

The Psychology of Urban Community Development

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Note: The following are two empirical papers from the two waves (1993-1996 and 1998-2000) of the Salt Lake City Neighborhood Revitalization and Disorder project. The first paper by Douglas D. Perkins and Barbara B. Brown, entitled “The Psychology of Urban Community Development” was presented at the 1996 Urban Initiatives Mini-Convention Session on Neighborhoods, American Psychological Association, Toronto (8/11/96) It expands on a paper presented at the 5th Biennial Conference on Community Research & Action, 6/17/95, Chicago, IL. The second paper (Perkins, D.D., Brown, B.B., Long, D.A., Larsen, C. & Brown, G. (2004). Psychological predictors of neighborhood revitalization: A longitudinal and multi-level analysis) was presented at the 5th Conference of the European Network for Community Psychology, Berlin, Germany. It expanded on earlier presentations to the Urban Affairs Association, Detroit, MI, 4/27/01, and the Environmental Design Research Association, Philadelphia, 5/25/02. Portions of this research was supported by a grant from Salt Lake City Corp. (Perkins, PI; Brown, Co-PI) and grant number 98IJCX0022 from the National Institute of Justice (Brown, PI; Perkins, Co-PI). Points of view are the authors’ and do not necessarily represent the position of the funders. We thank the many students at the University of Utah who helped with data collection as part of several service-learning course projects. The Powerpoint slides from the final presentation may be requested from D. Perkins, Ph.D. Program in Community Research & Action, Dept. of Human & Org. Development, Peabody College #90, Vanderbilt University, Nashville, TN 37203-5721 USA
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Key words: community development, neighborhood revitalization spillover effects, place attachment, collective efficacy, community confidence, crime, block problems, incumbent upgrading, home repairs, home improvements, housing, home owner

The Psychology of Urban Community Development

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Paper presented at the 1996 Urban Initiatives Mini-Convention Session on Neighborhoods, American Psychological Association, Toronto. This research was supported in part by grants from the U.S. Department of Justice and the Department of Housing and Development Services of the Salt Lake City Corporation. We thank the many students at the University of Utah who helped with data collection as part of several service-learning course projects. This paper expands on one presented at the 5th Biennial Conference on Community Research & Action, 6/17/95, Chicago, IL. Correspondence: D. Perkins, Ph.D. Program in Community Research & Action, Dept. of Human & Org. Development, Peabody College #90, Vanderbilt University, Nashville, TN 37203-5721 USA D.Perkins@vanderbilt.edu

Abstract

This paper examines the relationships between objective and subjective indicators of urban neighborhood revitalization, on the one hand, and various community, environmental, and social psychological characteristics of individuals and residential street blocks, on the other. Physical features include incivilities (unkempt property, vandalism, litter), territorial markers, and defensible space. Social predictors include neighboring behavior, informal social control, and perceived crime and other quality-of-life problems. Subjective indicators of development include sense of community, place attachment, communitarianism, home and community satisfaction, and neighborhood confidence. Objective indicators include home ownership, residential stability, home improvements, and citizen participation in community organizations. Race and income are more predictive of objective than subjective indicators of development. Different physical environmental variables predicted all indicators of development except for block confidence and citizen participation. The social environment consistently predicts all the subjective indicators but only home improvements and citizen participation, among the objective indicators. Block-level effects were generally larger than corresponding individual-level effects. Examination of interrelationships among CD indicators will help us understand natural revitalization processes. The results may help guide city and neighborhood efforts to revitalize in the face of decline or gentrification. Government-supported indigenous efforts may be more effective at a lower social and economic cost than isolated, large-scale, state and federally-mandated, planned, and implemented urban projects and programs. Psychologists are playing a role in studying and recommending what works and could potentially play an even greater role by paying more attention to the community environment and to extra-individual levels of analysis, such as blocks, neighborhoods, and community organizations.

Keywords: urban neighborhood revitalization, redevelopment, incumbent upgrading, psychosocial factors, built environment, neighboring behavior, informal social control, sense of community, place attachment, communitarianism, pride of place, home and community satisfaction, neighborhood confidence, home ownership, residential stability, home improvements, citizen participation in community organizations

INTRODUCTION

The failures of urban neighborhood revitalization over the last 30 years may be due, in part, to urban planners' and policy-makers' ignorance of the *psychology* of community development. Despite an enormous infusion of public and private investment, research, and policy interest in urban community development, Kaplan (1991) found that, compared with successes in other countries, American neighborhood policies have enjoyed only mixed results. He also notes that research in urban planning and sociology has not led to a clear understanding of how the community social and physical environment are related to community development.

Urban neighborhood policy-makers across the U.S. and abroad have paid close attention to the work of community, environmental, and social psychologists, such as Florin and colleagues, Riger and Lavrakas, Saegert, Speer and Hughey, Taylor, Unger and Wandersman, and others. But outside psychology, virtually all research on urban gentrification and community development has focused exclusively on such objective indicators as home ownership, reinvestment, housing renovation and other property improvements, property values (appraised or sales), property taxes, property sales activity, housing code violations, or overall housing conditions (DeGiovanni, 1983). It has tended to ignore subjective, psychological indicators of development, such as sense of community, place attachment, communitarianism (i.e., the value we place on our community and on working to improve it), home or community satisfaction, and neighborhood confidence (i.e., direction).

For the most part, it has not even systematically examined community-focused social behaviors, attitudes or the overall physical environment as predictors of development. Nonpsychological community development research also generally has ignored the individual, household, and street block levels of analysis in favor of the neighborhood and city levels. Past research has shown that the processes of informal social control, social cohesion, and territoriality, which are intrinsic to neighborhood revitalization, are most important at the street block level rather than larger aggregates (Brown & Bentley, 1993; Perkins, Florin, Rich, Wandersman & Chavis, 1990; Taylor & Gottfredson, 1986; Varady, 1986).

SLIDES 2-6: ILLUSTRATIVE PHOTOS

Perkins et al. (1990) identified various block-level social and environmental characteristics that predict citizen participation in block associations. We hypothesize that some of these same characteristics will be related to both objective and subjective indicators of neighborhood improvement or decline. We examine three different kinds of psychologically significant predictors of neighborhood revitalization within the public and private *physical environment* of the block. The first is an absence of physical *incivilities* (which are symbolic signs of social disorder, such as abandoned homes, property deterioration, litter, graffiti and other forms of vandalism). The second kind are *defensible space* features (a term coined by Oscar Newman to signify characteristics of the built environment, such as lighting and barriers, that directly inhibit a criminal's ability to strike and may also reflect and encourage community territoriality and cohesion). The third kind of environmental predictor of community development are *territorial markers* (some are obvious, like a "neighborhood watch" sign other territorial cues are more subtle-- e.g., outdoor personalizations or decorations, gardening, "traces" of people present; Brown & Bentley, 1993). These three kinds of physical cues signal pride, concern, and a sense of ownership by residents and are related to greater social cohesion as well as to lesser crime and fear.

The *social environmental* predictors of community development include positive, or communitarian, behaviors, such as use of outdoor space, neighboring behavior, and informal social (territorial) control, and fewer perceived quality-of-life problems (e.g., poor city services, crime and gang activity), fear of crime, and street crime victimization.

The present study examines the relationship between those social and physical environmental conditions and both objective and subjective indicators of community development. Analyses were done at both the individual and block levels.

METHODS

[SLIDES 7-12: PROJECT PHOTOS]

The present data are taken from the pretest of a quasi-experimental study of a federally-sponsored urban community revitalization demonstration project. The centerpiece of the project is the construction of a moderate-income housing subdivision in the middle of an ethnically diverse, working-class neighborhood showing evidence of decline but with pockets of indigenous revitalization. This study focuses on the opinions of existing residents of the area and an in-depth examination of the social and environmental context of the community development process. The present, cross-sectional analyses explore the ongoing home and neighborhood improvements of the existing community (what planners refer to as "incumbent upgrading"), rather than the government initiative.

Sample selection. Within the study area, a multi-stage, cluster sampling procedure was developed to select 480 properties to assess (8 per block; see Block Environmental Inventory, below) and residents to interview on 60 street blocks (both sides of a street between intersections, not a square census block). Most (48) of the blocks were selected at random (with probability proportionate to size) and 12 more were (oversample) selected in close proximity to the new subdivision. The present data are based on the 305 households on which we have complete environmental and survey data for the present analyses.

Neighborhood Survey. The 30-minute survey was conducted by 83 graduate and undergraduate university students, including five fluent in Spanish who used a Spanish translation of the survey. Surveys were administered by telephone if a phone number was available, in-person if not. The survey measures include social environment variables and subjective and objective indicators of development.

Block Environmental Inventory (BEI). This study also marks the continued development and use of the BEI, the purpose of which is to objectively measure the physical environment of urban residential blocks. The procedure involves in-person observation by trained raters of a variety of residential and nonresidential physical cues associated with crime, fear, and indicators of neighborhood vitality or decline (Perkins et al., 1990).

RESULTS

Principal components analyses at the individual/household level were used to determine more reliable multi-item scales and to reduce the number of variables for the hierarchical multiple regression (MR) analyses. The following series of MRs show linkages, controlling for demographics (income and race) between various psychosocial and physical environmental conditions, on the one hand, and different objective and subjective indicators of neighborhood decline or improvement, on the other.

The present analyses address three general questions. The first question is: How are qualities of the physical environment (incivilities, territoriality, defensible space) and social

environment (neighboring/informal social control behaviors and crime and other disorder problems) related to each *subjective* indicator of development: community psychological ties (including communitarianism, sense of community, and place attachment), pride in one's home, community satisfaction and pride, and confidence in the future of one's streetblock?

[SLIDES 13-16: TABLES 1 THROUGH 4]

In Tables 1 through 4, demographics are largely unrelated to subjective indicators of development. The two exceptions, both at the block level only, are that predominantly white blocks report stronger psychological ties to the community and, interestingly, that lower-income blocks are more confident in the future of their block. Physical incivilities are related to less community satisfaction and pride at the block level and less home pride at the individual level. Territorial markers were related to home pride at both levels. The social psychological environment consistently predicts all the subjective indicators. As expected, perceptions of crime and disorder are related to less, and neighboring and social control are related to more, subjective community development.

A note on Table 2: the strong, negative block-level association between physical incivilities and community satisfaction and pride, which is nonsignificant at the individual level, demonstrates the importance of three things to two different audiences: it shows urban planners the importance of considering psychological variables, such as community satisfaction and pride; it shows psychologists the importance of considering extra-individual levels of analysis, such as residential blocks and neighborhoods; and it shows both audiences the importance of carefully examining the impact of the physical environment on community attitudes and community development.

Our second major question is: How are qualities of the physical environment and social environment related to each *objective* indicator of development: home ownership, residential stability, home improvements, and citizen participation in community organizations?

[SLIDES 17-21: TABLES 5 THROUGH 8 & PHOTO]

In Tables 5 through 8, race and income explain more variance in the objective indicators of development, especially home ownership and residential stability. Physical incivilities are negatively related to residential stability and home ownership, but *positively* related to home improvements, suggesting that blocks that appear run-down are also being fixed up. The social environment is only related to home improvements and citizen participation.

Tables 7 and 8 show that the greatest predictor of both home improvements and citizen participation at both levels is neighboring and informal social control behaviors. I should note that the lack of significant relationship between the physical environment and participation is not generalizable to other cities. In research by the first author in New York City and Baltimore, we found significant associations between incivilities, territoriality and defensible space, on the one hand, and participation in neighborhood improvement organizations on the other (Perkins, Brown & Taylor, 1996).

[SLIDES 22-23: TABLE 9 & PHOTO]

Our third question is: How are the indicators of community development interrelated? In Table 9, the indicators are more strongly intercorrelated within type (subjective and objective) than across type. There are significant cross-type relationships, however, especially at the block level. Home ownership predicts stronger community psychological ties, community pride and satisfaction, and home pride. Residential stability predicts pride in both home and community. And home improvements and citizen participation are related to community psychological ties.

DISCUSSION

It is important to note that these are cross-sectional relationships and so the causal direction is something we plan to consider longitudinally. But in sum, the results suggest that race and income are more predictive of objective than subjective indicators of development. Different physical environmental variables predicted all indicators of development except for block confidence and citizen participation. The social environment predicts all the subjective indicators and home improvements and citizen participation, among the objective indicators.

Block-level effects were consistently larger than corresponding individual-level effects (although this is not a true multi-level analysis in that block-level effects contain individual-level influences). Among the many relationships *among* indicators of development, perhaps the most intriguing are the links between community psychological ties and home ownership, home improvements and citizen participation. It seems clear that the objective indicators of development may increase community psychological ties, but if further research shows that community ties increase objective development, it would suggest greater efforts be made to improve community attitudes and social cohesion.

This research speaks to why, despite their hype, large government planned, mandated, and implemented urban projects and programs often fail (by not taking the informal social and physical environment into account); how smaller, locally-driven community development projects can succeed; and how psychologists are playing a role in studying and recommending what works and could potentially play an even greater role by paying more attention to the community environment and to extra-individual levels of analysis, such as blocks, neighborhoods, and community organizations.

The results should help guide community development policies at all levels and have broader implications for urban neighborhoods (e.g., crime prevention) and social research on them (e.g., the importance of an ecological and psychological perspective). For example, neighborhood improvement strategies generally target a specific range of effects (e.g., housing rehabilitation, new construction) in hopes of initiating other positive spillover effects (e.g., incumbent upgrading, residential stability, increased confidence, decreased crime). An examination of the interrelationships among indicators of community development will help us understand and distinguish natural revitalization processes and those due to intervention. Ultimately, it may be shown that indigenous neighborhood revitalization efforts are more effective at a lower social and economic cost than government- or privately-induced gentrification. The present data may help guide such efforts.

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LIST OF TABLES

NOTE: The following is a list of tables in the original paper, which are not available at this time. See the following paper for later, multi-level analyses.

Table 1: Multiple regression: physical and social environmental perceptions predicting community psychological ties at the individual and block levels

Table 2: Multiple regression: physical and social environmental perceptions predicting community satisfaction/pride at the individual and block levels

Table 3: Multiple regression: physical and social environmental perceptions predicting block confidence at the individual and block levels

Table 4: Multiple regression: physical and social environmental perceptions predicting home pride at the individual and block levels

Table 5: Multiple regression: physical and social environmental perceptions predicting home ownership at the individual and block levels

Table 6: Multiple regression: physical and social environmental perceptions predicting residential stability at the individual and block levels

Table 7: Multiple regression: physical and social environmental perceptions predicting home improvements at the individual and block levels

Table 8: Multiple regression: physical and social environmental perceptions predicting citizen participation at the individual and block levels

Table 9: Pearson and partial (in parentheses) correlations among indicators of community development at the individual (n=305; below diagonal) and block (n=60; above diagonal) levels

Psychological predictors of neighborhood revitalization:

A longitudinal and multi-level analysis

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Abstract

Research has begun to focus on the clustered in-fill developments that have become such a popular neighborhood revitalization strategy. What are the impacts of such development, of resident perceptions of place, and their community psychological ties on incumbent upgrading? Data were collected during and four years after construction of a HUD and city-subsidized, privately developed middle-income housing subdivision in a low-to-moderate-income area on the decline, physically and economically. Methods include: (1) an objective environmental inventory of the exterior of 925 properties on 59 street blocks, (2) a resident survey of community attitudes and self-reported home repairs and improvements, and (3) a city archive of building permits. Geographic proximity to the project was not linearly related to upgrading, but a comparison of radial rings found the area closest to the intervention to have the worst rated physical conditions at Time 1 and that all the rings up to 5/8 mile away improved slightly from Time 1 to Time 2. Using multilevel analysis at the individual and street block-levels, psychological proximity to the new subdivision (i.e., awareness of it, viewing it as part of one's neighborhood, knowing residents) was positively related to both objective exterior conditions and self-reported home repairs and improvements. Place attachment, perceived quality-of-life and crime problems on the block, collective efficacy, home ownership, income, length of residence, and ethnicity all were predictive of either objective or self-reported upgrading. Community confidence was not significantly related to upgrading. Results of the intervention were mixed, but the study confirms the importance of both psychological factors and the street block level of analysis in neighborhood revitalization.

The problem of neighborhood revitalization

Across the United States, the rings of poor and working-class neighborhoods just outside of redeveloped downtowns have physically deteriorated over the past 50 years. Policies to address this problem have included both large-scale strategies of urban renewal, widely regarded as a failure (Bellush & Hausknecht, 1967; Fainstein & Fainstein, 1988; Nyden & Wiewel, 1991), and small-scale Community Development Block Grants (CDBG) and home-owner housing subsidies. The literature is replete with neighborhood revitalization strategies that have had limited effects (Kaplan, 1991; Schorr, 1997). Project reports often show some obvious social or physical improvements in the immediate areas that are targeted. But a key assumption of virtually all revitalization strategies is that they will have positive secondary impacts on incumbent upgrading (physical improvements made by longtime residents) in the neighborhood surrounding the redeveloped space (Clay, 1979; Jeffrey & Pounder, 2000). Such spillover effects are rarely reported, but is that because such effects have not occurred or have not been measured?

We argue that there are two major limitations of past strategies and most research on revitalization. One is the neglect of psychosocial variables crucial to the revitalization process and the other is failure to focus systematically on incumbent upgrading, either as a spillover effect of nearby development projects or as a response to other household, block or neighborhood factors. What is it that makes people maintain or improve their homes? And what is the evidence, both objective and subjective, of such maintenance and improvements?

The Life-Cycle Theory of Neighborhood Decline

The idea that neighborhoods, similar to biological organisms, have a life cycle that takes them from birth to eventual decline (Ahlbrandt & Brophy, 1975) is controversial. It is important not to take the latter stages as inevitable (Metzger, 2000), but as it has greatly influenced urban policy, research, and real estate practices, let us review the theory. Stage One of a neighborhood life cycle is a healthy viable neighborhood, newly built and inhabited. Stage Two is incipient decline as homes begin to age, maintenance needs increase, but existing, and especially new, homeowners tend to be families with dependents and little disposable income to put into their homes. In Stage Three, the percentage of homeowners in the neighborhood begins to decrease due to both out-migration and in-fill, multi-unit construction (Galster, 1996; Goetz, 1979). Many of the owners who remain in the neighborhood may be older and on a fixed-income, making home maintenance and improvements both a physical and economic challenge (Grigsby, Baratz, Galster & Maclennan, 1987). Over time, younger, poorer, often ethnic minority buyers and renters continue to succeed those who can afford to, or are forced to, move--a process sometimes called "filtering" (Carmon, 1990; Hudson, 1980). Stage Four is accelerated decline when landlords and homeowners lose confidence in the future of the neighborhood and are discouraged from making major property investments because of the prospective financial loss due to low home resale or rent value (Ahlbrandt & Brophy, 1975; Grigsby et al., 1977; Megbolugbe et al., 1996; Varady, 1986). The fifth and final stage involves severe deterioration to the point of unsafe conditions and abandonment. The residents who remain spend less time outdoors, become strangers to each other, and the neighborhood may become a 'no man's land' of crime, fear and social and physical disorder (Ahlbrandt & Brophy, 1975; Perkins & Taylor, 1996; Skogan, 1990).

There is clearly a psychological component to neighborhood decline. The life-cycle theory itself may be partly to blame for decline and abandonment, in a self-fulfilling prophecy among planners, speculators, lenders, and real estate agents (Metzger, 2000). Homeowners face a similar "prisoner's dilemma"—it only makes sense to invest in upgrading one's property if one's

neighbors do likewise (Grigsby, 1963). But what would make residents feel confident enough about their neighborhood to invest significant time, energy, and money in their homes with no guarantees on that investment?

Home Ownership as the Nation's Neighborhood Revitalization Strategy

There are many public and private-sector revitalization strategies. Private investment in declining or abandoned neighborhoods may begin as real estate speculation based on the mere expectation that property values will increase. Gentrification is the process of wealthier residents buying, and often rehabilitating, properties in older, poor urban neighborhoods (DeGiovanni, 1984; Wyley & Hammel, 1999). Another primarily private strategy is in-fill housing, which occurs when vacant lands in already established neighborhoods are transformed into new homes. This is usually done on a plot-by-plot basis, but can also be done on a larger scale. Sometimes larger residential or vacant lots are subdivided and sold for new, denser development. Larger revitalization projects may be the result of nonprofit community development corporation initiatives or public-private redevelopment agency projects.

Home ownership has long been strongly supported by government subsidies, including mortgage interest tax deductions and HUD and FannieMae home financing programs. Why the emphasis on ownership? Local governments prefer homeowners because more valuable properties and wealthier residents mean a greater tax base (Coulson, Hwang & Imai, 2003). But the reasons are at least as physical, social, and political as they are economic. Politically, "homebuyers are 11 percent more likely to know who represents them in Congress, 9 percent more likely to know their school board representative, and 15 percent more likely to vote" (Rossi & Weber 1996, as cited in Collins, 1999, p. 2). Socially, homeowners stay four times longer in one location than renters (Rossi & Weber, 1996). A residentially stable neighborhood environment allows stronger social networks to develop. Homeowners are more likely to attend religious functions, parent-teacher meetings, and block organizations than renters (DiPasquale, & Glaeser, 1997; Rossi & Weber 1996). What is not always reported is the likelihood that these differences may be largely explained by the higher income of homeowners. Yet even controlling for income, age, and length of residence, children of homeowners are more likely to graduate from high school, have more years of schooling and higher wages, and less likely to become teenage parents, become idle, and receive welfare than renters (Collins, 1999; Green & White, 1994; Harkness & Newman 2002). Physically, homeowners have both the financial resources and vested interest needed to maintain and improve their homes and neighborhood, although this effect has been more assumed than empirically examined as the present study proposes to do. Encouraging homeownership and attracting homeowners is thus viewed as a positive and important goal towards stabilizing neighborhoods and reversing neighborhood decline (Orlebeke, 1997). But many important questions remain about the neighborhood impacts of homeownership rates (Haurin, Dietz, & Weinberg, 2003) and whether a concentrated cluster of government-subsidized, new owner-occupied housing can have a significant impact on an entire neighborhood.

Urban Homesteading: A Policy for the 1970s and 1980s. The idea of replacing non-residential sites with residential ones is supported by theory and research on territorial behavior showing that people tend to protect, maintain, and beautify their own property (Brown & Altman, 1983). Studies have shown that non-residential land uses, especially vacant ones, attract more physical incivilities, and social incivilities, such as lingering teenagers and gang activity, all of which may result in more reported crimes (Perkins, Wandersman, Rich, & Taylor, 1993; Taylor, Koons, Kurtz, Greene, & Perkins, 1995). New and renovated houses are expected to do two

things. First, they decrease the numbers of eyesores in a neighborhood, such as vacant lots and run-down housing, that are associated with lack of confidence in the neighborhood (Taylor, Shumaker, & Gottfredson, 1985). Second, they may create spillover improvements when existing residents gain confidence from witnessing improvements in the neighborhood, which may translate into residential stability and incumbent upgrading (Clay, 1983).

Urban homesteading is a “sweat equity” approach to attracting new homeowners to declining neighborhoods (Clay, 1983). It is intended to help revitalize the neighborhood by both upgrading abandoned property and inspiring neighborhood confidence and upgrading of other nearby properties. Dilapidated properties, often foreclosed and/or tax defaulted, are granted or sold at a very low cost, on the condition that the new owner improve the site and make it habitable. In 1975, HUD launched the Urban Homesteading Demonstration (UHD) project, in which government-owned properties were sold for \$1, to mostly middle-income households in exchange for bringing the property up to local codes and residing there for a minimum of three years. Forty neighborhoods in 23 cities were targeted. Unfortunately the UHD was not successful in inspiring spillover incumbent upgrading. Varady (1986) speculated that the home renovation interventions were spread too thinly across the neighborhood to achieve the intervention impact needed to reassure surrounding residents. Only about 1% of the homes in the evaluated neighborhoods were UHD sites. Thus it is not clear whether surrounding residents were even aware of the intervention.

There are other studies providing at least limited support for upgrading spillover effects of revitalization policies. Ginsberg (1983) found that home improvements financed in part by CDBG programs, had some spillover effects in the neighborhood, but at an immediate range: "One thousand dollars worth of assistance given as grants within a respondent's grid square (i.e., within 1/16th mile) generates about \$100 in repairs or maintenance" (Ginsberg, 1983, as cited in Varady, 1986, p.111). Taub, Taylor and Dunham (1984) also found that residents with neighbors who have upgraded their home, tend to upgrade theirs as well, more than residents who do not have neighbors who have had homes upgraded.

Clustered In-fill Housing: A Policy for the 1990s and Beyond? Isolated in-fill housing is clearly an important and desirable policy goal, but it will always be a relatively small portion of urban neighborhoods. After its fiscal crisis ended around 1975, New York City began a policy of seizing or buying hundreds of tax-defaulted apartment buildings and turning them over to the existing low-income residents as limited-equity co-ops, in the process empowering those residents to take control over the revitalization and maintenance of their buildings, resulting in significant improvements in housing quality (Leavitt & Saegert, 1990; Saegert & Winkel, 1996; 1998).

The location of those buildings in certain areas of Harlem and some outer-borough neighborhoods represented the start of a trend back towards the more geographically concentrated neighborhood revitalization policies of the 1950s and 1960s. If the spillover effects of isolated upgrading are small, there are reports that concentrated clusters of new housing and housing renovation can successfully reverse neighborhood decline. In declining neighborhoods in Israel, concentrated investment in new construction was needed to reverse neighborhood decline (Carmon & Baron, 1994). Blocks of new, owner-occupied housing, built by combinations of public and private funds, have helped revitalize several older, dilapidated neighborhoods in New York City (Ellen, Schill, Susin & Schwartz, 2001; Orlebeke, 1997; Schorr, 1997). The New York City Housing Partnership and Nehemiah Homes projects have been popular with homebuyers (Orlebeke, 1997) and have resulted in spillover effects, at least in terms of increased property

values (Ellen, et al. 2001). HUD's HOPE-VI program of replacing deteriorated public housing with mixed-income developments has applied this approach throughout the U.S.

Thus, clustered, mixed-income, in-fill housing represents a major policy thrust for helping to develop the physical, economic, and possibly even the social and political environments of older, declining neighborhoods (although the social impacts of gentrification are not always positive; Covington & Taylor, 1989; DeGiovanni, 1984). Evaluations of the concentrated development strategy of neighborhood revitalization are still ongoing. The Bronx intervention was accompanied by extensive social programs and other forms of assistance, which is important, but makes it impossible to detect an effect of housing alone (Schorr, 1997). Research is needed on incumbent upgrading in the older neighborhoods surrounding such developments.

In sum, despite high levels of government and private investments in neighborhood revitalization, few evaluations exist (Kaplan, 1991) and those studies generally find revitalization strategies to be of limited effectiveness (DeGiovanni, 1984; Hula, 1986; Krumholz, 1991; Pedone, 1982; Schoolman & Magid, 1986). Clearly, we do not yet understand either the individual or community dynamics required for successful revitalization and such conceptual limitations are exacerbated by poor quality and narrowly focused revitalization interventions and evaluations. Despite all the recent public and private resources and attention devoted to the development of owned, moderate-income housing in the middle of older, declining neighborhoods, there has been little research addressing whether this policy approach can actually work to revitalize the surrounding area.

Psychological predictors of revitalization

The failures of urban neighborhood revitalization over the last 40 years may be due in part to urban planners' and policy-makers' ignorance of the psychology of community development (DeGiovanni, 1984; Unger & Wandersman, 1985). Despite an enormous infusion of public and private investment, research, and policy interest in urban community development, Kaplan (1991) found that, compared with successes in other countries, American neighborhood policies have enjoyed only mixed results. He also notes that research in urban planning and sociology has not led to a clear understanding of how the community social and physical environment are related to community development.

Virtually all research on neighborhood revitalization has focused exclusively on such objective demographic and economic indicators as home ownership, reinvestment, property values (appraised or sales), property taxes, property sales activity, housing code violations, or residential mobility (DeGiovanni, 1983; Galster & Hesser, 1988). There have been isolated studies attending to more psychological constructs, such as community confidence (Varady, 1986). But none have systematically examined all the various psychological predictors of revitalization, such as place attachment, collective efficacy or "social capital" (social cohesion, social control, and citizen participation), confidence in the future of the community, and perceptions of block problems and positive neighborhood qualities, or more subjective indicators of revitalization, such as home pride and satisfaction. Few studies have even bothered to systematically measure important objective indicators, such as self-reported housing repairs and improvements or independent observational ratings of specific and defined physical environmental features and conditions.

Community Confidence

Residents of older, needier, more minority-concentrated neighborhoods have been less willing to invest in housing improvements (Taub, Taylor, & Dunham, 1984). As people perceive

the neighborhood declining (as it moves in the neighborhood life-cycle from stage two to stages three and four; Ahlbrandt & Brophy, 1975), residents may ask themselves, "Why should I sink more money into this house if my property may not hold its value?" Thus, residents' confidence in the future of their community has been identified as a key psychological predictor of revitalization and may help explain why certain interventions in certain communities have succeeded or failed. Most housing experts believe that it is a lack of neighborhood confidence that prevents residents from improving their home environments (Goetze & Colton, 1980; Schwab & Ringel, 1991; Varady, 1986). They argue that interventions must affect levels of confidence in the neighborhood and that that effect must be pervasive, spilling over from targeted improvement areas to surrounding residents. Thus community confidence is posited to mediate between objective physical and social qualities of a community and its eventual trajectory of decline, stability, or improvement.

Other indicators of development, such as incumbent upgrading, greater tenure stability, stabilized or increasing levels of owner occupancy, and property value increases, may flow from confidence. However, because these outcomes may take longer to achieve and because they are subject to a wide variety of external forces, such as the city's cycle of property tax revaluation, neighborhood confidence is considered by many to be a benchmark indicator of a community's capacity to revitalize. But the question remains: Can positive neighborhood expectations be created where negative ones predominate (Downs, 1981; Goetze, 1976)?

Varady (1986), in a study of approximately 1,700 non-UHD households in UHD neighborhoods, examined the impact of urban homesteading on neighbors' confidence and incumbent upgrading. Residents were defined as confident if they expected their neighborhood to remain the same and rated it "very good" or if they expected it to improve. Pessimists were defined as those expecting neighborhood conditions to get worse or expected the neighborhood to remain the same and rated it as "very bad" (Varady, 1986, p.75). There was no significant difference in confidence levels among those living in close proximity to the improved homesteading properties and those living a few blocks away. And living on a homesteading property block had no effect on the number of home improvements made by the non-UHD households. Those who did make home improvements were just as likely to be pessimistic about the future of the neighborhood (e.g., improving the home for resale) as confident (keeping up with the Joneses). In short, there were no noticeable spillover effects on either upgrading or confidence.

Individual-level confidence may not lead to upgrading, but at the block level, Varady found the opposite to be true. Residents on blocks with a high level of upkeep were more confident while poor physical conditions (such as poorly maintained streets and sidewalks, abandoned buildings, litter, broken streetlights, and poorly maintained landscaping) contributed to residents' pessimism about the future of the neighborhood. Well maintained yards also proved to be a good indicator of social cohesiveness, where "neighborhood peer pressure is strong enough to maintain a community standard" (Varady, 1986, p.493).

Confidence played a similarly mixed role in a Pittsburgh neighborhood targeted for revitalization (Ulusoy, 1998). From 1981 to 1990, a street where many renovations took place was found to generate spillover upgrading. But within ten years, all upgraded homes were sold or rented to other occupants and so incumbent upgrading did not lead to neighborhood stability. Ulusoy looks beyond incumbents to consider the confidence of those who choose to move into the neighborhood. According to Ulusoy, home improvements or repairs are noteworthy signs of revitalization regardless of whether an occupant stays or moves. The revitalization program she

studied instilled enough confidence in outsiders to invest in the community. But is it a true revitalization success if residential mobility is high?

Place Attachment as a Key Psychological Variable for Revitalization

Place attachment, people's emotional bonds to a geographical locale, such as the pride they take in their home or community, is associated with several revitalization outcomes. For example, neighborhood attachment predicts greater home maintenance (Galster & Hesser, 1982). Conversely, those who feel no particular attachment to the place they live form minimal investments or ties to it (Vinsel, Brown, Altman, & Foss, 1980) and are more likely to move (Stokols & Shumaker, 1982; Vinsel, et al., 1980). People who view their housing more as an investment than a home may be the first to sell when they sense that neighborhood property values may start to fall (Goetze & Colton, 1980). Place attachments are a resource that communities can draw on to help revitalize all aspects of the neighborhood environment. Politically, place attachment can motivate residents to participate in grassroots community self-help efforts and neighborhood organizing. Socially, place attachment can help maintain residents' commitment to the neighborhood despite serious social problems, such as crime and disorder. Economically, where residents, through their history in, and attachments to, a place discover what is unique about their community, they can preserve or develop places and events that generate tourism and other business opportunities (Banks & Mangan, 1999). Most of all, physically, place attachment fosters that same desire to develop, but also to preserve and defend one's home and community from physical threats to life and property (Brown & Perkins, 1992).

Social Capital and Collective Efficacy

Twenty-five years of research by community psychologists on the social fabric and dynamics of neighborhoods has identified several important dimensions of what economists, sociologists, and political scientists are now calling social capital (Coleman, 1988) or collective efficacy (Sampson, Raudenbush & Earls, 1997). Those dimensions include a psychological sense of community (Chavis & Wandersman, 1990), informal mutual assistance, or "neighboring" behavior (Unger & Wandersman, 1985), informal social control (Perkins et al., 1990), and formal citizen participation in community organizations (Chavis & Wandersman, 1990; Perkins et al., 1990; 1996; Saegert, 1989). Social capital has been found to aid in the revitalization of distressed inner-city housing (Saegert & Winkel, 1998), increase neighborhood stability (Temkin & Rohe, 1998), and through more effective social networks improve economic opportunities (Briggs, 1998). The development and maintenance of social capital is particularly vital in communities undergoing transition and deterioration (Taylor, Shumaker, Gottfredson, 1985).

The relationship between neighborhood physical conditions and social capital is complicated, however, by the dynamic nature of community change. Physical "incivilities," such as litter, graffiti, and dilapidation (see Disorder, below) are negatively related to (informal) sense of community and neighboring (Perkins et al., 1990). But incivilities may sometimes be a catalyst for greater (formal) citizen participation (Perkins et al., 1996) and other times inhibit participation (Clay, 1983; Perkins et al., 1996). Once organized and active, however, participation helps to maintain and improve the neighborhood (Schorr, 1997; Leavitt & Saegert, 1990; Unger & Wandersman, 1985). Research has linked community involvement with several revitalization-related outcomes, such as community confidence (Varady, 1986), home maintenance (Galster & Hesser, 1982), and residential stability (Sampson et al., 1997).

Collective efficacy has been conceptualized as a combination of social cohesion (i.e., neighboring and sense of community) and social control (Sampson et al., 1997). Efficacy is even more strongly linked than social capital to preventing neighborhood disorder and decline. When one knows one's neighbors, one can more readily detect strangers or other problems and one is more likely to intervene and to discuss those problems with each other. Cohesion has been linked with neighborhood improvements (DeGiovanni, 1984), with lower levels of fear on residential blocks (Taylor, Gottfredson, & Brower, 1984), with crime victimizations in disadvantaged neighborhoods (Hirschfield & Bowers, 1997), and consistently with citizen participation (Chavis & Wandersman, 1990; Perkins et al., 1996; Unger & Wandersman, 1985). Informal social control is the everyday regulation of community norms of behavior by residents. In the narrowest sense, that may mean confronting miscreants directly. But more broadly, social control may overlap with formal participation when contacting community leaders or government officials about problems. Low levels of collective efficacy strongly predict decline-related outcomes such as perceived and actual rates of violence (Sampson et al., 1997).

Neighborhood qualities

Neighborhood qualities and the level of public services (e.g., housing, schools, police protection, public spaces) are thought to be important factors in understanding neighborhood confidence and revitalization (Ahlbrandt & Brophy, 1975; Ahlbrandt & Cunningham, 1979; Goetze, 1976). Several studies have suggested that neighborhood, as a housing characteristic, is an important factor in people's decisions on where to live (Coleman, working paper, no. 40, 1979; cited in Bratt, 1983; Grigsby, 1971; cited in Goetze, 1976).

Neighbors' Property Improvements

There is ample evidence that deteriorating physical conditions of housing and neighborhoods are associated with neighborhood pessimism (Goetze, 1980; Varady, 1986), lower residential satisfaction (Galster & Hesser, 1981), intentions to move, and reductions in home maintenance (Ahlbrandt & Cunningham, 1979). Conversely, improving the quality of the physical environment may increase satisfaction with the neighborhood (Perkins et al., 1992).

Perceived Crime, Disorder and Other Quality-of-Life Problems

Block and neighborhood environmental problems are expected to have the opposite effect of positive neighborhood qualities and neighbors improving their property. In fact, the lack of physical incivilities may be an indicator of revitalization. But the question remains: Do perceived community problems inhibit home improvements? Territorial markers and defensible space are known to inhibit crime as well as disorder problems, such as graffiti, vandalism, and vacant or unkempt property (Brown & Altman, 1983; Perkins et al., 1992; 1993). Crime and other social incivilities in turn undermine neighborhood confidence and are associated with disinvestment and deterioration of the built environment (Ahlbrandt, 1984; Skogan, 1990). Perceived disorder is related to fear of crime (Perkins & Taylor, 1996) as residents associate incivilities with the notion that formal and informal social controls (see Efficacy, above) have broken down. Individuals who perceive more cues of disorder have less community satisfaction and sense of community (Perkins et al., 1990) and may have lower community confidence (Bratt, 1983).

Importance of The Street Block Level to Revitalization

Neighborhood revitalization research generally has ignored the individual, household, and street block levels of analysis in favor of the neighborhood and city levels. Sociological studies

often select census tract levels due to data convenience and broad socioeconomic similarities within tracts. Yet, there is evidence that where spillover occurs, it is geographically very limited. In fact, one study showed that upgrading spills over to affect neighbors' home improvements only up to 1/16th of a mile away (Ginsberg, 1983). The policy move back toward larger revitalization projects assumes they will have more widespread effects. Yet there is as yet no evidence for that. With limited resources, it may make more sense to spread many more small-scale interventions (based on helping incumbents rather than gentrifiers and speculators) throughout every poor and working-class communities to have the widest possible effect. The failures of past development efforts may reflect the fact that this issue of scale is often ignored. There has been very little work done to specify how economic investments in neighborhood improvements are supposed to result in neighborhood-wide improvements.

However, recent research in community and environmental psychology has been able to link physical features very close to home to corresponding social processes that support revitalization (Brown & Bentley, 1993; Perkins, Florin, Rich, Wandersman & Chavis, 1990; Perkins et al., 1993; 1996). In particular, these studies have shown that the processes of informal social control, social cohesion, and territoriality, which are intrinsic to neighborhood revitalization, are most important at the street block level (both sides of one street, as opposed to a square census block) rather than larger aggregates. These researchers argue that residential blocks have clear and natural boundaries and offer many advantages for focusing neighborhood improvement efforts. They point out how residential blocks often vary substantially within one neighborhood, with some achieving more successful outcomes than others. Unlike larger neighborhoods, street blocks serve as effective "behavior settings," small-scaled and familiar groups, bounded by time (early evenings and weekends) and space, and exerting strong influence on the behavior and dynamics of the group. The social cohesion and community confidence promoted by such settings may influence one's decision to invest in house upgrading (Galster & Hesser, 1982). In short, new housing 10 blocks away may be less important to residents' attitudes and behaviors than the condition of houses right next door. Careful attention to the block context is needed to test the link between rehabilitation and broader revitalization (Varady, 1986).

The present study

The present study has two major goals: (1) to evaluate spillover effects of a major HUD and city-sponsored public-private, concentrated housing development-oriented, neighborhood revitalization project; and (2) to examine the individual and street block-level relationships between community-focused psychological factors and various objective indicators of incumbent upgrading. The psychological factors include place attachment, collective efficacy (social cohesion and control), perceived neighborhood qualities, and perceived quality-of-life and crime problems on one's block.

Neighborhood Context and Intervention

The Setting. In the early 1990s, based on plans for a large revitalization intervention (see below), two adjacent, demographically matched, and declining working-class residential neighborhoods, in close proximity to downtown Salt Lake City (SLC), Utah, were selected. The area has become notorious locally for economic decline and growing levels of dilapidation, youth gang violence, and crime. Although the wider public image of the neighborhoods is far worse than the reality, there are some real causes for concern. The 1990 census reveals that many residents in both neighborhoods are aging in place, with a higher proportion of elderly than is the case city-wide. School enrollment figures also reveal a rapid increase in minority and foreign-born families

with children (42% of the student body are ethnic or racial minorities (SLC Corp., 1993), compared to about 35% for the entire neighborhood population). These numbers may seem small compared to cities in other parts of the U.S., but the selected neighborhoods, by most accounts, are the most diverse in the entire state.

These social groups typically suffer from low incomes, limited political power, and increased vulnerability to crime. According to city data (SLC Corp., 1993), average household incomes have steadily decreased from \$26,000 in 1970, to \$19,000 in 1990 (in constant 1989 dollars). This is well below the 1989 city average household income of \$29,000. The area has an (unweighted) poverty rate of almost 30% compared with 16% city wide (SLC Corp., 1993). Although modest, single-family, detached houses comprise the majority of the housing stock, owner occupancy, a critical contributor to neighborhood stability, decreased from 68% in 1980 to 56.6% in 1990. Most of the homes in this area were built between 1946 and 1965, and hence are in need of rehabilitation and repair, such as new roofs, and interior remodeling (SLC Corp., 1993). In sum, the community resembles a classic life cycle Stage Three neighborhood in transition (with pockets of Stages Four and Five), as it is becoming poorer, older, more ethnically diverse, and with more transient housing patterns. Unless effective development interventions are instituted, this community risks a continuation of the trend toward disinvestment, crime problems, and social unease.

The Intervention: Moderate-income Housing Development. From 1993 to 1995, SLC used part of a special \$3.9 million Congressional HUD appropriation, as well as state, local, and private funds to redevelop a mildly contaminated 28-acre property and build a middle- and moderate-income subdivision of 84 relatively large homes and lots surrounded by an old, working-class neighborhood of modest homes on small lots. Some houses were sold at market rate and others had second loan financing to allow moderate-income families (those making 80% or below of the MSA median income, or \$32,500 for a family of four in 1994) to buy the houses. The new homes and lots are significantly larger than the surrounding homes. The new housing was designed, at 1,400 square feet per floor, to attract middle income residents (a particular desire of the local Community Council). With HUD backing, SLC also created two subsidized home loan programs to serve the surrounding community: one for gap financing for affordable in-fill housing; the other, a subsidized home improvement loan program. The aim of both the new housing and rehabilitation programs is to create beneficial spillover effects on physical changes and confidence in the wider neighborhood.

One strength of this intervention, in contrast to older urban renewal projects, is that a neighborhood was not displaced. The site had been a middle school and a plant nursery. A river bisects the property. The nursery and a now-dry portion of the old riverbed both contained some level of soil contamination, which had to be abated prior to development, thus qualifying this as a "brownfields" project. In order for a private developer to be willing to invest in the site, the city used most of the HUD grant to make infrastructure improvements (demolishing existing abandoned buildings, cleaning up the garbage-strewn vacant lot, assuring environmental quality, and preparing utility infrastructure). Thus, the new housing represents a fairly expensive initial investment per dwelling unit, compared with most housing rehabilitation and in-fill programs.

Research Questions

The present study addresses the following research questions. Do blocks differ significantly in their levels of incumbent upgrading? Have residents who live closer to the new subdivision improved the physical environment of their home, compared to residents who live

farther away? Do home ownership, income, length of residence, ethnicity, religion, or number of children predict incumbent upgrading? Controlling for those demographics, do psychological proximity to the new subdivision, community confidence, place attachment, collective efficacy, perceived neighborhood qualities, neighbor property improvements, or perceptions of block quality-of-life and crime problems predict upgrading? If so, which predictors are most important and at what level of analysis, individual or street-block? Finally, can maps of the study area created using geocodes of the same data reveal any spatial patterns or “hot spots” in the neighborhood that may aid interpretation of the data?

Methods

Sample Selection

The two, adjacent sample neighborhoods were defined by census block groups (from three census tracts) that had similar socioeconomic variables and were largely bounded by major roads or freeways. Within this area, a multi-stage cluster sampling procedure was developed to select 480 residential properties on a total of 60 street blocks (both sides of one street). Eligible blocks had between 10 and 100 residential properties. Blocks containing large rental complexes or commercial strips were excluded under the assumption that they are less likely to engender upgrading. (By accident, one block of apartment buildings was included.) Next, 52 sample blocks were chosen with a probability-proportionate-to-size procedure that enumerated households from the 1990 census, followed by random selection of a household, which then determined the chosen face block. In addition, 8 blocks were chosen at random from blocks within two blocks of the new housing intervention in order to over-sample residents close to the new housing. (Later, two small blocks that were extensions of the same street were combined to make one larger block, resulting in a sample of 59 blocks.) Once a block face was chosen, properties were selected on the block starting with the lowest address, then selecting every third residence. At Time 1, eight addresses were selected per block. At Time 2, those same eight plus a supplemental sample of 20 additional addresses per block were selected, resulting in a combined Time 1-Time 2 sample of 926 different addresses on which we have some data, ranging from 9 to 19 properties per block. Previous research and statistical power analyses reveal that 59 blocks are an adequate sample size (i.e., for an alpha level of .05, effect size of $r = .30$ for block data, power is approximately .75, 1-tailed; for the individual house level power is greater than .995; see Taylor & Perkins, 1989, for a discussion of sample size per block).

Longitudinal Research Design

Surveys and inventories (see below) were taken during the construction of the subdivision in 1993-95 (Time 1), and after, in 1998-99 (Time 2). The total number of households both interviewed and inventoried at Time 1 was $N = 365$; and at Time 2 was $N = 593$. The total number of addresses inventoried at Time 2 was $N = 901$; and the total number of households surveyed at Time 2 was $N = 618$. Because names were not requested as part of the survey or as part of the environmental inventory, assuring a true panel study is not feasible. Through meticulous analysis of address, length of residence, age and other demographic characteristics, the most accurate description of sample panel characteristics is as follows: address matches at both Time 1 and at Time 2 was $N = 315$; same-household matches at both Time 1 and at Time 2 was $N = 147$; and same-person matches at both Time 1 and at Time 2 was $N = 78$. Since panel attrition is substantial, individual-level longitudinal analyses are impossible. Most of the present data are from Time 2, but each of the substantive Time 1 independent variables was aggregated to the street block level and used both in raw form and to derive regression residuals on the same variables at

Time 2. This was done in order to test the effects of unexpected block-level changes in each independent variable (see Strategy of Analysis, below).

Multiple Data Sources

Block Environmental Inventory (BEI). This study marks the continued development and use of the BEI, the purpose of which is to objectively measure the physical environment of urban residential blocks (Perkins et al., 1990; 1992). The procedure involves in-person observation by trained raters of a variety of residential and nonresidential physical cues associated with crime, fear, and indicators of residential vitality or decline. In addition to the items listed below, the BEI includes a variety of block-level social (number and description of users of outdoor space) and physical (e.g., vacant homes, abandoned cars) features and a detailed ratings checklist on all nonresidential properties on the block. Other property-level items (both residential and nonresidential) include defensible space features, such as lighting and barriers. Inter-rater agreement has been found to be strong in previous versions of the BEI. Prior to the present data collection, raters were trained in the same or similar neighborhoods and a selection of target homes were independently rated by two raters at both Time 1 (n = 365) and 2 (n = 201). Resulting inter-rater reliability scores (Cronbach alpha coefficients) yielded acceptable reliability, ranging from .70 to .93 at Time 1 and .92 to 1.00 at Time 2.

Resident Survey. The 30-minute survey was conducted at Time 1 by 83 graduate and undergraduate university students, including five fluent in Spanish who used a Spanish translation of the survey. At Time 2, a professional survey research firm was contracted to complete the survey, again using Spanish or English versions depending upon respondent preference. Surveys were administered by telephone if a phone number was available, in-person if not. At both Time 1 and Time 2, approximately half of the interviews were administered by telephone and half in person. Respondents were not compensated at Time 1 but were given \$25 for participating at Time 2. A small number of late respondents at Time 2, mainly on low-N blocks, completed a self-administered version and were paid \$50. For the full Time 2 sample (including residents of the new subdivision who are not included in the present study), of 930 initial contacts for interviews, 13.65% refused and 16.76% were unresolved (no one at home for eight or more contacts or no English or Spanish spoken). Thus 84.2% of English or Spanish speakers contacted provided interviews, whereas 72.7% of all addresses contacted yielded interviews. At Time 1, the response rate was 74% and at least four residents were interviewed on each of the 59 blocks.

Building Permits. A database on city wide building permits issued from January 1993, through September 2000, was supplied by SLC. After excluding permits outside the defined study area, each permit was coded based on street address as on, near (within two blocks), or far from (beyond two blocks) the closest sampled block number. Only the number of permits per sampled block or address from November 1997, through September 2000, and the pre-construction estimated valuations of those permits were used in the present analyses. Demolition permits were included, but were set to \$0 for valuation.

Measures

Demographic Control Variables. In all multivariate analyses, the following three controls were used: household income, home ownership, and length of residence. In addition, race (White, non-Hispanic - other), age, religion (Mormon - other), and number of children in household were examined at the bivariate level and in multivariate models, for which each of those additional demographics correlated significantly with the dependent variable.

Independent Variables. The following are community-focused psychological predictors of objective and self-reported upgrading. Each was analyzed at both the individual and block-aggregated levels. In order to test for interaction effects, composite variables were computed with raw, rather than standardized, scores. Items were adjusted to the same scale as needed. Cronbach's Alpha reliabilities are based on Time 2 and would be slightly higher if standardized items were used.

Place Attachment (alpha = .87) was calculated using the mean of a 7-item set. Four items tapped respondents' satisfaction and pride with their neighborhood and street block. One item asked how attached the respondent felt to the lived-on block. One item asked how unhappy they would be if for any reason they had to move. And one item asked whether the respondent would recommend the "neighborhood as a good place for young families to move to now?"

Community Confidence was calculated using the mean of two items ($r(590) = .40, p < .000$). "In the past 2 years (or since you moved in), have the general conditions on your block gotten better, stayed about the same, or gotten worse?" Using the same format, respondents also rated their impression of the general conditions for the next two years. Higher values indicate more confidence.

Collective Efficacy (alpha = .65) was calculated using the mean of 12 items with higher values indicating more collective efficacy. The construct is based on Sampson's (et al., 1997) view that social cohesion and control are two essential components of collective efficacy. The social cohesion items included such things as knowing neighbors by name, informal borrowing/loaning relationships with neighbors, and speaking with neighbors about a local problem. The social control items measured such things as wanting to be involved in neighborhood improvements, willingness to join a block association, and feeling in control of the sidewalk in front of the home.

Perceived Neighborhood Qualities (alpha = .78) was calculated using the mean of a 7-item set with higher values indicating more positive evaluations. Respondents rated such neighborhood qualities as police protection, housing quality and affordability, availability of child care, friendliness of neighbors, nearby parks and playgrounds, and the public image of the neighborhood.

Perceived Block Quality-of-life Problems (alpha = .56) was calculated using the mean of 6 items with higher scores indicating more block quality-of-life problems. Items included were, for example, "In the past 12 months, has your block had any vacant homes or buildings?" or "...any neighbors who don't keep up their property?" Other items asked respondents to rate how big of problem things like graffiti, traffic, and loud neighbors were to them.

Perceived Block Crime Problems (alpha = .73) was calculated using the mean of 5 items with higher scores indicating more block crime problems. For each item, respondents were asked about incidents occurring within the past 12 months, such as whether "your block had any house or place you suspect drug dealing occurs?" and "...incidents of street robbery or assault?" and "...evidence of gang activity?"

Neighbors Improved Property was measured with the following item (coded 1 for Yes and 0 for No): "In the past 12 months, has your block had any neighbors who have improved their property?"

Psychological Proximity to New Subdivision (alpha = .58; r w/ Geographic Proximity (below) = .34 (individual level)/ .71 (block level)) was calculated using the mean of a 4-item set

with higher values indicating more psychological proximity to the new subdivision. Items included such things as, "Are you aware of the [RP] subdivision?" and "Do you personally know anyone who lives in this new subdivision?"

Geographic Proximity to New Subdivision (Reverse of GIS-calculated aerial distances from centroid of subdivision to each block and to each sampled address within 2 blocks). Due to its correlation with Psychological Proximity, this variable was only used in testing interaction effects. In choosing between the two for main effects, Psychological Proximity was thought to potentially have more direct influence on upgrading.

Indicators of neighborhood revitalization (Dependent Variables). Observed Exterior Conditions (inventoried by trained raters; $\alpha = .63$) was calculated using the mean of 11 items with higher values indicating more positive conditions. Items included such things, observable to the pedestrian, as litter on or in front of property, peeling paint, graffiti, broken windows or fixtures, and house, yard or window decorations.

Self-Reported Home Repairs & Improvements ($\alpha = .86$) was calculated using the mean of 15 items with higher scores indicating more improvements. The 15 items all had the same question, "During the past 12 months, have any of the following repairs or improvements been made." Examples of items were, exterior: painting on the outside of the house, work on the roofing or gutters; and interior: carpentry, electrical work, and plumbing fixtures.

Building Permits was a count of the number of permits obtained from the city to build during the period during and one year following the survey (11/97 - 9/00).

Estimated Valuations of Building Permits was the sum of building permit valuations (in dollars) taken by the city between the dates 11/97 and 9/00 (same dates as above).

Strategy of Analysis

Hierarchical Linear Modeling (HLM) is an appropriate technique for understanding how incumbent upgrading relates to both individual-level and block-level phenomena. The physical condition of housing relates to perceptions, resources, and other characteristics of the resident as well as to their neighbors and other characteristics of the neighborhood setting, the street block, within which the resident and home are embedded. When residents of the same block are analyzed as if they are independently drawn samples, the analysis is biased by overlooking the effect that living on the same block has on individuals. If indeed residents are drawn systematically to particular blocks, or if blocks evolve in ways that create distinct cultures of revitalization, then the embeddedness of residents in their block needs to be taken into account statistically.

Furthermore, HLM can describe the extent to which the variability in revitalization occurs at the individual level versus the block level. Typically, HLM analyses find that many social phenomena are more strongly weighted toward individual-level sources of variability. That is also true in these analyses, although a substantial portion of the variability in incumbent upgrading is between blocks. To test this, each HLM analysis begins with an unconditional model that addresses the following question: Given the small scale of the residential block, and the fact that the adjacent neighborhoods were chosen to be demographically similar, do blocks vary in terms of each address-level revitalization indicator?

Although Bryk and Raudenbush (1992) argue that, in HLM, the number of independent variables should be limited due to model fit and sample size limitations, we decided that it is important to include income, home ownership, and length of residence in any prediction of home

improvements or conditions. Our general strategy for each model is to add sets of predictors hierarchically to the HLM in the following order to see if each set improves model fit significantly: after the unconditional model, we add Time 2 Level 1 (individual/household) income, home ownership and length of residence as controls (group-centered and fixed); then Time 1 Level 2 (block) independent variables, then we add Level 2 Time 1-Time 2 change predictors (standardized residuals from linear regressions), then Level 1 Time 2 independent variables (group centered and fixed: i.e., not allowing slopes to vary across blocks).

That is the full fixed model (not including possible interaction terms and prior to testing, one at a time, for random effects, i.e., allowing Level 1 predictor's slopes to vary across blocks). We then remove nonsignificant substantive predictors (however, we always retain the Level 1 counterpart to a significant level 2 predictor. In most cases, this trimmed model is the most parsimonious model to report. But we go on to test any Level 1 interaction terms (fixed) that show significant correlations with the particular outcome (as well as any components of the interaction terms that may have been removed in the previous step). Finally, we check for significant random variance in substantive Level 1 predictors left in the model (one at a time). If an interaction or random effect makes another predictor nonsignificant, the nonsignificant predictor is removed. The HLM analyses used full maximum likelihood estimation and pairwise deletion of missing values.

Strategy for Analyzing Level 2 over Time. At Level 2 (block), residualized change scores (based on deviations from the score predicted by the block's Time 1 value) represent unexpected increases (positive) or decreases (negative) in a predictor from Time 1 (1994-95) to Time 2 (1998-99). For every change variable included in the model, the corresponding Time 1 Level 2 predictor was included for comparison (although not to control for their mutual influence since Time 1 and residualized change scores are perfectly orthogonal). It is important to note that, despite extensive effort to obtain a panel sample, there was considerable change in the individual-level survey sample from Time 1 to Time 2. This was due to a combination of residential mobility, refusals at Time 2, within-household replacements, and increasing the Time 2 sample. Thus, the Time 1 and change variables represent sampled blocks at different time points, but not necessarily the same individuals to represent those blocks at each time. For every Time 2 Level 2 predictor in the model, the corresponding Time 2 Level 1 (individual) predictor was also included to be sure the block-level effect included no individual-level influence.

Results

Trends in housing construction and residential building permits

Housing construction activity shows much more volatility over time than nonresidential construction. According to data from the Bureau of Economic and Business Research at the University of Utah, there is a clear pattern of waves of residential construction in Utah from 1975 through 1996. For both Salt Lake County and statewide, residential building permits and building construction peaked in 1977, were depressed in 1981-82, peaked again in 1984, were depressed again from 1987-90, and began a slightly longer period of growth peaking in 1996. During the Time 2 period for building permits in the present study (November 1997-September 2000), Salt Lake County residential building permits decreased from 8,479 to 5,736 (1997), 6,416 (1998), and 5,286 (1999). Thus, this was a period of moderately high local residential building permit activity, although it was beginning to trend downward.

Trends in Revitalization from Time 1 to Time 2

At Time 1, long-term residents had significantly better housing conditions ($t = 4.22, p < .001$) than did short-term residents. From Time 1 to Time 2, observed conditions improved significantly over time ($t = 4.39, p < .001$) while the proportion of home owners ($t = 2.09, p < .05$) and ethnic ($t = 3.39, p < .001$) and religious minorities ($t = 5.51, p < .001$) increased. The number and overall value of building permits at sampled addresses was smaller at Time 2, but did not change significantly for the neighborhood as a whole. We also tested block-level permits and valuations, Time 1 versus Time 2 (using all permits on sampled blocks, not just sampled addresses). There was an almost significant decrease. However, the pre-post subdivision comparison of rates of permits for the entire neighborhood was almost identical. Thus, by narrowing the scope to just sampled addresses and just 1993-1995 vs. Nov. 1997-Sept. 2000 (i.e., 1 month less at Time 2 and not counting the interim period), we somehow pick up a significant decrease in permits and valuations.

Individual and Block-level Correlations and Partial Correlations

Most of the significant relationships between demographic or community psychological variables and home upgrading will be discussed in the multi-level, multivariate analyses below. Some of the individual and block level bivariate correlations and partials in Tables 1 and 2 are worth noting. But perhaps even more noteworthy are the many variables that are not significantly related to the dependent variables, as expected.

[INSERT TABLE 1 ABOUT HERE]

Correlations among revitalization outcomes. The various revitalization indicators were not strongly intercorrelated, except for building permits and permit valuation estimates, which were only related at the individual-level of analysis. In fact, none of the revitalization indicators showed significant (at $p < .10$) relations at the block aggregate level ($n = 59$). The only other significant relationship among outcomes was individual-level observed positive exterior conditions with fewer permits issued ($r = -.10$; partial $r = -.14$).

Individual-level and Block-level Correlations. Confidence in the future of one's community did not correlate significantly with any of the revitalization indicators (Table 1) at the bivariate level or when controlling for demographics. It was therefore left out of the multivariate analyses below. The block-level correlations in Table 2 include data collected at Time 1, four to six years before the rest of the data. The only significant Time 1 correlates were perceived block quality-of-life problems predicting, at Time 2, worse mean objective exterior conditions and greater mean permit valuation estimates; block crime problems predicting worse mean objective exterior conditions (bivariate) or greater mean permit valuations (partial); and Time 1 block-mean collective efficacy predicting more mean self-reported home improvements at Time 2. But the greater value of the Time 1 data is as a baseline for examining the effects of block changes over time. Block-level objective exterior conditions were associated with increases in block mean place attachment, collective efficacy, and neighborhood qualities, and decreased block problems. Self-reported home improvements (aggregated to the block) were associated with decreases in block mean place attachment and increases in improvements by block neighbors. Among sampled houses, building permits issued per block were associated with increases in block crime.

[INSERT TABLE 2 ABOUT HERE]

Because the likelihood of a sampled household obtaining a building permit was small, we collected permit information for the entire block and correlated that at Time 2 with all other block-level variables. The only relationships were between total permits issued on the block and greater

block resident tenure ($r(59) = .24, p < .07$), greater distance from the new subdivision ($r(59) = .32, p < .02$), and less awareness of the new subdivision at Time 2 ($r(59) = -.23, p < .09$). The sum of permit valuations per block at Time 2 were associated with greater block mean crime at Time 1 ($r(59) = .40, p = .002$) and --only when controlling for income, length of residence and home ownership --greater block mean quality-of-life problems ($r(54) = .24, p = .07$).

Analyses of Variance by Distance from New Subdivision

Also disappointing was the lack of any relationships with geographic proximity to the new subdivision. It correlated with psychological proximity, of course, and slightly and negatively with place attachment and collective efficacy (which must have hindered the opportunity for revitalization spillover effects). The apparent non-effects for spatial distance from the intervention were further explored in two ways: (1) analysis of variance (ANOVA) of outcomes by increasingly larger rings (starting with 1/16-mile) around the subdivision, to test for curvilinear or highly skewed effects (e.g., only very close to the intervention, as found by Ginsberg, 1983); and (2) using Geographic Information System (GIS) maps of the data.

The ANOVAs revealed that, at Time 1 (pre-intervention), objective exterior conditions were worst for the closest ring and best for the outer ring (beyond 5/8 of a mile). At Time 2 (post-intervention), conditions had improved slightly in the closest ring and worsened slightly in the farthest ring. But the three interim rings also improved and the closest ring was still slightly worse than the others.

Geographic Information System (GIS) Maps

Neighborhood maps of geocoded demographic information, psychological predictors of revitalization, and each dependent variable were carefully examined for spatial patterns and “hot spots” which might contribute to our interpretation of the lack of linear distance effects. Aside from the boundary blocks on three sides of the subdivision showing signs of revitalization, owing mainly to the extension of new construction into those blocks, there were few apparent effects of the intervention. One of those boundary blocks also had, and still has, a row of dilapidated rental properties.

But GIS maps are not needed for those observations, which are even more readily apparent from a quick in-person tour of those streets. Where GIS was more helpful was in highlighting a concentration of smaller, more deteriorated properties, as well as reported crime and other problems in a nearby, lower-income area on either side of a major thoroughfare with a large number of commercial and other nonresidential properties.

About the same distance in the other direction from the new subdivision are three blocks with similar problems. We were aware of one of them having a small public housing project and so it was excluded from the sampling procedure. But the GIS maps helped flag the other two. Upon closer inspection, we found that one consisted of apartment buildings (half of which were renovated and converted into condominiums between Time 1 and Time 2). The other has a youth organization on the corner, which might explain some of the resident concerns. All three blocks are near an elementary school serving the most ethnically diverse population in the city.

The fact that both of these areas are within just a few blocks of the new subdivision is, of course, one of the main reasons for the intervention and its location. But it may help to explain the lack of geographic proximity effects on revitalization.

Hierarchical Linear Models

Observed Home Conditions. In HLM an unconditional model tests whether Level 2 units (blocks) differ significantly on the dependent variable. This analysis is equivalent to a one-way analysis of variance on home inventories by block. Results show that the blocks do differ ($t(58) = 54.8, p < .001$). The analysis also allows computation of variance components to show how the total variance in inventories is divided between Levels 1 and 2--individuals within blocks and blocks. Block level differences account for 19.8% of the total variance in exterior home inventories, which is significant ($\chi^2(58) = 276.8, p < .001$).

[INSERT TABLE 3 ABOUT HERE]

Based on significant bivariate correlations between inventoried conditions and White non-Hispanic residents ($r = .15, p < .01$), Mormon residents ($r = .09, p < .05$), and the number of children in the household ($r = -.14, p < .01$), a model was tested including those as controls. Religion and children were not significant controlling for other predictors and thus were not used in the final model (see Table 3). (Age of survey respondent was also correlated with inventoried conditions ($r = .19, p < .01$), but was not included because its correlation with length of residence is $r = .71$.) Adding income, home ownership, and length of residence to the unconditional model significantly improves the fit of the model (based on change in the deviance statistic; $\chi^2(3) = 10.41, p < .05$). Most of the demographic influence on inventoried home conditions is based on the positive effect of length of residence, although income and ethnicity also remain significant in the final model (below).

Residualized change in place attachment was the strongest block-level predictor of inventoried home conditions at Time 2 in the final trimmed model (Table 3). Improvement in block-level place attachment, relative to other blocks, was related to better home conditions. Other block-level predictors include both Time 1 perceptions of quality-of-life problems on the block and residualized change in perceived block problems. As expected, the more problems at Time 1, and the worse they became relative to other blocks at Time 2, the poorer the home conditions. Residualized change in block-level perceptions of crime also predicted inventoried conditions. But unexpectedly, relative increases in perceived block crime were associated with better conditions. However, this is a suppression effect, most likely due to change in perceived crime's correlation with change in both place attachment ($r = -.56$) and block problems ($r = .43$).

The only Level 1 (individual) significant predictor in the model, aside from income and ethnicity (see above), is an interaction effect between length of residence and psychological proximity to, or awareness of, the new subdivision. Long-term residents have a slightly greater correlation between psychological proximity and inventoried home conditions ($r = .13$) than do short-term residents. Alternatively, residents who are more aware of the new subdivision show a stronger correlation ($r = .28$ versus $.16$) between length of residence and observed conditions than residents less aware of the new subdivision.

This model explained 44% of between-block variance and 3% of individual-level, within-block variance.

Self-Reported Home Repairs & Improvement. Results show that blocks also vary significantly in incumbent upgrading ($t(58) = 31.9, p < .001$). Block level differences account for 10.0% of the total variance in interior and exterior home repairs and improvements ($\chi^2(58) = 163.6, p < .001$).

[INSERT TABLE 4 ABOUT HERE]

Adding income, home ownership, and length of residence to the unconditional model significantly improves the fit of the model ($\chi^2(3) = 21.51, p < .01$). All three demographic controls were significant at this stage. As expected, income and home ownership were positively related to self-reported repairs and improvements. Length of residence had a negative effect on the outcome, although with a nonsignificant bivariate correlation, this appears to be a suppression effect due to the positive correlation between length of residence and income and especially home ownership. Still, length of residence remains negative and significant in the final model (below), suggesting that, controlling for all the other predictors, newer residents make more home repairs and improvements than longer-term residents. The possibility that length of residence has a curvilinear effect was tested. But, surprisingly, it is the moderate-term residents (10 to 25 years; mean repairs = .46) doing the most upgrading, rather than new residents (less than 10 years; mean repairs = .38) wanting to make changes or long-term residents (25 years or more; mean repairs = .34) in older homes wanting to make improvements. This may be spurious, due to higher-income, mid-life residents in moderately old homes.

At Level 2 (block), residualized change in place attachment and in collective efficacy from Time 1 to Time 2 were related to self-reported home repairs and improvements at Time 2 in the final trimmed model (Table 4). The surprising finding is that unexpected increases in place attachment were related to fewer repairs and improvements. This appears to be a suppression effect due largely to place attachment's strong correlation with efficacy at the block level.

At Level 1 (individual), in addition to shorter-term residence and home ownership, significant predictors of self-reported upgrading included psychological proximity to the new subdivision, efficacy, and more perceived crime. There is also a significant random effect indicating that the slope of the relationship between individual-level place attachment and upgrading varies significantly by block. To determine whether that variation might be due, at least in part, to block aerial distance from the new subdivision, we tested that Level 2 variable in a cross-level interaction with Level 1 (block-centered) place attachment and found it to be significant. Greater physical distance from the new housing is associated with stronger relationships between resident place attachments and, again surprisingly, fewer self-reported repairs and improvements ($r = -.12$).

This analysis demonstrates the power of HLM to identify simultaneous effects of the same or similar independent variables at multiple levels of analysis. For example, place attachment has both a block-level effect on upgrading and, controlling for block geographic proximity to the new subdivision, an individual within-block effect. And proximity to the subdivision has both the cross-level interaction effect between place attachment and block geographic proximity and the individual-level effect of psychological proximity. This model explained 27.7% of between block variance and 9.7% of within block variance.

Building Permits. Results show that blocks do not vary significantly in building permits at sampled addresses. Block-level differences account for only 0.84% of the total variance in building permits at sampled addresses ($\chi^2(58) = 68.2, ns$). Due to the lack of significant correlations even using full-block permit information (see Correlations, above), no further multi-level analyses were run on this outcome.

Estimated Valuations of Building Permits. Results show that blocks do not vary significantly in estimate valuations of building permits at sampled addresses. Block level

differences account for only 0.02% of the total variance in building permits at sampled addresses ($\chi^2(58) = 51.6, ns$). Due to the lack of significant correlations even using full-block permit information (see Correlations, above), no further analyses were run on this outcome.

Discussion

Summary of Results

Intervention effects on incumbent upgrading. As an evaluation of the neighborhood revitalization policy, the results are very mixed, with several positive findings, but also many negative or nonsignificant outcomes. From Time 1 to Time 2, observed conditions throughout the study area improved significantly over time while the proportion of homeowners and ethnic and religious minorities increased. The number and overall value of building permits at sampled addresses was smaller at Time 2, but did not change significantly for the neighborhood as a whole. The number of total permits issued on the block (i.e., based not just on sampled addresses) at Time 2 was related to greater distance from the new subdivision. Block-level permits were also related (almost significantly) to less psychological proximity to (or awareness of) the subdivision. Geographic proximity to the new subdivision was not linearly related to any individual-level measure of upgrading, nor was it related to most of the other predictors. But a comparison of radial distance rings found the area closest to the intervention to have the worst rated physical conditions at Time 1 and that all the rings up to 5/8 mile away improved slightly from Time 1 to Time 2.

An exploratory analysis of spatial patterns in the data, based on GIS maps, provided possible explanations for the negative and nonsignificant results. In particular, they make plainly evident that, for better or worse, the new subdivision is located a few blocks from several problem areas. It would be naïve to assume that new housing alone could completely turn around those problems and lead to significant revitalization spillover effects. Indeed, the fact that there are also some encouraging results may be more noteworthy.

Neither official city building permits, nor the recorded monetary value of those permits, showed any substantial between-block variation or striking pattern of correlation with individual or block-level predictors. It is unclear whether this lack of results is due to methodological problems with the data archive, the tendency for building improvements to be under-reported in permit statistics, or some combination of factors.

The importance of psychological proximity, place attachment, and community-focused attitudes and perceptions. The main focus of the study, however, was a series of two HLMs analyzing the relationships of various community psychological predictors with upgrading. One of the more encouraging results is the relationship between psychological proximity to the new subdivision (awareness of it, viewing it as part of one's neighborhood, knowing residents) and incumbent upgrading, controlling for demographics and other predictors and measured both in terms of objective exterior conditions and self-reported home repairs and improvements. In addition, place attachment, block problems, collective efficacy, home ownership, income, length of residence, and ethnicity all were predictive of either objective or self-reported upgrading. Both block- and individual-level effects were significant in each HLM, except for building permits and permit valuations, which were unpredictable and showed little block-level variation. Unlike previous studies, community confidence was not significantly related to upgrading.

Crime effects on incumbent upgrading. Perceived crime problems on the block were predictive of significantly more self-reported upgrading and repairs in the final HLM. (There was

a similar effect on block-level observed conditions, but that appears to be a suppression effect.) Perceived crime also has small but significant simple and partial correlations (controlling for income, home ownership, and length of residence) with higher building permit valuations, and a partial only with number of permits. The links between crime and upgrading are surprising, given that we did not include "target hardening" features, such as locks, lights, and window bars in our measure of self-reported improvements. It may simply be a spurious relationship reflecting crime problems in more dilapidated areas in need of repair.

In sum, although results of the intervention were mixed, the study confirms the importance of both psychological factors and the street block-level of analysis in neighborhood revitalization.

Strengths and Limitations of the Data

This study has several advantages over most past research on neighborhood revitalization. First, although researchers agree that revitalization policies ultimately must affect residents who do not benefit directly from development monies (Clay, 1979), few studies assess individual psychological mediators, such as residents' place attachment, collective efficacy, perceived upgrading by neighbors, and community confidence, which are considered prerequisites for neighborhood improvement (DeGiovanni, 1984; Goetze & Colton, 1980; Schwab & Ringel, 1991; Unger & Wandersman, 1985). Second, many studies deal with overly large units of analysis, such as census tracts, despite evidence that substantial variability in revitalization indicators can occur at much smaller geographic scales, such as the street block (Meier, 1983; Taylor, Shumaker, & Gottfredson, 1985). Third, some (e.g., Hendon, 1977) focus on outcomes such as property values that are imperfectly related to underlying changes in social and physical improvements in neighborhoods and that exclude more direct objective and subjective measures of incumbent upgrading. Fourth, many studies have severely limited methodological power, omitting important demographic control variables and/or comparison groups, dealing with small or non-representative samples (Clay, 1979), or lacking pre-post designs that can address changes after intervention (see Varady, 1986, for a review). Perhaps the most significant methodological strengths of the present study are the two waves of data and the use of HLM to tease out multi-level effects. Fifth, many studies do not track the interrelationship between social and physical aspects of neighborhood characteristics, despite widespread acknowledgement that both are important (Ginsberg, 1983; Varady, 1986). Sixth, although we have just begun to make use of GIS for both measurement and qualitative interpretations, since the data have been successfully geocoded, it is a powerful tool that is now available to us for more extensive use in future analyses.

The main limitations of the present data are the lack of a true panel sample and limits to generalizability of the sample. Our testing of panel attrition bias at Time 2 provides convincing evidence that such bias is not significant. But an individual-level panel sample would permit the kinds of simultaneous analyses of both time and level that are critical for understanding the complex processes of revitalization from a dynamic and ecological perspective.

The results reported here should be generalizable to working-class homeowners in similar inner-ring, declining residential neighborhoods in other cities. The intervention itself, although part of a growing policy trend toward public-private partnerships for clustered, new, moderate-income housing development, may not generalize very broadly. It was a special Congressional appropriation, not an ongoing or regularly-funded HUD program. Perhaps most unusual are the geographic (river, large vacant brownfields lot) and cultural (the clash of religious and ethnic groups in SLC, especially in the selected neighborhoods, the active but not broadly representative community councils) peculiarities of the setting. Other possibly confounding "history" or context

effects include the rapid population growth and urban sprawl in the metropolitan SLC area, which are largely responsible for the unusually steep increases in housing costs during the period of data collection. In addition, the highly publicized youth gang problems and local crime rate increases during Time 1 (1993-95), were perhaps worse than most other parts of the country at that time (when reported crime nationwide was falling). Ironically, the rapid demographic changes in the study area, which contributed to the panel attrition problem, have also begun to make the neighborhood more culturally similar to the growing number of poor urban neighborhoods of first settlement for recent immigrants and refugees.

We have concentrated on the possible impacts of the new subdivision. But there were other large and small interventions in the same area that make it difficult to conclusively attribute any quasi-experimental effects to any particular cause. Those interventions include an extremely large, mixed-use brownfield redevelopment between the study area and downtown SLC; subsidized in-fill housing financing; a rehabilitation loan program; a similar but slightly smaller and privately funded subdivision completed approximately three years after this intervention and just eight blocks down the river; a variety of community policing and crime prevention initiatives (including some small “Weed and Seed” funding for after-school and other programs), the near completion of a riverside greenway running through the neighborhood and subdivision, and finally, an organized, large-scale network of community service and service-learning initiatives in schools and recreational and other community organizations and public spaces in the study area (especially along the river).

Future Research

The finding of block-level effects, independent of individual-level effects (which is only possible using multi-level analysis) confirms the importance of the street block as a unit of analysis for research, as a source of influence on residents, and as a focus of organizing for city and community leaders. Future research should continue to focus on the block-level and explore additional psychological predictors and mediators of revitalization. But it should add a more thorough and practical analysis of the role of local politics and community organizations.

The present study, based on two waves of survey, observational, and existing data offer important preliminary insights into how well neighborhood revitalization is proceeding. But to adequately model individual- and block-level changes as a growth curve model over time (using HLM in a more complex design), a third wave of data is necessary (Bryk & Raudenbush, 1992). A third wave of data is also needed to evaluate the initial impact of the nearby brownfield project on the adjacent residential neighborhood. The present study thus provides an excellent opportunity for a longitudinal evaluation of the impact of all of these redevelopment strategies and a thorough analysis of both social and physical revitalization processes over time. However, special care must be taken to ensure that a viable panel sample is maintained.

Policy Implications

The policy tested here was the use of public funding to purchase and clear a large plot of vacant urban land, mitigate a flood zone and low-level soil contamination, and provide infrastructure, all in order to attract a private, large-scale in-fill housing development for moderate-income residents and encourage incumbent upgrading spillover effects in the surrounding older, declining neighborhood. Once the project was funded (by a HUD Demonstration Grant with matching dollars from the city and other sources), it took city officials many months to attract a developer. Even with all the local and federal assistance, including home financing subsidies to

qualified buyers, there were questions about whether moderate-income families would be attracted to a distressed neighborhood. The fact that, as with similar projects in New York City (Orlebeke, 1997) and elsewhere, the new subdivision was sold out prior to completion attests to the success of the policy, at least in marketing terms.

In terms of broader neighborhood revitalization aims, however, the lack of linear effects based on aerial distance from the intervention site, as well as the purely geographic analyses above (comparing close and more distant rings from the new subdivision and inspection of GIS maps) suggest that it was perhaps naïve of planners, and the legislators who appropriated the funding, to expect such a significant and widespread impact. Areas with serious economic, social, and physical problems were located within just a few blocks of the intervention. That may make sense from a policy perspective. But those problems are unlikely to be significantly affected by any one-dimensional intervention that fails to address the social, economic, political, and physical development of the whole community (Perkins, Crim, Silberman & Brown, in press; Roberts & Sykes, 2000). Housing interventions, like the present one, must be supported with additional resources to address social and other physical disorder problems. In fact, these complementary public investments may actually be more important than the new housing (Carmon & Baron, 1993). In particular, reductions in perceived quality-of-life and crime problems may improve residents' place attachment and thus lead to revitalization.

Still, significant HLM coefficients for psychological proximity to the new subdivision provide some qualified support for possible spillover effects. The effects of psychological proximity are not large however, either geographically or in terms of explained variance in individual home conditions, repairs, and improvements. And the effects are generally overshadowed by the effects of home ownership, length of residence, income, place attachment, and collective efficacy. (These other factors were also more important than community confidence, a predictor touted in other revitalization studies.)

Given these limited spillover effects of a multi-million-dollar intervention, it may make more sense for public resources and policy to be aimed more directly at financial supports to allow low and moderate-income residents to buy starter homes or to make home improvements. (To its credit, the city set up a subsidized home improvement loan program to assist incumbent upgrading. But it was not well publicized and few residents took advantage of it.)

The results of this study suggest there may also be revitalization benefits from actively encouraging greater place attachment and collective efficacy. Our assumption had been that place attachment would be related to upgrading mainly through its effect on community confidence. But confidence did not predict any outcome. The fact that place attachment was the most consistent predictor of upgrading suggests that it has a strong and direct effect on those outcomes. And so place attachment should be used by community leaders and by policy makers and planners (who have generally been focused more on the economic aspects of neighborhood decline) as a catalyst for both physical revitalization and greater social cohesion and social control (i.e., collective efficacy), which in turn may lead to greater grassroots political participation (Perkins et al., 1996).

This research speaks to why, despite their hype, large government urban programs often fail by not taking community and place-oriented psychological factors into account; and by focusing too much on programs affecting either households or large areas instead of levels in between, particularly street blocks. An examination of the interrelationships among both objective (e.g., upgrading) and subjective (e.g., home satisfaction/pride) indicators of community development and their psychological antecedents will help us understand and distinguish natural

revitalization processes and those due to large-scale interventions. Ultimately, it may be shown that indigenous neighborhood revitalization efforts are more effective at a lower social and economic cost than government- or privately-induced gentrification.

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Table 1. Individual-level Time-2 Psychological Correlates of Home Upgrading: Bivariate Correlations Below Diagonal; Partial Correlations (controlling for Income, Length of Residence, and Home Ownership) Above Diagonal

		DEP. VARs			CNTRLS			INDIV. LEVEL IVs											
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
DVs	1. ObservedCondition			-.14														-.11	
	2. Self-rep Improve								.10				.21	-.14	.15		.17	.16	
	3. Bldg Permits	-.10			.41							-.11		-.11				.12	
	4. Permit Sum Values			.40														.11	
CTLs	5. Income	.18	.17																
	6. Length Residence	.23																	
	7. Home Ownership	.18	.12			.17	.30												
INDIV LEV IVs	8. White	.15				.29						-.32		-.23			.17	.20	
	9. Aerial Proximity								-.09	.33		-.09							
	10. Psych Proximity	.10	.11				.10			.34		-.10	.10				-.11	.15	.20
	11. Place Attach	.08				-.09		.14	-.27	-.10	-.11		.30	.58		.33	-.33	-.41	
	12. Collective Efficacy	.13	.22			.17	.13	.14		-.13	.12	.29		.13		.19			
	13. Nborhood Quality		-.08			.09			-.24			.58	.15			.29	-.27	-.33	
	14. Nbr. Improvemnts		.15			.09						.08	.16	.10		.13			
	15. Comm Confidence					-.15		-.10		-.11	.34	.17	.31	.13			-.23	-.24	
	16. Block Problems		.14					.20		.18	-.37		-.29	.11	-.23				.50
	17. Blk Crime Percep		.17		.10		-.09	-.08	.17		.20	-.43		-.33		-.23	.52		

Note: Partial coefficients (above diagonal) df = 461; bivariate coefficients (below diagonal) df = 513 to 901. Coefficients shown only if p < .05.

Table 2. Block-level Time 1 and Time 1-2 Residualized Change Correlates of Home Upgrading: Bivariate Correlations Below

Diagonal; Partial Correlations (Controlling for Block-level Income, Length of Residence, and Home Ownership) Above Diagonal

		DEP. VARS.				CNTRL S				BLOCK LEVL IVs													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
BLCK-LEVL. DEPENDENT VARIABLES	1. Observed Conditions																						
	2. Self-rep Improvements										.26												
	3. Bldg Permits																						
	4. Permit Sum Values													.24	.40								
BLCK-LEVL. CONTROL VARIABLES	5. Income	.24	.25																				
	6. Length of Residence	.33		.24																			
	7. Home Ownership	.25				.34																	
BLOCK LEVEL TIME 1 INDEP. VARIABLES	8. White					.36																	
	9. T1 Place Attachment						.23																
	10. T1 Collective Efficacy		.25					.26	.42														
	11. T1 N'hood Quality								.51														
	12. T1 Nbr Improvements								.31														
	13. T1 Block Problems	-.36				-.31	-.30	-.30		-.55	-.24	-.43											
BLOCK LEVEL T1-T2 RESIDUAL CHANGE	14. T1 Blk Crime Percept	-.26			.40					-.34	-.38	.37	.52										
	15. T1-2 Place Attachment	.46	-.22			.25	.43						-.22				.57	.65			-.47	-.51	
	16. T1-2 Collective Efficacy	.25										-.26				.52		.31				-.24	
	17. T1-2 Nborhood Quality	.29					.41	-.32						-.27		.72	.30						-.27
	18. T1-2 Nbr Improvemts		.29			.31	.23		.25														
	19. T1-2 Block Problems	-.30						-.25								-.50		-.28					.35
	20. T1-2 Block Crime			.22				-.26								-.56	-.23	-.35			.38		

Note: Partial coefficients (above diagonal) df = 54; bivariate coefficients (below diagonal) df = 59. Coefficients shown only if p < .10.

Table 3. Hierarchical Linear Model Predicting Observed Home Conditions

Final estimation of fixed effects (with robust standard errors):

Fixed Effect	Standard Coefficient	Error	Approx. T-ratio	d.f.	P-value
<u>Level 2 (Block):</u>					
INTRCPT1, B0 INTRCPT2, G00	0.563	0.008	67.966	52	0.000
T1 Place Attachment, G01	-0.067	0.084	-0.797	52	0.429
T1 Block Problems, G02	-0.216	0.099	-2.193	52	0.033
T1 Block Crime Problems, G03	-0.027	0.062	-0.437	52	0.663
Increased Place Attachment, G04	0.034	0.011	3.180	52	0.003
Increased Block Problems, G05	-0.015	0.007	-2.225	52	0.030
Increased Block Crime, G06	0.020	0.010	2.105	52	0.040
<u>Level 1 (Individual):</u>					
Income, G10	0.002	0.001	2.481	900	0.013
Home Ownership, G20	0.015	0.010	1.461	900	0.144
Ethnicity (White), G30	0.017	0.008	2.090	900	0.036
Psych. Proximity to Subdiv., G40	0.017	0.014	1.194	900	0.233
Place Attachment, G50	-0.000	0.021	-0.001	900	0.999
Block Problems, G60	-0.022	0.019	-1.170	900	0.242
Block Crime Problems, G70	0.003	0.014	0.199	900	0.842
<u>Individual-level Interaction:</u>					
Length of Residence					
By Psych. Prox. Subdiv., G80	0.001	0.000	4.035	900	0.000

Final estimation of variance components:

Random Effect	Standard Deviation	Variance Component	df	χ^2	P-value
Level 2 INTRCPT1, U0	0.052	0.003	52	186.323	0.000
Level-1, R	0.139	0.019			

Level 2 Intraclass $r = .198$ (19.8% of total variance due to differences between blocks)

Model explains 44.0% of Level 2 (block) variance, 3.0% of Level 1 (individual) variance.

Statistics for current covariance components model:

Deviance = -947.753

Number of estimated parameters = 17

Step 1 UNCONDITIONAL: Deviance = -896.517; Number of estimated parameters = 3.

χ^2 (df=17-3=14) = 51.23, $p < .01$, significant change in fit over Step 1, Unconditional model.

Table 4. Hierarchical Linear Model Predicting Self-reported Repairs and Improvements

Final estimation of fixed effects (with robust standard errors):

Fixed Effect	Standard Coefficient	Error	Approx. T-ratio	d.f.	P-value
<u>Level 2 (Block):</u>					
INTRCPT1, B0 INTRCPT2, G00	0.385	0.011	36.088	54	0.000
T1 Place Attachment, G01	0.110	0.112	0.979	54	0.332
T1 Collective Efficacy, G02	0.197	0.183	1.077	54	0.287
Increased Place Attachment, G03	-0.040	0.014	-2.925	54	0.005
Increased Collective Efficacy, G04	0.033	0.013	2.498	54	0.016
<u>Level 1 (Individual):</u>					
Income, G10	0.003	0.002	1.592	902	0.111
Length of Residence, G20	-0.001	0.000	-2.585	902	0.010
Home Ownership, G30	0.053	0.020	2.708	902	0.007
Psych. Proximity to Subdiv., G40	0.058	0.029	2.006	902	0.044
<u>Cross-level Interaction Effect:</u>					
Place Attachment, G50	-0.016	0.044	-0.356	57	0.723
By Block Aerial Distance, G51	-0.000	0.000	-1.988	57	0.051
Collective Efficacy, G60	0.210	0.058	3.591	902	0.001
Block Crime Problems, G70	0.094	0.024	3.946	902	0.000

Final estimation of variance components:

Random Effect	Standard Deviation	Variance Component	df	χ^2	P-value
Level 2 INTRCPT1, U0	0.062	0.004	54	140.271	0.000
Place Attachment, U5	0.126	0.016	57	77.001	0.040
Level-1, R	0.209	0.044			

Level 2 Intraclass $r = .100$ (10% of total variance due to differences between blocks)

Model explains 27.7% of Level 2 (block) variance, 9.7% of Level 1 (individual) variance.

Statistics for current covariance components model

Deviance = -212.154

Number of estimated parameters = 17

Step 1 UNCONDITIONAL: Deviance = -119.747; Number of estimated parameters = 3

χ^2 (df=17-3=14) = 92.40, $p < .01$, significant change in fit over Step 1, Unconditional model.