASSISTANCE POLICY FOR THE POOR: A BRIEF OVERVIEW

Unlike food stamps and Medicaid, federal housing assistance for the poor is not an entitlement. Some estimate that more than three times as many households are eligible for assistance as receive it (Braconi, 2001). Those not receiving housing assistance fend for themselves in the private housing market. Therefore, research on the housing status of the poor largely reflects how the poor manage in the absence of housing assistance directed at them rather than the results of such assistance.

Federal housing assistance policy and programs are largely the purview of the U.S. Department of Housing and Urban Development (HUD),[4] which administers three major types: (1) public housing, which consists of housing units typically owned and operated by local public housing authorities; (2) privately owned developments that charge affordable rents as determined by HUD in exchange for the concessionary new construction or rehabilitation financing they received from HUD; and (3) housing vouchers, which underwrite the difference between 30 percent of the household's income and an affordable rent. In all three, the physical adequacy of the housing is ensured by annual housing inspections.

Affordability is established in two primary ways: first, by setting "fair market rents" for every housing market (typically the metropolitan area or county) that stipulate the maximum rents that HUD will subsidize,[5] and second, by limiting the tenant's rent payment to 30 percent of income, the long-standing rule of thumb used to define affordable housing. By contrast to other safety net programs, income eligibility is not defined by the official poverty threshold but by a relative standard—the fraction of the median income in the metropolitan area where the recipient lives, typically around 50 percent.[6]

In 2000, there were approximately 5 million units of HUD assisted housing: roughly 1.3 million public housing units, 1.7 million privately owned subsidized units, and 1.8 million housing choice vouchers. The first two are referred to as "supply-side" subsidies or "project-based" assistance because the subsidies are given to the developer or owner and are tied to a particular building. Tenants cannot take their

[3] Although these proposals were never acted upon, there was some increased activity regarding housing quality in the form of cooperative arrangements between welfare departments in 18 states and their respective jurisdictions' code enforcement agencies (Cohen, 1969).

[4] For simplicity, I limit this discussion to the assisted housing programs of HUD, which account for the largest share of assisted housing in the nation. Other federal programs are the Low-Income Housing Tax Credit administered by the Treasury Department and programs of USDA Rural Development (formerly the Farmer's Home Administration). Most states and some localities also have housing programs for the poor, many of which follow principles similar to those of HUD programs.

[5] These rents are updated annually and currently are set at the 40th percentile of rents for each housing market.

[6] Therefore, income eligibility cutoffs for housing programs vary geographically, unlike the federal poverty threshold.

housing subsidies with them if they move. Since the third type of subsidy is assigned to the tenant, it is considered a "tenant-based" or "demand-side" subsidy. In this case, tenants keep the housing subsidy even if they move.

MY FOCUS AND APPROACH

My review focuses solely on attributes of the dwelling unit itself rather than the full "housing bundle," which includes attributes of the neighborhood surrounding the dwelling, the characteristics of neighbors, and the amenities and services available in the community.[7] I do so not because these latter topics are less important or less studied; in fact, "neighborhood effects" has recaptured the interest of economists and sociologists after a long dormant period (for example, Moffitt, 2001), and there is extensive research on, and state and local policy interest in, regional variations in amenities and quality of life (for example, Blomquist, Berger, & Hoehn, 1988; Gyourko, Kahn, & Tracy, 1999). I concentrate on the dwelling, in part, because it hasn't received as much attention from a broad range of social policy analysts and, in part, because the housing unit lies at the heart of public policies targeted to housing.

Because my objective is to present evidence-based findings that meet basic standards of scientific rigor and that are derived from samples whose generalizability properties can be identified, this review focuses on quantitative studies of individual data collected through systematic sample surveys. I add insights gained from a number of qualitative studies where relevant.

Within the dwelling unit, I focus on five features that have defined federal housing policy since its inception and that are particularly relevant for examining the potential social benefits of housing: (1) housing quality, (2) crowding, (3) affordability, (4) subsidized housing, and (5) homeownership. Neighborhood effects and racial discrimination, though highly relevant to the social benefits perspective, are excluded for a number of reasons: They move beyond the individual dwelling unit that is my focus; they have been reviewed carefully elsewhere (for example, Duncan, Connell, & Klebanov, 1997; Ellen & Turner, 1997; Goering, 2007; Jencks & Mayer, 1990; Sampson, Morenoff, & Gannon-Rowley, 2002; Yinger, 1995); and each is so significant in its own right that squeezing it into this review would not do it full justice. These discussions are followed by a brief section on measurement issues.

Each of the five dimensions I discuss deserves a further word of clarification. *Housing quality* represents the physical adequacy of the dwelling. *Crowding* is the "fit" between the size of the dwelling and the size and composition of the household(s) occupying it. *Housing affordability,* in which affordable is conventionally defined as spending 30 percent or less of income on housing, acts as an income supplement, because housing subsidies free up cash income that can be spent on other necessities.[8] Recognition of this substitutability has led, starting in the early 1970s, to a number of proposals by both Democrats and Republicans to combine the funds going to cash welfare with those going to in-kind benefits, such as housing assistance, into funding for a guaranteed minimum income (Newman & Schnare, 1992). The argument is that families know best how to allocate their spendable income among necessities, and they simply need more of it to allocate as they see fit. None of these schemes gained enough support to become law, however, possibly because the American public is less willing to give poor people cash than to tie the public benefit to the purchase of "suitable" necessities (for example, Moffitt, 2003a).

[7] As noted later in this review, one of the flaws of much past housing research is the difficulty in teasing out the net effects of housing when other features of the housing bundle are not taken into account.
[8] I thank an anonymous reviewer for couching the issue in these stark terms.

The evolution of U.S. social policy demonstrates that housing affordability was claimed as a housing policy issue as far back as the 1937 Housing Act, which initiated the low-rent public housing program to serve tenants whose incomes were too low—and therefore could not afford—housing supplied by the private sector (Wagner, 1936; Wyatt, 1946).[9] Since then, affordability has been the target of key provisions in subsequent housing legislation. Prominent examples range from the Brooke Amendment in 1969,[10] limiting rents in federally assisted housing to 25 percent of household income (and subsequently increased to 30 percent[11]), to the Moving-to-Work demonstration, authorized in 1996,[12] allowing public housing authorities to experiment with rent-to-income ratios as well as virtually all other rules governing housing programs.

My fifth housing dimension, *subsidized housing*, is a catch-all category for the whole range of assisted housing programs for the poor. Since these programs are the embodiment of the nation's housing policy for the poor, they belong in a policy-oriented review of research on whether housing matters for poor families. *Homeownership* belongs on this list because, since the 1920s, public policy has put its money where its mouth is in promoting homeownership throughout the nation. Tax incentives for homeowners are estimated to have cost the federal government $79.9 billion in Fiscal Year 2007 (OMB, 2007), and HUD's mission statement lists increasing homeownership as an explicit goal (HUD, 2006).

PHYSICAL HOUSING QUALITY

Of the five aspects of housing that are my focus, the physical adequacy and safety of the dwelling unit[13] is often what people think about when the topic of "housing" first comes up. Quality has also generated the largest number of studies from the widest range of disciplines, including public health, medicine, and the social sciences. At the same time, this body of work, which primarily examines the effect of housing quality on health (Krieger & Higgins, 2002), has been described as lacking in conceptualization and measurement, with housing "treated as a residual category—an unspecified black box of somewhat mystical influences on health" (Macintyre, Ellaway, & Cummins, 2002).

Most of this research addresses the pathological consequences of specific deleterious conditions in the dwelling, work that has a long history. The early studies, which focused on such attributes as safety, ventilation, and fenestration, played a critical role in the establishment of city departments of health and of housing codes. More recent work focuses on specific environmental hazards or serious maintenance deficiencies including lead paint, asbestos, cockroaches, dust mites, mice, and rats. From the earliest studies to the current ones, an implicit theme has

[9] Veterans' housing needs were a major motivation for the bill, which was referred to as the Veterans Emergency Housing Program (Wyatt, 1946, p. 274).
[10] Public Law 91-152, 83 Stat. 379 (December 24, 1969).
[11] Public Law 97-35, § 322(a), 5 Stat. 400 (August 13, 1981).
[12] Public Law 104-134, 110 Stat 1321 (April 26, 1996).
[13] One example of an operational measure of housing quality is the following index of substandard housing that HUD's Office of Policy Development and Research has coded using the American Housing Survey. The AHS substandard measure emulates both the housing quality standard HUD uses in its annual inspections of housing it subsidizes, and local housing codes. According to the AHS, units are considered substandard if they have any of the following problems: (1) lack of complete plumbing; (2) lack of complete kitchen facilities; (3) two or more interior problems (leaking roof, leaking basement, open cracks or holes in walls or ceilings, holes in floors, peeling paint or broken plaster of one square foot, evidence of mice or rats in the last 90 days); (4) two or more common-area problems (no working light fixtures in common hallway, broken stairs, broken stair railings, no elevator in buildings of four or more stories); (5) heated by unvented room heaters; (6) three or more toilet breakdowns lasting six or more hours in the last 90 days; (7) three or more heating breakdowns of six or more hours last winter; (8) one or more rooms without a working wall outlet; (9) fuses blown or circuit breakers tripped three or more times in last 90 days; (10) exposed wiring.

been whether improved housing can reduce the "health gradient" or health discrepancy between rich and poor (Catalano & Kessell, 2003).[14] Some researchers refer to this line of inquiry as "contextualizing risk factors" in order to understand the relationship between poverty and health (Saegert & Evans, 2003).

Much of the recent and continuing work focuses on children. One body of research, for example, shows an association between asthma, poor air quality, and exposure to allergens (Burridge & Ormandy, 1993; Matte & Jacobs, 2000; Wright, 1998). Lead paint has been linked to neurological damage in children under age six (Krieger & Higgins, 2002).[15] Other research links poor heating systems and the presence of dampness and mold to poor respiratory health (Burridge & Ormandy, 1993; Matte & Jacobs, 2000). Digestive problems, injuries, and psychological distress have also been related to poor-quality housing (Evans, 2003; Krieger & Higgins, 2002).[16] The one study that looks at long-term outcomes suggests that, after controlling for socioeconomic status, housing conditions during childhood may contribute to adult health status (Dedman et al., 2001).

Unresolved Issues[17]

As noted, most of the research on housing quality has focused on the effect of housing quality on health. The overarching issue with this hefty body of literature is failure to identify causation—what causes what. This work has focused primarily on the association between housing quality and health—not on the possible *causal* relationship.

Causation has been difficult to establish for a number of reasons (Matte & Jacobs, 2000; Pickett & Pearl, 2001). First, those living in inadequate housing also tend to be poor and socially disadvantaged (for example, living in deteriorated neighborhoods with high concentrations of poverty).[18] It is difficult, though crucial, to disentangle the effects of poverty and social disadvantage on health outcomes from those of housing conditions. Without such controls, housing variables may pick up unmeasured differences among individuals and overstate the effects of housing per se on health.

Establishing causation requires either experimental data or rich geocoded longitudinal data with solid measures of poverty, disadvantage, and health as well as housing. Such databases are extremely rare, and those that exist pertain to specialized samples that may not be generalizable to other populations. The strongest evidence comes from the five-year analysis of the Moving to Opportunity (MTO) experiment in the Boston site (Kling et al., 2004). MTO is an experiment in which families living in inner-city public housing projects in five cities were randomly assigned to one of three groups: an experimental group offered a housing voucher that could be used only in a low-poverty (<10 percent) neighborhood; a comparison group offered a traditional housing voucher with no restrictions on the neighborhood poverty rate; and

[14] Catalano and Kessell (2003) argue that because the affluent can always invest more money to improve their housing compared with the poor, and housing policy does not aim for equality in housing between the rich and poor, there will always be a gradient. The core issues are how steep it is, and how this affects differential health (and other) outcomes.

[15] Lead exposure is one of the most important and best-studied aspects of housing quality as it pertains to children's health (Matte & Jacobs, 2000). Longitudinal survey data suggest significantly reduced blood lead level in children in homes where chipped lead-based paint has been "stabilized," though true experimental evidence on long-term benefits does not exist.

[16] Much less research has been conducted on the effects of housing features on mental than on physical health. See Evans (2003) for a review of the mental health research. Links to mental health are not consistent (Evans & Kantrowitz, 2002). However, one plausible hypothesis is that stress induced by substandard housing may play a significant role in undermining health by increasing the "allostatic load" (Krieger & Higgins, 2002).

[17] This discussion excludes the body of research on the effects of housing on outcomes of the disabled.

[18] Matte and Jacobs (2000) also note that the rarity of very poor-quality housing in the U.S. makes it an expensive topic to study.

a control group not offered a voucher. Kling and his colleagues report significant improvements in housing quality among the experimental and comparison groups relative to the control group, raising the possibility that housing quality might have mediated the effects of the intervention—the offer of a housing voucher—on economic and health outcomes.[19]

A second reason causation is difficult to establish is self-selection. This occurs, for example, if deteriorating health makes it impossible to hold a job, leading to loss of income and the need to move into cheaper—and inadequate—housing. In this case, poor health is the cause of poor housing quality rather than the result. Again, experimental or rich longitudinal data are required to address the selection problem.

A third reason is that, at present, there is no "standard" set of housing quality measures or indices whose validity and reliability have been established with proper statistical methodologies. The subject of housing measurement is discussed later in this paper.

To further our knowledge about the effects of housing quality on outcomes of interest, there are conceptualization, measurement, and data problems that need to be addressed. Conceptualization involves developing alternative hypotheses that delineate specific features of the housing environment that plausibly affect the health (or other outcomes) of residents, and the pathways through which these effects are transmitted. Adequate measurement is difficult because data are scarce. But it may be possible to test limited forms of at least some plausible hypotheses with existing databases if two conditions are met. First, the databases must include the requisite background and outcome measures, at least a core set of housing indicators, and geocodes so the data can be linked to census tract and block group data or other sources of data on neighborhood features (for example, administrative data). Second, the data and sample size must support rigorous testing of the hypotheses. These limited analyses could provide the basis for deciding whether launching a new data collection effort is worthwhile. But initial testing with existing data must proceed with great care. Existing databases, however large, may not be capable of getting at the right questions.

Beyond the primary policy question of which specific components of "housing quality" affect individual outcomes, a long list of substantive questions is worth addressing. One such question is whether the effects of housing quality deficiencies differ depending on whether the family is chronically or only temporarily (or episodically) ill-housed. This is the same question that was asked about poverty roughly two decades ago. It resulted in important work on poverty spells, which strongly affected welfare and tax policy (Bane & Ellwood, 1986; Ellwood, 1988). Another question is whether there is a housing quality threshold or tipping point for health effects below which quality problems may not be deleterious. This notion is comparable to the concept of the "good enough" environment (Shonkoff & Phillips, 2000).

Yet a third intriguing question is whether social support and engagement compensate for (that is, mediate or moderate) the effects of poor-quality housing on individual outcomes (Saegert et al., 2003).[20] The qualitative research on MTO suggests

[19] Housing quality was a composite measure of four features: (1) self-reported overall housing condition; (2) self-reported problems with peeling paint, plumbing, vermin, roaches, broken locks, broken windows, heat; (3) interviewer observations of the interior problems of noise, clutter, cracks, peeling paint, mold, smoke; and (4) interviewer observations of the exterior problems of overall poor condition, broken windows, metal bars (Kling et al., 2004, p. 51). It should be noted that impacts on mental health were significant but those on physical health and economic self-sufficiency (employment, earnings, receipt of welfare) were not. Further, changes in neighborhood quality were larger than changes in housing quality. Remaining questions are whether these findings generalize beyond public housing settings and beyond Boston (see Kling, Liebman, & Katz, 2007, for concerns about heterogeneity and, therefore, the external validity of the MTO findings).

[20] This is one potential explanation for why early 20th century immigrants to the U.S. who lived in crowded inner-city tenements, or worse, were able to move up the socioeconomic ladder nonetheless.

an even more complex tradeoff by residents among quality, affordability, social contacts, and convenience. MTO treatment group members reported that although their physical housing conditions were much improved, children and adults missed their social networks, rents became unaffordable over time, and their new locations lacked transportation, shopping, and recreational facilities (Popkin, Harris, & Cunningham, 2002).

Research primarily by social epidemiologists introduces another potentially productive line of inquiry by demonstrating the measurable effects of stress in the "social environment," which includes the housing setting, on stress hormones such as cortisol, and, by contrast, the protective effects of accommodating social environments (Berkman & Kawachi, 2000). But the effects of specific components of inadequate housing on an individual's biochemistry and, therefore, health and well-being, have not been examined. Nor has the question of whether exposure to housing that is stress producing or protection producing has only short-term effects or continues over the longer term. Finally, recent research on housing affordability (Harkness & Newman, 2005a), described below, finds older children's (ages 12–17) developmental outcomes more likely to be affected by housing affordability compared with those of younger children (ages 6–11). One possible explanation for this age differential may be that such effects are cumulative; Geronimus (1992) describes this as the "weathering effect."[21]

CROWDING

Researchers to date have conceptualized the detrimental impacts of a crowded living environment in three primary ways: as a source of "stimulus overload" (excessive social demands); as the absence of privacy; and as the inability to control external stimuli (Gove, Hughes, & Galle, 1979). These attributes may limit sleep and the ability to concentrate, while the lack of personal space may increase the transmission of infection-based illnesses from one household member to another. Crowding in the home has also been hypothesized to have negative effects on physical and mental health, child development, and the development of socially supportive relationships, which result in psychological distress (Evans, 2003).

A number of studies find a relationship between crowding and children's poor health (for example, Coggon et al., 1993; Galpin, Walker, & Dubiel, 1992; Mann, Wadsworth, & Colley, 1992). Recent research in France appears to be the first to find a link between overcrowded housing and learning, as measured by having to stay back a grade in elementary and middle school (Goux & Marin, 2005).

Unresolved Issues

As with the research on housing quality, studies of crowding are also beset with weaknesses in conceptualization, measurement, data, and analysis. For this reason, past findings of a significant relationship between some measure of crowding and one or more outcomes must await verification or contradiction with more refined approaches. For example, the French study reporting a significant relationship between crowding and retention in grade controlled for family size and socioeconomic status but not for any other housing characteristics that may be highly correlated with crowding. Once controls are included for other housing conditions, the significant effect of crowding per se on grade retention may disappear.

Perhaps a more fundamental issue is that, despite considerable research, there continues to be disagreement in the literature on virtually every dimension of the crowding construct—definition, theory, measurement, methods, and effects

[21] It may also be that the developmental finding, which is based on cross-sectional data, may not be sustained with time-series data.

(Gurkaynak & LeCompte, 1979; Myers, Baer, & Choi, 1996). For example, the most commonly used indicator of crowding is the ratio of persons to rooms. This implies that stimulus demands, privacy, and lack of control over stimuli—the conventional definition of what it means to be "crowded"—are the result of an excess of persons for the number of rooms in the home, and not just the number of persons in the house. Since a "room" is commonly defined as a space that has floor-to-ceiling walls and a door that can be closed, the number of rooms is a key element in establishing whether crowding according to this definition exists, because rooms provide control over interpersonal contact. But it is also possible that stimulus demands, privacy, and control are affected by the household configuration, the number of children of various ages in the household, and the nature of the obligations household members have to each other (Gove, Hughes, & Galle, 1979). If so, then the conventional measurement of crowding is off the mark.

Cultural values and customs are another source of possible variation in the effect of crowding under the usual definition (Myers, Baer, & Choi, 1996). Asian and Hispanic households, for example, who have the highest rates of crowding in the U.S., may have a preference for more crowding than that codified in housing regulations. This is plausible, because households in these ethnic groups retain their high rates of crowding all the way up the income distribution, and individual households continue to be "crowded" even as their incomes grow over time. If this is actually a revealed preference for more crowding than that in established housing regulations, should policy respect the preference for crowding among "close contact" cultures (Choi, 1993), such as by having a more flexible crowding standard?[22] This query raises even more fundamental questions of how to conceptualize and measure crowding, and what determines whether crowding will have an effect on outcomes. These remain largely unanswered.[23]

HOUSING AFFORDABILITY

Housing affordability (typically defined as devoting more than 30 percent of family income to housing) has been largely neglected despite having been a major rationale for assisted housing policy since its inception in the 1930s. This is understandable from an analytic perspective, because the policy argument for making housing affordable is in fact nothing more than an income argument; that is, making decent housing "affordable" gives a household more spendable income to buy other household needs, just as a direct income supplement would. The neglect is unfortunate from a real-world policy perspective, however, because of the preference of the voting public, as noted earlier, for providing in-kind "goods" rather than untied cash. Given this preference, it is important to find out whether households living in affordable housing do in fact use the freed-up income for the other needs of household members, particularly children. Even if children live in decent, safe, and uncrowded housing, for example, if that housing is not reasonably affordable, families may be forced to cut back on the purchase of key necessities such as food or medical care. Or the resulting economic stress could cause marital strain or disruption, harsh disciplining of

[22] One study correctly warns against equating perceptions of being crowded to the psychological and physical health effects of living in crowded housing (Evans, Lepore, & Allen, 2000). Evans and colleagues present the results of a cross-sectional analysis of the relationship between crowding and psychological distress of whites, blacks, Mexican Americans, and Vietnamese Americans and conclude that there are no statistically significant differences among these four groups. However, the authors show only the interaction term results and not the results for the main ethnic/race variables. Based on one graph in the paper, it seems likely that the Vietnamese group experiences less psychological distress than the other three groups. The paper also tests only a linear relationship when a strong case can be made for nonlinearities (for example, "crowding" begins only after exceeding one person per room).

[23] Gove, Hughes, and Galle (1979) is one rare attempt at validating the persons-per-room ratio, and this research provides support for the traditional "persons per room" measure. However, the analysis is hampered by high multicollinearity and a specialized sample that may not be generalizable.

children, or parents working longer hours in order to pay the bills and, therefore, having less time for their children. It could even lead to greater residential instability, which research shows to be detrimental for children (Aaronson, 2000; Haveman, Wolfe, & Spaulding, 1991).

Whatever the particular mechanism, these examples suggest that restricted spending power because decent housing eats up an inordinately large part of the income of poor households can be a threat to the health and well-being of their children. It is also possible, however, that to the extent families exercise informed choice about how much they spend on housing, their decision might reflect their desire to "purchase" better schools, lower crime rates, and similar community features by paying more for housing—because these community attributes are capitalized into housing prices. In this case, community features that are beneficial for children could overwhelm the negative effects described above.

The analytic problem is that families are diverse and can be expected to respond to housing prices and expenditures in diverse ways. Some may cope by reducing their consumption of other goods and services, others by living in low-quality or crowded housing, still others by suffering psychological distress. In the absence of research on the effects of housing affordability, research on the effects of income suggests some plausible hypotheses that deserve testing. Studies of the effects of income on children's ability and educational attainment finds the strongest impact on those with the lowest incomes (Duncan & Brooks-Gunn, 1997); perhaps housing affordability has similar nonlinear effects. If so, small declines in housing prices in very expensive housing markets could have larger impacts on children's well-being than similar price declines in cheaper markets. Also, early childhood exposure to high housing costs may matter more than later exposure, which would, again, be similar to income study findings.

To date, only two studies have examined the effect of housing affordability on children's outcomes. An initial, exploratory study (Harkness & Newman, 2005a) used data from a national cross-section survey, the National Survey of America's Families, to examine a range of outcomes associated with high housing prices on 6–17 year olds in families with incomes below the poverty line. Outcomes include health, school engagement and advancement, behavior and emotional problems, parental aggravation and mental health, food security, crowding, and timely health care. Because the conventional approach to measuring housing affordability—the ratio of housing costs to income—is potentially endogenous (that is, the same attributes that lead families to spend a particular fraction of their income on housing may also affect their children's well-being), this analysis substitutes for the usual affordability definition a measure of local housing prices.

This study, as noted earlier, finds a broader range of favorable effects of affordable housing on older children (12–17 years old) than younger children (6–11 years old), perhaps because the effects of affordability may be cumulative.[24] Consistent with the pathways through which poverty exerts negative effects on children, unaffordable housing appears to operate mostly through material hardship in early childhood. This result is also consistent with research findings that public housing has positive effects on children's outcomes (Currie & Yelowitz, 2000; Newman & Harkness, 2002), medical and dental care (Lee et al., 2003), and nutrition (Meyers et al., 1995, 2005). But there was also a V-shaped effect for school outcomes for older children; that is, school engagement and grade promotion initially declined as housing prices increased, but then reversed direction and actually improved as housing prices continued to increase. These effects may arise from unmeasured characteristics of either places (for example, school quality, crime rates) or families.

[24] As previously noted, this study relies on cross-sectional data and the finding may not be sustained with longitudinal, panel data. It is also possible that exposure in early childhood doesn't become manifest until later childhood or beyond.

Since this study is based on cross-sectional data, as noted, and has only limited measures of children's well-being, parental and parenting characteristics, and housing and neighborhood conditions, it provides only a glimpse at the potential impacts of affordability. The second of the two studies (Harkness, Newman, & Holupka, in press) uses the longitudinal Panel Study of Income Dynamics (PSID), the PSID's two waves of the Child Development Supplement (CDS) (1997 and 2002) and housing market data attached via geocodes. The analysis sample consists of children ages 5–17 in 2002, divided into poor and near-poor subsamples (that is, those in families with income below poverty, and those whose families had incomes up to twice the poverty line). The findings do not support the conventional view that unaffordable housing is detrimental to children's well-being. Instead, children growing up in higher-priced housing markets fared no worse than those with the same household income in lower-priced markets.[25] For children who spent at least half their childhoods in poverty, there were no negative associations between housing prices and academic achievement, problem behaviors, or health. Nor was there any indication that parents living in higher-priced markets were more personally or emotionally stressed. Near-poor children were also not harmed by higher-priced markets, and boys in these families actually scored higher on reading and math tests. And again, parents did not report greater stress.

Unresolved Issues

How should the results of the longitudinal study be interpreted? Omitted variable bias may be at work. It is possible, for example, that higher-priced markets have the expected negative effects but that highly resourceful families self-select into these markets, and it is their greater resourcefulness—not housing prices—that leads to their children's better developmental outcomes. On the other hand, if the least resourceful families end up in higher-priced markets, then perhaps these locations have features that are beneficial to children and these beneficial features compensate for the higher costs of living there. Drawing implications for housing policy depends on which of these scenarios—or some other scenario—is accurate. First, we need a better understanding of how families decide where to live and the constraints they face. Second, a single analysis of a single database is not a sufficient foundation for policy development. The next step is to expand beyond the PSID-CDS to other national survey databases—in part to conduct parallel analyses on different databases to see if results are replicated, and in part to conduct analyses that leverage the unique strengths of particular databases. At this writing, a comparable study based on the National Longitudinal Survey of Youth (NLSY) is underway. This additional research should begin to establish the scientific infrastructure for policy that is now missing, and could provide a strong basis for deciding whether additional research is required and, if so, its focus.

SUBSIDIZED HOUSING

The question that has dominated research on the impacts of assisted housing is the effect that subsidizing a family's rent has on economic self-sufficiency. Three subareas can be usefully identified: subsidies alone, subsidies combined with services, and subsidies in the context of the stronger work incentives embodied in the welfare reforms introduced in the mid-1990s. I discuss each in turn.

[25] Again, as in the cross-sectional study, a measure of housing prices is used to represent the concept of affordability because of the endogeneity of the housing cost-to-income ratio measure.

Subsidies Alone

One major line of inquiry on the impacts of assisted housing on residents is whether housing subsidies by themselves act as a deterrent to economic self-sufficiency (defined as increasing income, work hours, and earnings; decreasing welfare dependency) or serve as a springboard into the economic mainstream.

On the deterrent side, the hypothesis is that the structure of the housing subsidy deters self-sufficiency by reducing the amount of income the recipient gets to keep from wages earned. Because the tenant's rent contribution is set at 30 percent of adjusted gross income, every dollar increase in income is effectively taxed at 30 percent. Housing assistance benefits decline as income rises and phase out entirely when income rises beyond a certain point. Under the voucher program, for example, when 30 percent of income has been greater than or equal to the rent for six months, the tenant is no longer eligible for a subsidy. Since this rule is equivalent to a tax on earnings, theory says it will be a work disincentive, other things equal.

Beyond the structure of the subsidy itself are possible negative peer effects. One hypothesis is that the large concentrations of very low-income tenants in dense public housing and other project-based assisted housing developments discourage work effort (Newman & Schnare, 1994, 1997). An alternative or additional hypothesis is that the limited information, experience, and contacts of social networks in such settings could restrict residents' economic advancement. Kasinitz and Rosenberg's (1996) qualitative study of the Red Hook neighborhood in Brooklyn, New York, graphically illustrates the second hypothesis. Industrial employers with vacancies in blue-collar jobs located in this neighborhood did not hire local public housing residents. This turned out to be in large measure because, not being tied into the job network, the residents were unaware of job openings and, therefore, did not apply.[26]

On the springboard to the mainstream side, since housing assistance provides a decent, stable, and affordable residence, recipients are in a better position to seek a job because they don't have to waste energy on their housing problems. And, as hypothesized if not fully demonstrated, physical adequacy, stability, and affordability may improve self-sufficiency outcomes through their beneficial effects on health, stress, and possibly other outcomes. These are the sorts of "extra" benefits that are viewed as increasingly vital for justifying the in-kind benefit of housing subsidies.[27]

Results from research on the effects of housing assistance programs on economic outcomes of recipients have been described as inconclusive (for example, Shroder, 2002). This judgment seems fair if all the studies are treated as equally valid. Of the 11 studies on this topic using nonexperimental data, four find negative effects (Fischer, 2000; Murray, 1980; Schone, 1994; Susin, 2005), one finds a positive effect (Ong, 1998), and six find no statistically significant effects (Berger & Heintze, 2004; Newman, Holupka, & Harkness, submitted; Ong, 1998; Painter, 2001; Reingold, 1997; Reingold, Van Ruyzin, & Ronda, 2001).

But if the focus is restricted to the three multi-site studies that use accurate measures of assisted housing receipt, there is somewhat more consistency. Two of the

[26] Multiple forms of discrimination also reportedly played a role. These included racial, class, and locational (or "address") preferences, fear of crime, and hostility to the neighborhood by employers.

[27] As previously discussed, one of the rationales for government's provision of in-kind benefits in the form of housing subsidies is the belief that living in decent, stable, and affordable housing is important to the well-being of low-income families in a way that is different from the benefits conferred with a cash transfer. If this were not the case, then families could be given cash assistance to spend as they saw fit. No developed country has chosen this cash-out approach, however, choosing instead to regulate—to a greater or lesser extent—the quality, quantity, and distribution of housing (Catalano & Kessell, 2003; Harsman & Quigley, 1991). Proposals to cash out housing assistance have been made in the U.S. from time to time. Proposals of the Bush administration, however, focus on cutting in-kind assistance, not cashing it out.

three find initial negative effects on work and earnings that are neutralized over time. Newman, Holupka, and Harkness (in press) use address-matched data from the PSID for the 1968–1995 period and find no relationship between moving into private assisted housing and sustained reductions in labor force participation, work hours, or earnings for women with children compared to matched controls. For women with children moving into public housing, initial short-term declines in work effort disappear and flat earnings begin to rise after about two years, however. The one difference that is sustained over time is a greater reliance on welfare by housing assistance recipients relative to nonrecipients.

The Welfare-to-Work Voucher Program (WtWV) (Abt Associates, 2006), an experiment testing the effects of awarding housing vouchers to welfare recipients, finds small but statistically significant declines in work and earnings 5–7 quarters after random assignment, which became statistically insignificant after about 3.5 years.[28] WtWV also found sustained differences in welfare use, with those receiving housing assistance having less of a decline in use over time.

The third study (Susin, 2005) uses address-matched data from the SIPP to identify 1996 housing assistance recipients in all three assisted housing programs, and then examines their experiences over the 1996–1999 period.[29] He finds no significant effects on employment rates for all three assisted housing programs, but smaller increases in earnings that did not disappear over time and no greater reliance on welfare by housing assistance recipients. The shorter time period of observation likely explains the discrepancy in Susin's earnings results: The results are consistent with WtWV and our study when examined over a similarly short time span. The reason for Susin's welfare result, however, is unclear.[30]

Subsidies with Services

Disincentives to work constitute only one potential impediment to residents' efforts to achieve economic self-sufficiency. Two other prominent impediments are lack of job skills and, as just noted, inadequate social ties needed to provide leads about good jobs (Kasinitz & Rosenberg, 1996; Wilson, 1987[31]) or offer peer support for those seeking to better themselves. The Jobs-Plus initiative, a quasi-experiment tested in public housing developments in six cities, suggests that providing a package of services to residents that includes job training, reduced financial disincentives to work in the subsidy structure,[32] plus supportive social networks can have positive effects on earnings and employment (Bloom, Riccio, & Verma, 2005).

Subsidies in the Context of Welfare Reform

The dramatic 1996 overhaul of the welfare system raises the important policy issue of how that major increase in the work incentives embodied in current income assistance is affecting housing assistance recipients. The key housing

[28] The consistency between these two studies is all the more interesting because of differences in time period: Newman, Holupka, and Harkness examine outcomes over a seven-year follow-up for individuals who received housing assistance between 1970 and 1995, while WtWV examines outcomes over a four-year follow-up for individuals randomly assigned starting in April 2000. The two studies also focus on different forms of housing assistance: Newman and colleagues studied project-based assistance while WtWV studies vouchers.

[29] Harkness, Newman, and Holupka's analysis is based on matched respondent addresses to HUD administrative data; Susin matched Social Security numbers.

[30] It should also be noted that Susin's analysis focuses on assisted housing recipients who were already receiving housing assistance. Since long-term recipients are overrepresented at any point in time and are likely to differ from the average recipient, it is inappropriate to generalize his results to all housing assistance recipients.

[31] Wilson (1987) contrasted the job networks of those living in, and outside, inner cities.

[32] The financial incentive reduced the extent to which rents increased when earnings, and therefore income, increased.

policy question about welfare reform is whether housing assistance recipients also experienced the dramatic increases in employment and reductions in welfare receipt experienced by all low-skilled single mothers.

Studies on the effects of welfare reform on housing assistance recipients fall into three categories: (1) analyses of national survey data (Berger & Heintze, 2004; Harkness & Newman, 2006; Susin, 2005); (2) evaluations of four state-level welfare reform programs (Lee et al., 2003; Verma, Riccio, & Azurdia, 2003); and (3) research on welfare leavers with and without housing assistance (Bania, Coulton, & Leete, 2001; Mancuso et al., 2001; Nagle, 2001; Van Ryzin, Kaestner, & Main, 2001; Verma & Hendra, 2001; Zedlewski, 2002). All three bodies of research consistently suggest that the effects of welfare reform on housing assistance recipients were comparable to those for nonrecipients—that is, the housing subsidies did not have a muting effect on the stronger incentives to work embodied in welfare reform.

Unresolved Issues

One of the greatest frustrations in research on the effects of assisted housing is how to untangle, and thus interpret, the findings. Because, on average, assisted housing (whether or not explicit services are included) is a "package" of attributes that includes physically adequate and affordable dwellings, a concentration of residents with generally similar socioeconomic backgrounds, and similar conditions in the surrounding neighborhood, how does one interpret a finding that assisted housing has a statistically significant effect? This conundrum pertains to all research designs, be they experimental or observational. While such research can report whether there is a significant difference between outcomes for those with and without housing assistance, it cannot attribute these effects to one or more specific attributes of assisted housing environments. Until we understand *why* assisted housing has positive or negative effects, we do not have the fundamental prerequisite for designing effective programs.[33]

Whether housing assistance is a disincentive to work and earnings is arguably the policy question that has generated the greatest interest in the last decade. As noted, preliminary results from one experiment (WtWV) and one observational study (Newman, Holupka, & Harkness, in press) find the same pattern of short-term declines that disappear over time. Findings from the third study, with address-matched identification of assisted housing recipients, offers consistent findings on work hours and earnings but possibly contrary evidence on welfare receipt (Susin, 2005). Both the experimental study and our observational study find that the greater reliance on welfare among housing assistance recipients than nonrecipients is associated with a reduction in the number of adults in the household (WtWV) or a reduction in marriage of women moving into public housing (Newman, Holupka, & Harkness, in press).[34] Why this occurs, and particularly whether housing rules and regulations affect these household composition changes, is an important policy question.

HUD's Moving to Work (MTW) program may provide the opportunity for "natural experiments" to test the disincentive question and to begin to disentangle the relative influence of at least two features of assisted housing programs: rent rules and the absence of time limits. Under MTW, launched by HUD in 1997, competitively selected public housing authorities (PHAs)[35] can combine their different streams of

[33] The main option for disaggregating "assisted housing effects" into component parts using observational data is to pursue a two-step process. The overall effect of assisted housing on an outcome of interest would be established in the first step, followed by a second step in which "assisted housing" would be represented by the values of assisted housing observations on crowding, housing quality, rent, neighborhood attributes, and other features of the assisted housing bundle. The relative importance of these components could then be estimated.

[34] Susin (2005) does not address the household composition question.

[35] Roughly 30 PHAs are participating. The precise number is unclear because of recent additions to the program.

HUD subsidies and use them in any way they think will encourage tenants to enter the workforce, free of many of the rules and regulations of typical housing programs. The variations in rent rules being tested include delaying rent increases as income increases, reducing the rent-to-income ratio for a period of time, and setting flat rents or ceiling rents so that rents do not continue to increase with income. More recently, some PHAs have begun to experiment with time limits (Abravanel, 2006).[36]

Beyond the WtWV, the only other experimental data that might be used to examine assisted housing effects on self-sufficiency dates back to the Experimental Housing Allowance Program (EHAP) of the 1970s. EHAP was not designed to look at this constellation of effects of housing subsidies, however, and the EHAP data were never analyzed from this perspective. It is also unclear whether the data from that experiment still exist in usable form. Even if they do, they cover a period more than 30 years ago. At best, reanalyzing EHAP data might be a worthwhile testing ground for future work.

Yet another noteworthy weakness in this body of research is its focus on broad, average patterns. This leaves unexplored the great heterogeneity of assisted housing families and the dynamics of their lives (DeParle, 1996; Shroder, 2002). Yet these variations may strongly influence whether assisted housing has beneficial effects and, thus, what modifications in assisted housing features or policy would work more effectively. Qualitative research would be ideally suited to provide initial insights here. It might be possible, for example, to generate hypotheses from the qualitative research conducted as part of the WtWV and MTO projects, as well as studies of the transformation of public housing that has been underway for roughly the last decade under HUD's HOPE VI program. There is a caveat here too, however. Because the first two of these are experiments and the third is a special initiative, respondents are potentially subject to the Hawthorne effect (that is, changing their behavior because they are being studied). What we need are insights into the lives of a cross section of residents living in "business as usual" assisted housing.

The effects of assisted housing on children have been the focus of only three studies. Two of them focused on public housing, using different data for different time periods but yielding consistent results. Currie and Yelowitz (2000) studied grade retention; Newman and Harkness (2002) analyzed a range of long-term outcomes including work, earnings, and educational attainment after age 20. Both studies yielded what for many was an unexpected result: Public housing children experienced *better* outcomes than their unassisted counterparts. The third and most recent of the three is WtWV, the voucher experiment described earlier (Abt Associates, 2006). In contrast to the public housing results of Currie and Yelowitz (2000) and Newman and Harkness (2002), WtWV reports that within the five-year follow-up period there was "no evidence to support any particular pattern of effects on [such] child outcomes" as school performance and behavior problems. Since more than twice as many households receiving a voucher (the experimental group) moved to a different residence as their non-voucher counterparts, the explanation might be that the disruption of moving overwhelmed any positive effect of the voucher (such as greater discretionary income or better housing quality and neighborhood).

Work now underway is examining both short- and long-term effects of public and privately owned, federally assisted housing on children along the age spectrum (from infancy through adolescence).[37] This may provide some tentative answers but, as noted earlier, a solid knowledge base requires a broad body of research, which still needs to be done.

[36] Some key rules remain in place, such as income eligibility of families and housing quality standards for dwelling units. MTW provides no additional funds, but PHAs can keep any savings their strategies generate.

[37] This work is being conducted by the author.

The Jobs-Plus findings (Bloom, Riccio, & Verma, 2005) of the potential beneficial effects of combining housing assistance with supportive services is intriguing but still needs stress testing. First, despite their best efforts, the Jobs-Plus researchers ran into stumbling blocks in some sites, making interpretation of their findings somewhat challenging.[38] Additionally, three different services (job training, financial incentives to work, supportive social networks) were bundled together. It is unclear whether all three need to be present to generate beneficial effects, whether only one or two of them are necessary, or whether some have greater effects than others. It might be useful to develop another study that builds on the experiences—both positive and negative—of Jobs-Plus. It might also be useful to discuss with HUD the feasibility of rigorously evaluating its "housing plus services" initiatives, such as its Family Self-Sufficiency and Resident Opportunities and Self-Sufficiency Programs. This has not been done to date.

The relationship between housing and welfare programs will continue to be an important policy issue. Thus far, research on this topic has produced a remarkably consistent finding of comparable effects of welfare reform on housing assistance recipients and nonrecipients. A remaining policy question is whether housing assistance recipients who have been specifically targeted for assistance by welfare-to-work agencies, or by such HUD programs as HOPE VI, Jobs-Plus, and MTW, have fared better than others, and if so, why.

HOMEOWNERSHIP

It is relatively rare in the social sciences for multiple rigorous analyses, using different data and different research approaches, to come to the same conclusion about an important policy question. The effects of homeownership on children's outcomes represents one such alignment. In multiple studies (for example, Aaronson, 2000; Boehm & Schlottman, 1999; Conley, 2001; Green & White, 1997; Haurin, Parcel, & Haurin, 2000, 2002), growing up in an owned home emerges as a powerful positive influence on children's short- and long-term success. Findings include greater math and reading achievement, fewer behavior problems (Haurin, Parcel, & Haurin, 2002), lower high school dropout rates, fewer teen births (Green & White, 1997), more years of completed schooling by age 25 (Conley, 2001), and higher high school graduation rates (Aaronson, 2000).

But are these beneficial findings due to homeownership or some other factor? Many of the authors of this body of work themselves question whether homeownership per se is the driving force. Of the various alternative hypotheses that have been proposed, perhaps the most creative to date is that of Green and White (1997), who suggest that because homeowners have to negotiate with maintenance and repair people, they are forced to develop perseverance and negotiating skills, which make them better parents.

Recent work on the effects of public housing on children, however, suggests that the causal factor may lie elsewhere. For example, growing up in public housing is known also to convey long-term benefits to children (Newman & Harkness, 2002). This suggests that it is not homeownership but some other feature shared by homeownership and housing assistance, such as housing stability and security, that is the cause. Using stability as an example, one can think of several ways this could occur. Since homeowners are more residentially stable than renters, for example, children in homeowning families don't have to face the disruption of moving, making new friends, and, importantly, changing schools as often as those in renting families. And research shows that children who change schools frequently have poorer school performance (for example, Haveman, Wolfe, & Spaulding, 1991). Additionally, since owned homes tend to cluster in common neighborhoods, the greater stability associated with

[38] For example, some sites did not implement the program properly.

homeownership translates into more stable student populations in neighborhood schools. And low student turnover is associated with a higher-quality school environment and, in turn, better educational experiences for children.

A similar argument can be made for housing quality. The investment incentive of homeownership could lead homeowners to have higher-quality housing. But by the same token, since public housing must meet housing quality standards, it too, provides low-income families with better housing quality than they would otherwise enjoy (Newman & Schnare, 1997). It may be that the beneficial effects of homeownership and public housing arise because both offer better housing quality, which, in turn, has positive impacts on children.

The first systematic, though highly preliminary, evidence that it may *not* be homeownership per se that produces positive effects on children is recent research on racial differences in the effects of homeownership on young (3–12-year-old) children's outcomes (Harkness & Newman, 2005b). This research finds a positive association between homeownership and children's outcomes for whites but not for blacks, suggesting that something other than simply homeownership underlies the more favorable results found in previous studies. One possibility is that homeownership is a marker for other attributes of parents unmeasured in the analysis data and, therefore, not included in the models.

Unresolved Issues

The quality of research on homeownership is still a matter of dispute. If, as some analysts argue (Dietz & Haurin, 2003), there are theoretical or econometric weaknesses in past research, the general consensus of beneficial effects could be an artifact of poor conceptualization and analysis. However, even Dietz and Haurin acknowledge the high quality of several post-1990 studies, nearly all of which detect positive results. Yet the most recent paper on the topic (Harkness & Newman, 2005b), mentioned above, using a different database than any previous work, suggests that we have yet to identify what exactly it is about homeownership that leads to better outcomes for children.

How can we disentangle what's in the black box called "homeownership"? Much attention has been focused on the greater residential stability of homeowners. But despite efforts to correct for self-selection, it is still not certain whether families prone to greater stability become homeowners or whether something about homeownership produces greater stability. Dietz and Haurin (2003) argue that learning whether homeownership has positive effects because it induces greater stability is not an important policy question since "causing" stability is inherent in this form of ownership. I argue the contrary, that disentangling the issue is very important from a policy perspective, since there may be ways for policy to increase residential stability without taking on the myriad challenges of fostering successful ownership. Even if the beneficial effects do turn out to arise because of the responsibilities of ownership or the financial impacts of wealth accumulation, we must still ask whether other assets have similar effects.

As is clear from my discussion so far, because the traits associated with good parenting are also those that increase the likelihood of homeownership, a rigorous analytic approach using rich data is required to ensure that the positive effects observed for children pertain to the influence of homeownership and not good parenting. Although several papers have done this econometrically and produced generally consistent results (Aaronson, 2000; Green & White, 1997; Harkness & Newman, 2002; Haurin, Parcel, & Haurin, 2002), some analysts have not been completely comfortable with this body of evidence. The task now is to show how and where this evidence is wrong.

One way to move the issue forward is to examine subgroup differences in the effects of homeownership—for example, whether it has a stronger effect on children

from lower-income families compared with higher-income families, intact versus single-parent families, or minorities versus others (Aaronson, 2000; Harkness & Newman, 2003). The heterogeneity of families may have dramatic effects on housing choices and outcomes, and more attention to these variations could yield insights into productive—and unproductive—housing policy strategies.

There is also the question of whether the goal of becoming a homeowner affects behavior. Numerous studies of changes in savings behavior have yielded findings that are largely consistent—homeownership increases savings. Effects on work behavior (for example, increasing work hours to increase earnings and, ultimately, the ability to afford a home) have been much less studied, and the few existing studies yield mixed results. There are also only a few studies that focus on the effect of changes in living arrangements (for example, economizing by moving in with others in order to be able to afford a home) (Dietz & Haurin, 2003).

Finally, the potentially negative consequences of homeownership have been largely neglected (Dietz & Haurin, 2003). While the vigorous push in the last decade to expand homeownership to lower-income populations has resulted in a number of papers estimating mortgage default rates, no research has been done on the possible toll on individuals and families of unaffordable homeownership costs, high-risk financial products that make purchasing a home easier but keeping it harder, and the responsibilities of home upkeep that are inherent in homeownership. And despite the growth of homeownership among lower-income households, few studies have examined the effectiveness of homeownership counseling services (Herbert et al., 2005; Hirad & Zorn, 2001).[39]

MEASUREMENT: SURPRISINGLY UNCHARTED WATERS

As noted at several points in this paper, high-quality housing data are essential for producing high-quality housing policy research. To date, however, the validity and reliability of most key housing measures have not been established. The scope of this challenge is vividly demonstrated by the American Housing Survey (AHS), the primary database on the nation's housing.[40]

SYNOPSIS OF WEAKNESSES IN AMERICAN HOUSING SURVEY (AHS) AND OTHER SOURCES

Self-Reports on Core Housing Features

Roughly one month after the Census Bureau fields the AHS, it re-interviews a subsample of cases and compares the re-interview data with those of the original fielding of the survey (Hartnett, 2005). This comparison typically reveals significant disparities in respondent answers to numerous "core" questions about housing and neighborhood attributes. Examples of measures with high levels of inconsistency are housing costs, physical deficiencies (for example, holes in floor, rodents, electrical problems), and perceptions of neighborhood conditions (for example, crime, rundown homes, boarded buildings) (Chakrabarty, 1996). Inaccuracies in respondent reports on housing costs have also been documented in validation studies comparing reports by homeowners on their mortgage payments, taxes, and utilities with reports from their lenders, from utility companies, and from tax records (Newman, 1984). Each of these measures is central to housing policy research: Housing costs are key for studying affordability; physical deficiencies are key for

[39] HUD recently issued an RFP for a study of housing counseling services that may ultimately address effectiveness. It also commissioned a study of housing counseling in 1986 that was a process evaluation and did not address effectiveness.

[40] The AHS is collected by the Census Bureau for HUD. It includes both a biennial national survey and a metropolitan area survey conducted in 47 metropolitan areas on a 4–10 year rotating basis. The length of the cycle depends, in part, on metro area size, with the largest being surveyed more frequently.

studying housing quality; and neighborhood conditions are key for studying neighborhood effects. Evans (2003) reports that housing assessment survey instruments developed by individual researchers often contain few items, many of which are dichotomous (present/absent), and most of which have not been tested for validity and reliability.

Observations of Core Housing Features

Measuring housing features through observation has also proved problematic. A vivid example of the seeming intractability of this problem is the history of the Census Bureau's measurement of housing condition (Newman, 1984). In the 1940 Census, housing condition was measured by the dwelling's "state of repair," with enumerators rating the structure as either needing "major" repairs or not. In 1950, this approach was replaced by another dichotomous classification of structures as either "dilapidated" or "not dilapidated." This dichotomy was refined in 1960 by further classifying those structures reported as "not dilapidated" as either "sound" or "deteriorating." Following the 1960 Census, the Bureau launched an unusually detailed and thorough evaluation of its approach to measuring housing condition. Its conclusion was unambiguous: The housing condition statistics are unreliable and inaccurate. Subsequent decennial censuses of housing have dropped all interviewer observations of the overall condition of housing units.

The Bureau's negative experience over three decades, however, hasn't stopped other researchers from collecting housing information through interviewer observation.[41] The HOME scale, for example, includes interviewer assessments of features of the interior and exterior of the housing unit; the Project on Human Development in Chicago Neighborhoods (PHDCN) relied heavily on interviewer observations both inside and outside the home; and the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development uses a similar observation instrument to the PHDCN.

Analyses of these measures, at least in the context of child development outcomes, suggest that at least some of them work well. For example, recent analyses of subscales created from the HOME scale's items on the interior and exterior of the housing unit suggest that the interior items have some predictive validity for behavioral and cognitive outcomes of 3–5 year olds, with more mixed results for 6–9 year olds (Han, Leventhal, & Linver, 2004; Leventhal, Martin, & Brooks-Gunn, 2004). It is unclear why there is such a stark disparity in the reliability and validity of interviewer observations collected by the Census Bureau compared with those of independent researchers. Part of the answer is undoubtedly the focus on discrete housing conditions by individual researchers versus the much broader focus on overall housing condition by the Census Bureau. The curious thing is that individual researchers using their own instrumentation include a summary measure and seem to find it "works."[42]

Assisted Housing Self-Reports

Because of the importance of assisted housing information for HUD policy, the AHS has always included a set of questions about assisted housing. But a study by researchers in HUD's Office of Policy Development and Research, which compared respondent self-reports in the AHS with validated administrative data, revealed sizable disparities (Shroder & Martin, 1996). Similar findings have been noted in an

[41] Nor has it prevented the Census Bureau itself from continuing to rely on interviewer observations of specific building conditions in the New York City Housing Vacancy Survey done under contract for the New York City Department of Housing Preservation and Development.

[42] Both the PHDCN and NICHD studies include a four-point assessment scale of the general condition of buildings in the neighborhood that is very reminiscent of the scale Census abandoned 40 years ago.

earlier analysis of the AHS (Newman & Schnare, 1994) and a later analysis of the PSID (Newman, 1999). All this is compelling evidence that it is very difficult for many survey respondents to provide accurate answers to questions about receipt of housing assistance, let alone the type of housing assistance received.[43]

HUD has conducted studies to gain insights into the sorts of conceptual and cognitive problems respondents encounter in answering assisted housing questions.[44] Each study has recommended alternative question wording and order to improve accuracy. But to date, implementing these recommendations hasn't sufficiently improved validity. It is time to acknowledge that the only way to accurately identify assisted housing units and recipient households is through administrative data matching, an approach that is being applied in many major surveys focusing on other issues (for example, the National Long-Term Care Survey).[45]

Interviewing Mode

Beyond questions about the validity and reliability of individual questions, the mode of data collection (for example, personal interview, phone interview, computer assisted telephone interview [CATI]) also appears to affect respondents' answers to questions about housing. For example, a 1991 Census Bureau study of the effect of interview mode on reports of moderate physical problems in the housing unit (for instance, leaking roof, unvented heating, peeling paint) found that the non-CATI mode overestimated these housing problems while CATI underestimated them (Chakrabarty, 1996).

Translating Concepts into Measures

Even more fundamental concerns have been raised about what it is we should be measuring. The earlier discussions of housing quality and crowding raised this issue. The concepts of "housing quality" or "housing adequacy" are not based on completely explicit criteria and have no precise, quantifiable definitions of where "bad" ends and "good" begins. To improve this situation, several housing quality indices have been developed over the years. Although their core items overlap (for example, the presence of complete plumbing and kitchen facilities), there is also sufficient variation to produce sometimes dramatically different prevalence rates of "substandard dwellings." The fraction of welfare recipients living in substandard dwellings varies from 16 to 60 percent, for example, depending on the housing quality index used (Newman & Schnare, 1988, Appendix E).[46] Beyond this dramatic variation, the "standard" quality measures have not been updated for years and are missing items where there is a strong evidence base, such as the presence of lead paint.

[43] What is at issue here is whether the respondent can report accurately about the subsidy status of the *dwelling unit*, regardless of whether the respondent is on the lease as an official resident of the unit and therefore officially part of the subsidized household. Venkatesh (2002) reports on subleasing and other unofficial or illegal living arrangements in his study of Chicago's Robert Taylor Homes public housing development.

[44] Included here is a 1995 study by NORC in which the author conducted cognitive interviews with Chicago residents of assisted housing of different types, and a 2005 study by Gordon et al.

[45] Another topic area with documented validity and reliability problems is housing-related disability (impairments that limit functioning in the home) and dwelling modifications. The American Housing Survey has fielded two special supplements on disability and housing modifications, once in 1979 and again in 1995. A detailed analysis of the 1995 data concluded that improvements in the supplement's design could make it much more useful for policy analysis (Newman, 2001). The Census Bureau also examined the performance of the supplement and detected numerous problems (Zukerberg, 1996).

[46] See Belsky, Goodman, and Drew (2005) for a recent examination of conceptual difficulties in operationalizing another core housing construct, "affordability."

Unresolved Issues

It is important to note that the sorts of measurement problems reviewed here are not unique to the AHS or to housing and neighborhood questions. Response errors and inconsistent findings by interview mode characterize other major surveys also, including the Current Population Survey, the National Health Interview Survey, and the National Crime Survey.[47] In the case of housing, however, serious research is hampered by not only the lack of tested measures but, in many cases, the absence of well-grounded conceptualization as well.

Building the necessary conceptual and measurement infrastructure requires studies establishing the construct and predictive validity of housing measures;[48] cognitive studies to establish how various groups of respondents—household members, landlords, building managers, and interviewers—understand and report about key housing systems and features; and measurement studies to test such approaches as alternative wording, question order, and observations.

CONCLUSIONS

Do the last roughly 25 years of research substantiate the social benefits of "good housing," countering Weicher's contrary conclusion noted at the outset of this paper? The short answer is "no"—Weicher has not been proven wrong, but neither has he been proven right. Research on the effects of assisted housing, homeownership, and affordability on individual outcomes has improved so much in the last 10 years that it might be described as a new area of scholarship. As such, it is unrealistic to expect wholly consistent findings—not to mention definitive results—at this early stage. Housing policy research has also not been a funding priority for government or foundations. This has severely limited research in the short run and discouraged younger scholars from pursuing the field, with serious implications for the longer run. And the inadequacy—or nonexistence—of housing measures in existing databases discourages researchers from taking housing features into account in a wide range of studies where housing could plausibly matter. In view of these three impediments, what may be most remarkable is how *much* housing effects research has been conducted—not how little.[49]

Despite these significant obstacles, some tentative findings from the strongest studies are worth serious consideration, as are several policy considerations that flow from those findings.

Summary of Findings

First, although there are methodological weaknesses in much of the research on the association between housing and health, a stronger study (Kling et al., 2004) finds evidence of such a link. Second, while only in its early stages, the work on affordability—or, more correctly, unaffordability—suggests that the effects are likely to be more complex than the conventional assumption that unaffordable housing always produces detrimental outcomes for children (Harkness & Newman, 2005a; Harkness, Newman, & Holupka, in press). High-priced housing markets may offer benefits, as well as costs, to families with children, and effects may vary for younger versus older children.

Third, the three strongest studies of the effects of assisted housing on self-sufficiency (Abt Associates, 2006; Newman, Holupka, & Harkness, in press; Susin,

[47] Interviewer observations are not a component of these surveys, however.
[48] This is no easy task. For a discussion of conceptual and measurement issues, see Newman (1984).
[49] Although research on the effects of housing quality and crowding on health has a much longer history than research on the other key features of housing, as noted earlier, it is subject to the same problems of research support and data.

2005) find no evidence that assisted housing increases work hours or earnings, but all find statistically insignificant effects on work, and two of the three (Abt Associates, 2006; Newman, Holupka, & Harkness, in press) find neutral effects on earnings. These same two studies also find slower declines in welfare receipt for housing assistance recipients compared to nonrecipients. Fourth, the combination of public housing and services appears to move these effects from neutral (or negative) to positive, according to the one systematic study examining the effects of public housing residence with services (Bloom, Riccio, & Verma, 2005). Fifth, two studies examining public housing during different time periods, and using different databases and methods, also find beneficial effects on educational outcomes for children living in public housing during middle childhood (Currie & Yelowitz, 2000; Newman & Harkness, 2002). In addition, studies of the effects of welfare reform on the earnings of housing assistance recipients compared with nonrecipients are remarkably consistent, finding no significant differences between the two groups.[50] Finally, although most of the research on homeownership conducted until 2005 produced remarkably consistent results of positive effects of homeownership on a range of child outcomes,[51] recent, albeit preliminary, research raises the speculation that it may not be homeownership per se that accounts for these beneficial effects but unmeasured traits of parents.

While tentative, all of these recent results are sufficiently plausible to warrant a serious effort to build the systematic body of knowledge about housing effects that would prove or disprove them once and for all. To quote Glaeser and Sacerdote (2001, p. 22): "Housing must be taken seriously and studied further." A first step is to develop a coherent and integrated research agenda built around key hypotheses. A consensus conference—an approach often used in medicine to evaluate knowledge on a particular subject at that point in time and chart a course for future study—might be one way to begin developing this agenda.

In any case, the agenda for future research on housing should be organized and implemented so that the initial push is to undertake studies that build theory and develop valid and reliable measures, with later studies applying these theories and measures to test behavioral and structural relationships. Many of the studies discussed in this review represent what could be the "initial studies" of such an agenda. Opportunities that exist for analyzing (or reanalyzing) existing data sets should be pursued first, since they can serve as an initial—and economical—testing ground. But because of the inadequacy of housing measures in most surveys, newly designed studies will undoubtedly be required as well. Inevitably, new studies will be expensive, and may require joint support from multiple funding partners. But cutting corners will not help build the knowledge base we need.

Although this systematic approach to developing a body of knowledge would make a significant contribution, there would still be an elephant in the room: untested housing measures. At the very least, a basic set of housing measures should be developed and thoroughly tested, akin to the minimum data set on long-term care developed more than 25 years ago (NCHS, 1980). The housing minimum data set should then be widely disseminated, and the Census Bureau and other government agencies should be strongly encouraged to include it in their major surveys. For major surveys directed by individual researchers, such as the NLSY and PSID, finding supplementary funding for inclusion of a housing module would be required but well worth the investment. One important opportunity to build this minimum housing data set and include it in a major national panel survey would be the National Children's Study, set for launch in 2009.[52] Research on housing

[50] See citations in the discussion of "Subsidies in the Context of Welfare Reform."
[51] See citations in the discussion of "Homeownership."
[52] This proposal to include housing was approved in working group meetings leading up to the initial funding and launch activities for the study, but has not been implemented to date. The study directors are apparently still open to proposals to improve the survey instrument, however (Scheidt, 2006).

effects poses significant methodological as well as data challenges. Although randomized experiments are considered the gold standard for studying impacts, the complexity of housing effects strains the limits of this methodology. Part of the problem is the need for multiple experimental and control conditions. The disaggregation of "assisted housing"—or of any housing, for that matter—into the many component parts of its bundle of attributes to tease out the net effect of each is a clear example. Also at issue is the ability to implement the experiment as designed without contamination, bias from differential attrition, or other threats to generalizability.[53]

This comment is not meant to discourage the application of experimental methods. But it is a call for extra precautions, to be sure that the experimental design is consistent with the specific policy questions being asked, that the interventions are implemented as designed, and that the sites in which the experiment is carried out are as generalizable as possible. It also suggests that opportunities for nonexperimental studies be pursued as well, using appropriate statistical techniques to simulate experimental conditions.

Policy Considerations

Because the primary message of this review is that current evidence is insufficient—or, as acclaimed epidemiologist Stanislav Kasl said more than 30 years ago and is still true, "the true story of housing effects has not yet been told" (Kasl, 1976)—evaluating current housing assistance policy with the yardstick of research findings to date is perilous. With that caveat firmly in mind, several general notions are worth highlighting.

First, after years of accumulating evidence on the benefits of homeownership for children, the suggestive evidence that homeownership may not be the causal agent after all will come as a shock to many. This possibility aggravates the policy problem, because promoting homeownership is a straightforward policy lever, whereas impacting the characteristics of parents is not.

Second, the recent preliminary findings on housing affordability may say more about the possible benefits of well-endowed communities for children's outcomes than about the traditional concerns associated with housing affordability per se. If these results are sustained in further research, their greatest implication may be for the spatial aspects of housing policy—specifically, assisting poor families with children to gain access to high-quality communities.

Third, the findings on the economic self-sufficiency effects of assisted housing carry two main implications. Neither faction in the ongoing debate about the relative merits of supply-side versus demand-side subsidies can use the disincentive effect argument since the findings are consistent across both approaches. Further, if the decline in marriage associated with housing assistance receipt arises because of program regulations (as opposed to empowering a woman to separate from a problematic relationship), those regulations may be working at cross purposes with what is best for children's well-being and with other social programs promoting marriage.

Finally, the suggestive recent findings on housing and health argue for continued use of minimum housing quality standards in assisted housing programs and of building codes in private market, unassisted housing. Current regulations require that all assisted housing units be inspected annually, and a housing voucher can only be used in a private market housing unit that has passed this inspection. Most local jurisdictions also require inspections of at least a sample of multifamily housing

[53] Some analysts question whether randomized experiments are the best approach for studying social policy issues in any case, because of their inherent complexity (e.g., Garfinkel, Manski, & Michalopoulos, 1992; Heckman, 1992; Moffitt, 2003b).

units every few years. Housing and land use regulations are debated periodically, and the housing field is now engaged in one of those debates. Minimum housing quality standards and building codes are implicated in any attack on such regulations. Whether the current set of standards is optimal, however, is a legitimate area of debate. But given the suggestive evidence of the potentially salutary effects of decent, safe housing on children's well-being, this issue should be addressed with great care.

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