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CROSS-SECTIONAL AND LONGITUDINAL MEASUREMENTS OF NEIGHBORHOOD EXPERIENCE AND THEIR EFFECTS ON CHILDREN*

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Abstract

Despite the abundance of research on neighborhoods' effects on children, most studies of neighborhood effects are cross-sectional, rendering them unable to depict the dynamic nature of social life, and obscuring important aspects of neighborhood processes and outcomes. This study uses residential histories from the Los Angeles Family and Neighborhood Survey to explore two questions: 1) How much do residential mobility and neighborhood change contribute to the overall variation in children's neighborhood experience? 2) Does measuring neighborhood factors at more than one point in time matter for estimates of neighborhood effects? Results show that having information on residential mobility and neighborhood change over a two-year period does not greatly alter estimates of children's neighborhood experiences. For blacks, however, residential mobility appears to cause economic heterogeneity in neighborhood poverty over time. Regarding neighborhood effects, considering residential mobility and neighborhood change does not change estimates significantly; for both unchanging and variable measurements of neighborhood experience, living in a high-poverty neighborhood has small but significant adverse effects on children's behavioral and academic well being. Despite the similarities between cross-sectional and longitudinal measurements, the results highlight variation between racial groups in their neighborhood experience, as well as the influence of both past and current neighborhood experience on children's well being.

Introduction

This paper explores how the ways in which we define people's neighborhood experiences matters for the trends that we observe. Recent sociological research has documented the relationship between neighborhoods and life chances for children. However, studies of the effects of neighborhoods on children are often undertaken by looking at people's neighborhoods at one point in time, making them less able to account for the dynamic nature of social life among individuals and environments. The use of a cross-sectional data on neighborhood conditions therefore potentially obscures important aspects of neighborhood processes and outcomes. This paper will use data from the Los Angeles Family and Neighborhood Survey, employing two approaches to understanding how neighborhood disadvantage affects the development of children. First, we provide a "snapshot" of children's neighborhoods at one point in time. Secondly, we account for the possibility that children are exposed to neighborhoods of differing levels of disadvantage during their development and are thus affected by a cumulative neighborhood experience rather than one isolated experience. We consider what difference, if any, it makes for children's neighborhood experience to look at neighborhood factors at more than one point in time, and we compare several different measurements of neighborhood experience in their effects on child well-being. In the end, this paper has two goals: to better understand the role of residential mobility and neighborhood change in determining children's exposure to particular neighborhood types, as well as the extent to which the measurement of the "neighborhood" matters for the outcomes that are observed among children.

Background

The Importance of The Local Environment

Social science research has moved away from the local setting of the neighborhood in recent years, toward examination on a more global scale. In the process, as Sampson (2002) describes, many researchers have neglected "…the persistence of local variation, concentration, and place stratification" (pg. 4). Researchers over the past few decades have thoroughly documented the existence of residential segregation of the United States population by racial and income groups; these phenomena have persisted in the face of national political and economic change (Massey and Denton, 1993). Attention to the consequences of the spatial distribution of the population is therefore vital, given the demonstrated significance of neighborhoods for the life chances and outcomes of the groups within them.

Attention to the local environment is perhaps most salient for the groups that are the most socially and economically disadvantaged. In his well-known analysis of urban poverty in the United States, *The Truly Disadvantaged,* William Julius Wilson (1987) discusses the significance of "vertical integration" for the life chances of urban blacks, claiming that racially segregated neighborhoods are not as detrimental for their residents if there are a mixture of economic positions in a neighborhood and the clear presence of economic role models who were integrated into mainstream economic and social positions. The extent to which vertical integration has declined for blacks and other groups remains unclear (Sims, 1999). Nonetheless, the fundamental point of Wilson's argument is clear and hard to deny: the social, economic and spatial isolation of poor people in the United States reduces access and opportunity, making adverse interactions,

behaviors and outcomes harder to avoid. The increasingly concentrated nature of poverty in U.S. urban areas has made it hard for residents in these neighborhoods to access the resources that they might otherwise have access to in an ethnically and economically heterogeneous environment.

In fact, living in neighborhoods with a high prevalence of poverty is known to be associated with several factors that are detrimental to residents' quality of life. Poor neighborhoods are plagued by under-funded social services, higher crime rates, close proximity to sources of harmful pollutants and low housing quality, not to mention the stressful feelings of hopelessness and powerlessness that go along with the daily experience of social and economic disadvantage (Boer et al, 1997; Krivo and Peterson, 1996; Ross et al, 2000). In thinking about the ways in which neighborhoods work to affect their residents' well-being, there are several potential social mechanisms. Differential presence and quality of neighborhood services/resources, systems of social organization and norms that enable collective action and create social and economic role models, and differences in access to labor markets and other extra-local resources, all interact to create both positive and negative outcomes for individuals.

Children and adolescents are especially influenced by their immediate context, as they are likely to spend the majority of their time in their local surroundings. Living in poverty, for example, is believed to negatively affect several aspects of children's well being, including cognitive development, health status, educational opportunity, employment and propensity for risk-taking behaviors (Brooks-Gunn et al, 1997). Aneshensel and Sucoff (1996), for example, find that living in a low socioeconomic status neighborhood in Los Angeles County is associated with higher perceptions of

"ambient hazards" (crime, violence, drug use) among adolescents, and subsequently higher likelihood of experiencing indicators of depression, anxiety and misconduct. In examining another neighborhood factor, racial composition, Massey et al (1992) find that racial segregation is an important determinant of individual behavior. Research also points to the importance of a child's age of exposure to a particular neighborhood, since the age at which a child is exposed to a neighborhood is likely to determine the type and strength of its effects (Brooks-Gunn et al, 1993).

Neighborhoods as Dynamic Environments: The Role of Residential Mobility and Neighborhood Change

Despite the abundance of research on neighborhoods and well being, most research on the importance of the neighborhood for life chances has been conducted with the use of data that provides only a cross-sectional "snapshot" of neighborhoods and individuals. Cross-sectional depictions of individuals' neighborhood experiences, while certainly meaningful, may not provide an accurate representation of the experiences that people and neighborhoods endure over time. It is likely that both current and past experience in neighborhoods matter for well being, and that neighborhood characteristics in fact work somehow over time to influence children's behaviors and academic performance.

There are two ways in which children's neighborhoods can vary over their lifetime. First, children change residences with their families over time. This is especially true for low-income children, who are subject to the pressures that their families face to find affordable housing. It is possible for children to move upward or

downward socio-economically over time, thereby producing a different neighborhood experience than they would have if they lived in the same neighborhood forever. Secondly, just as it is possible for children to experience different neighborhoods, it is possible for neighborhoods themselves to change over time, whether because of a decline or growth in local jobs, processes of gentrification, and a host of other factors.

There have been some studies examining individuals' movement within and across neighborhoods, and well as neighborhood change, and how these processes determine individuals' overall exposure to neighborhood disadvantage. Researchers who have examined individuals' movement within and across neighborhoods over time suggest that a child's duration of exposure to a certain type of neighborhood likely mediates the influence of particular neighborhood characteristics on well being. Timberlake (2003), with data from the Panel Study of Income Dynamics (PSID), uses multi-state life tables to calculate the expected amount of time that black, white and Latino children will spend in poverty. He finds that black children are expected to spend over 60% of their first 18 years in neighborhoods with poverty rates greater than twenty percent, compared to corresponding numbers of 14% and 36% for white and Latino children. In an examination of longitudinal patterns of residence in various neighborhood economic types, Quillian (2003) finds that movement in and out of poor neighborhoods is actually quite frequent. But what is perhaps most striking about his findings is the racial inequality that exists in neighborhood exposure. Using survey data from the Panel Study of Income Dynamics (PSID) during the period between 1979-1990, Quillian shows that blacks are as likely as non-Latino whites to move. However, blacks are much less likely

than non-Latino whites to move out of poverty into low-poverty neighborhoods, and they are much more likely to repeat spells of poverty.

In thinking about what bearing a consideration of neighborhood experience over time would have on neighborhood effects, there have been no observational studies examining this question. But preliminary analyses of the Moving to Opportunity (MTO) study, an experimental study of the effects of residential mobility on well being, suggests that residential mobility out of poverty significantly improves children's well-being (Brennan, 2002). This study is somewhat unique, however, in that in involves government-sponsored mobility, and does not observe the environments that children experience naturally.

Previous research on residential mobility, neighborhood change and neighborhood effects points to the possibility for group differences in exposure to neighborhood disadvantage, as well as the possibility that the strength of neighborhood influence depends on the ways in which we measure individuals' neighborhood experience. Measures of neighborhood experience that incorporate both current and previous experience may be more revealing than measures at one point in time. These questions will be the focus of this paper.

The Present Study: Questions and Hypotheses

This paper follows in the vein of previous research in that it considers the role of residential mobility and neighborhood change in shaping a child's neighborhood experience. While we do not explicitly examine duration in neighborhood types, as previous studies have done, we examine the ways in which children's movement between

neighborhoods and changes in the characteristics of neighborhoods contribute to the total variation in neighborhood characteristics over time. For neighborhood characteristics, we consider neighborhood poverty, which is a widely studied neighborhood factor and indicator of neighborhood socioeconomic status.

In addition to the similarities that this research shares with past work, we extend previous work by investigating what bearing, if any, a temporal consideration of neighborhood experience has on assessments of children's behaviors and math achievement, which are known to be important proxies for psychological and academic well being. As a whole we seek to clarify two questions: 1) How much do residential mobility and neighborhood change contribute to the overall variation in neighborhood characteristics such as neighborhood poverty rate and neighborhood racial composition? 2) Does measuring neighborhood factors at more than one point in time matter for estimates of neighborhood effects? By combining two often separate areas of inquiry, we hope to inform the debate about neighborhood effects by beginning to specify how a child's lifelong context works to influence well-being.

In considering the extent to which having information on residential mobility and neighborhood change alters cross-sectional estimates of the neighborhood experience, there are several possibilities. Following the results of Quillian (2003), we might expect that children of all racial/ethnic groups are equally likely to move, but that children of more socioeconomically advantaged groups are more likely to experience economic heterogeneity in their moves than others.

If individuals move primarily between neighborhoods of the same type, then adding information about residential mobility may not change cross-sectional snapshots

of neighborhood experience, and subsequent neighborhood effects[1], very much. If people experience significant socioeconomic and racial/ethnic heterogeneity in their moves, however, then information on residential mobility will contribute more to the total variation in neighborhood characteristics over time, and may alter neighborhood effects. Regarding neighborhood poverty, since we know that children consistently exposed to disadvantage are more negatively affected than those who experience disadvantage for only a short time, high rates of movement in and out of poverty may attenuate the influence of poverty. Finally, if children do not move but their neighborhoods change around them, then we would expect the incorporation of information on neighborhood change to explain some of the variation in neighborhood characteristics over time, and to either positively or adversely affect estimates of neighborhood effects, depending on whether the neighborhood became more or less advantaged.

It is important to point out that behavioral well being at one point in time is most likely a product of experiences over time, so we might expect to see the largest effect of neighborhood poverty in more recent measurements of neighborhood. Academic achievement at one point in time may be more strongly influenced by more distant neighborhood experiences that provide opportunities for basic development of skills and learning strategies[2].

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[1] In considering what bearing conceptualizations of the timing of neighborhood experience have on neighborhood effects, we consider the effect of neighborhood characteristics net of several individual and family factors. We describe these variables in more detail later in the paper. Since the focus is on the importance of neighborhood variability, however, and not on the influence of individual characteristics, we do not focus on the influence that the control variables have on the outcomes.

[2] There is also some evidence that neighborhood conditions vary in importance depending on the age of a child. Preliminary analyses of the interaction between age and neighborhood poverty do not reveal any developmental differences; future analyses will examine this question further.

Data

Primary Data

We compare static and dynamic approaches to understanding the effects of neighborhoods on children by examining data from the Los Angeles Family and Neighborhood Survey (LA FANS). LA FANS is a panel study of families in Los Angeles County that was launched in 2000. The first wave of data was collected from a representative sample of about 3200 households in 65 neighborhoods. The design of L.A. FANS is a stratified probability sample, with poor neighborhoods and households with children over sampled (Sastry et al, 2003). Data are collected from three different groups, with the goal of obtaining information about public and private social service use, household economic status, wealth, education, immigration history, neighborhoods, social networks and well being.

This paper uses data from the parent questionnaire, where primary caregivers provide information about their children. It then links this information to the event history calendar, a detailed recording of information on important events during the last two years in respondents' lives. One such event is residential history, which is the focus of my interest in this paper. The residential histories provide geocoded data for all of children's residences during the two-year period prior to the interview; these data permit examination of the total number of moves, the exact dates of residential moves and the duration in each residence ("spells")[3].

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[3] Two years is not a long duration during which to observe residential mobility and neighborhood change. However, this paper uses the data that are available to provide a lower-bound estimate of the importance of these processes. We recognize that having information over a longer period might significantly change the patterns observed, but we view this project as a first attempt at re-conceptualizing neighborhood experience.

Community Data

The L.A. FANS residential histories are linked to data from summary file 3 of the 2000 Census that provides information on specific characteristics and services of neighborhoods in Los Angeles County. In addition, the L.A. FANS data are linked to 1997 data on Los Angeles County that provide similar information[4]. The 1997 data were constructed from both 1990 Census data and administrative data. Both the 1997 and 2000 data allow us to connect individuals with their neighborhood poverty status, racial/ethnic composition and other socioeconomic and demographic information. The 1997 and 2000 data were used to interpolate values for neighborhood characteristics in 1998 and 1999. Together, then, the L.A. FANS and Census data permit analysis of children's movement between specific neighborhoods over time, as well as of the changing nature of the neighborhoods themselves over the two-year period.

The Setting

The setting for this study is Los Angeles County. Most studies of neighborhood composition and the effects of racial, economic and spatial aspects of neighborhoods have occurred in traditionally "urban" settings, such as Chicago, New York, Philadelphia and Boston. While these settings remain necessary points for research, less attention has been paid to West coast cities, which are rapidly growing and developing. The complex interactions among racial/ethnic, spatial and institutional factors in Los Angeles make it an important setting in which to examine the structure and significance of neighborhood factors. Like cities in the Northeast, the Latino population in Los Angeles is growing, while its native white and black populations are decreasing in size (Sabagh and Bozorgmehr, 1996). Similarly, as in other cities, L.A. is a "city of extremes," with great

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[4] The 1997 data were prepared by John Hedderson at the Los Angeles County Urban Research Division.

poverty and wealth existing in relatively close proximity to one another (Ong and

Blumenberg, 1996). In contrast in other cities, however, Los Angeles also has a

substantial Asian population, making it a somewhat unique multicultural context. In

addition, the black population as a whole is not the most economically disadvantaged

group in Los Angeles, with Latinos falling behind blacks in economic status (Treiman

and Lee, 1996). This is not to say that blacks' social and economic disadvantages are not

extreme.

The traditional definition of an "urban" environment does not apply to Los

Angeles. To be sure, the city's disadvantaged communities suffer from the same

problems as the traditional "urban poor:" residential and economic segregation are still

rampant, as are resource deprivation and inequality in group outcomes. Given the

somewhat arbitrary boundaries of the city proper, however, many neighborhoods that are

technically considered to be suburban (a word that represents advantage in most of the

country) actually experience the same plight as inner-city communities. In this context, it

therefore makes sense to examine neighborhoods at the larger, county level rather than in

the city proper.[5]

The Sample

The population of interest in this study is children, given the demonstrated

centrality of neighborhoods in their everyday lives. The sample is therefore limited to

children (defined as individuals ages 17 and younger) who spend at least half of their

time in the same home as their primary caregiver. In this analysis, information on

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[5] Given the suburban and dispersed layout of the Los Angeles region, it may be useful to examine the
questions of interest in this study at the larger, five-county level (including Los Angeles, Ventura, San
Bernardino, Orange and Riverside counties). The L.A. FANS study, however, is restricted to Los Angeles
County.

children's mobility, demographic characteristics and behaviors is obtained from their primary caregivers, who are most often the mothers of the children. Cognitive assessment information is obtained directly from children. Two groups of children are included in this study: 1) randomly selected children (RSCs), who are sampled at random from the list of child full-time residents, and 2) one sibling in each household with a randomly selected child. Siblings are also randomly selected from the list of the RSCs' siblings who live in same home and have the same primary caregiver.[6]

Defining a Neighborhood

For the purposes of this analysis, we define neighborhoods by their administrative boundaries, as being encompassed within census tracts[7]. Census tracts typically made up of about 4,000 people and include the area within a small number of city blocks (White, 1987). While they are designed to approximate areas that have real meaning for residents in their opportunities for social interaction, developing meaningful relationships, and exposure to both positive and negative influences, census tracts are by no means a perfect representation of people's neighborhoods (Pebley and Sastry, 2003). Furthermore, in quantitative examinations of neighborhoods the census tract is useful for maximizing both data availability and the extent to which comparisons can be made across neighborhoods.

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[6] About 200 children who do not live at least half-time with their primary caregiver are excluded.
[7] L.A. FANS also permits analysis at the block level. The goal of this project, however, is to enable comparisons with previous neighborhood effects analyses, which almost exclusively use the census tract as their definition of neighborhood.

Methods

Independent Variables

Neighborhood poverty rate is examined here to operationalize the socioeconomic composition of neighborhoods, as well as to enable comparability with previous studies.[8] It is calculated as the proportion of people in each census tract living below U.S. poverty thresholds; it thus ranges from 0 to 1. As described above, the 1997 and 2000 Census Bureau measures for these neighborhood characteristics were used to interpolate values for 1998 and 1999, in order to provide an estimate of neighborhood change over the two-year period.

In addition to the neighborhood factors, we include both individual-level and family-level variables in the analysis, in order to account for the possibility that any association between neighborhood characteristics and the dependent variables could be reflecting the impact of individual and family variables correlated with neighborhood poverty[9]. Individual and family-level variables include the race/ethnicity of the child's primary caregiver (PCG), total family income, educational attainment of the PCG, PCG marital status, PCG nativity status, age of child and family poverty status. In choosing their race/ethnicity, primary caregivers were given fifteen options to choose from. In the event that respondents chose more than one race or ethnicity, they were asked to choose the category that, in their opinion, best defined their identity. Given the small percentage of people identifying as groups other than white, black, Asian or Latino, we have

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[8] Analyses with neighborhood racial/ethnic composition are ongoing, but are not included in this paper.
[9] While I include the variables as controls, we do not test any interactions between variables, at least in this version of the paper. The focus of the study is centrally about how the ways in which we measure neighborhood experience matter. Future analyses, however, could test for variations in neighborhood effects by race, age or other variables.

combined "Others" into the white category[10]. Total family income was obtained by combining family earnings, income from assets and transfer income. Information on the educational attainment of the primary caregiver is gathered from self-reports of the number of years of schooling completed. Family poverty status is assessed by matching a child's total family income with corresponding poverty thresholds based on income and family size. Children living below that threshold are given scored 1 on the family poverty variable and children living at or above the threshold are scored 0.

Dependent Variables

Three outcomes are examined in two broad areas: behavioral problems and academic achievement. We examine three specific outcomes: children's symptoms of internalizing behavior problems, symptoms of externalizing behavior problems, and math-related achievement. These outcomes were chosen for specific reasons. First, the goal is to provide results that can be compared with previous studies, which have examined behavioral and academic indicators of well being (Aneshensel, 1996; Brooks-Gunn et al, 1993; Pebley and Sastry, 2003; Stiffman et al, 1999). Secondly, the indicators of well being that we include are important proxies for mental health and educational quality. Symptoms of internalizing and externalizing behaviors reflect a child's tendency to be withdrawn or act out, and may signify risk for developing depression, anxiety, and problems with aggression and anger. Math-related achievement is an indicator of academic quality.

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[10] Analyses with "Others" omitted from the analysis produce identical results. LA FANS racial/ethnic categories are coded as follows:
White/Others: Whites, Native American/American Indian, Inuit/Eskimo/Aleut, Other.
Blacks: Black/African American
Latinos: Latino/Hispanic/Latin American
Asian/PI: Chinese, Filipino, Japanese, Korean, Vietnamese, Asian Indian/South Asian, Other Asian, Hawaiian, Pacific Islander

The two behavioral indicators come from the Behavior Problems Index in the LA FANS. Primary caregivers were asked to provide information on their children's (ages 3-17[11]) behavior. From specific behavior questions to which a respondent could answer "often true," "sometimes true" and "never true," several indices were created through factor analysis, in hopes of capturing the number of symptoms of anxiety, depression and other mental health problems that a child experiences (Peterson et al, 2003). The internalizing and externalizing behavior indices are used in this analysis.[12] A higher number of symptoms indicates more behavior problems. Academic achievement is measured from an assessment of children's ability to solve applied problems. The applied problems assessment is a component of the Woodcock-Johnson scholastic achievement test. Percentile rankings are used in this analysis, which measure the percentage of children who had the same or lower scores. A positive score indicates greater academic achievement in a particular area.

Analysis

The analysis consists of two parts. The first step is to perform a decomposition of variance to understand the relative contribution of neighborhood change, residential mobility and between-person variation to the total sample variation in poverty over the

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[11] It is reasonable to expect that symptoms of behavior problems mean something different for three year olds as compared to , for example, 17 year olds. While it is well worth further examining age differences in the meaning of behavior problems, such examination is beyond the scope of this project.

[12] The *internalizing behavior index* includes the following behaviors, which are combined to create a continuous count of symptoms:
Child has felt unloved; has been fearful/anxious; has been easily confused; has felt worthless; is unliked by other children; has been obsessed with thoughts; has been sad or depressed; has been withdrawn; has been clinging to adults; has cried too much; has felt others were out to get him/her.
The *externalizing behavior index* measures a child's tendency to:
Be disobedient at school; not get along with teachers; have sudden mood changes; be high strung or tense; cheat or tell lies; argue too much; have difficulty concentrating; bully others; be disobedient; not feel remorse for misbehaving; not get along with other children; act without thinking; be restless; be stubborn or irritable; lose his/her temper easily; break or destroy things intentionally; demand a lot of attention.

two years. The decomposition is done on a sample of person-spell-months, where each person has twenty-four observations. Each month within the two-year period counts as an observation, and is attached to information about the poverty rate in the census tract that the child lived in during that month. There are three components to the decomposition of variance, which can be represented by:

$$\sum 1/N \, (Y_{PM} - \overline{Y})^2 = \sum 1/N \, (Y_{PM} - \overline{Y}_S)^2 + \sum 1/N \, (\overline{Y}_S - \overline{Y}_P)^2 + \sum 1/N \, (\overline{Y}_P - \overline{Y})^2$$

where $\overline{Y}$ = the mean of neighborhood poverty or income for the entire sample;

Y_{PM} = each month's value of neighborhood poverty or neighborhood income;

$\overline{Y}_P$ = the mean of each person's twenty-four observations;

$\overline{Y}_S$ = the mean of each spell (duration in a particular residence) within a person;

N = total number of people.

Each of these terms represents a sum of squares; that is, the terms are calculated for each child and then summed over person-spell-months to get a value for the total sample. The first term, $(Y_{PM} - \overline{Y}_S)$, is the deviation of the individual from his/her spell mean; this component measures the contribution of neighborhood change to the total variation in neighborhood poverty over the two years. The second component, $(\overline{Y}_S - \overline{Y}_P)$, is the deviation of the spell mean from the person mean; this component represents the contribution of residential mobility. Finally, unlike the previous two measures, which are "within-person" measures, $(\overline{Y}_P - \overline{Y})$ is the deviation of the person mean from the overall sample mean, and represents the contribution of between-person variation in

neighborhood poverty to the total sample variation in these characteristics. This last component is a cross-sectional measure.

These three measures add up to the total sum of squares $[\sum (Y_{PM} - \bar{Y})^2]$[13]. The amount of variation in neighborhood poverty that is explained by each component is therefore its proportion of the total sum of squares.[14]

The second part of the analysis uses weighted least squares regression to consider differences between several measurements of neighborhood experience on the behavioral and academic achievement outcomes. Whereas the analysis of variance is conducted on an expanded sample, this part of the analysis is conducted at the individual-level, with one observation per person. Regression analyses are conducted using probability weights to correct for over-sampling of poor strata, for variation in the number of households interviewed across tracts, and for the tract-specific rates of over-sampling of households with children and of household non-response (Peterson et al, 2003). The "robust, cluster" option in STATA, with clustering on the census tract, is used to account for the clustering of individuals within neighborhoods.[15]

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[13] See Appendix A for a proof of the equality.

[14] ANOVA is only done for people with non-missing values on neighborhood characteristics. People who at some point lived outside of Los Angeles County are therefore excluded, because there is no census tract information available for those addresses. We do this because including months with missing neighborhood information makes the between-person sum of squares larger than the total sum of squares, since the between-person component has a value for all months and the other components only have values for non-missing months. The elimination of non-missing values biases this part of the analysis toward people who do not move, but appears to be the best way around the problem.

[15] Analyses were also carried out using STATA's survey estimation commands, which produce accurate standard errors for data that do not come from a simple random sample. Results were identical, within rounding.

Results

Descriptive Characteristics

Table 1 presents un-weighted and weighted descriptive characteristics of the study sample. The majority of the sample has a high school education or less, and falls in the middle or lowest income bracket. Fifty percent of children are between the ages of 6 and 12. About 25% of the sample moved at least once during the two-year period. Breaking down the sample by race and ethnicity, we see that Latinos make up a large part of sample (62%), followed by whites/others (22%), blacks (9%) and Asians/Pacific Islanders (8%). About 41% of respondents are from families in which the mother has less than a high school degree. Asians and whites/other children are from the most educated families, with about 80% of these children having primary caregivers with more than a high school education. Blacks and Latinos are from less-educated families, with 40% of blacks' mothers and 20% of Latinos' mothers having more than a high school education. Asians and whites/others are from the wealthiest families, while black and Latino children are more economically disadvantaged. The mean neighborhood poverty rate over the two-year period is twice as high for blacks and Latinos as for whites and Asians. All racial groups experience a similar number of symptoms of behavior problems, while blacks and Latino score about 20-25 percentage points lower on the math assessment than whites and Asians.

Moving on to residential mobility, we see that blacks are slightly more likely than other groups to have moved at least once over the two-year period, while Latinos are also more likely to move than whites/others and Asians. This pattern reflects the trend for socio-economically disadvantaged groups to move more than their advantaged peers. It

is surprising that blacks are more likely than Latinos to move, however, given blacks'

economic advantage in Los Angeles relative to Latinos. While the reasons for this

pattern are unclear, there are a number of possible explanations, including the increasing

number of blacks moving out of the central city in the face of Latino influx during the

late 1990s, or the potentially greater residential mobility that results from feeling

unwelcome in a hostile neighborhood (Halle et. al., 2003; Zubrinsky and Bobo, 1996).

*Decomposition of Variance: The Role of Residential Mobility and Neighborhood Change
in Shaping Children's Neighborhood Experience*

Table 2 decomposes the total variation in neighborhood poverty rate over the two-

year period into parts due to residential mobility, neighborhood change, and between-

person variation. Results are presented separately for the total sample, for people who

move at least once, for people who never move, and by race. Figures 1-3 show some of

the results graphically. As is clear from Figure 1 and from the first section of Table 2, the

vast majority of variation in neighborhood poverty rate is explained by cross-sectional

variation, or variation in neighborhood poverty between people over the two years.

Results do not differ substantially among races (Figure 2), although residential mobility

contributes slightly more to the variation in blacks' neighborhood poverty rate than to the

variation in other groups' rates.

Table 1: Descriptive Characteristics of Sample (N=2,180)*

	Unweighted					Weighted				
	White/Other	Black	Latino	Asian	Total	White/Other	Black	Latino	Asian	Total
Race/Ethnic Composition	22	9	62	8	100	26	11	53	10	100
Education of Caregiver										
Less than High School	6	12	62	5	41	8	16	58	5	35
High School	17	32	18	11	18	20	32	20	11	20
Some College	27	36	15	19	20	28	33	16	18	21
College or more	51	20	5	65	21	44	19	6	66	24
Total	100	100	101	100	100	100	100	101	100	100
Total Family Income										
$0-24,999	21	41	53	21	42	22	35	47	17	36
$25,74,999	33	49	41	39	40	36	54	46	42	44
$75,000 or more	46	10	6	41	18	42	11	7	41	20
Total	100	100	100	100	100	100	100	100	100	100
Mean Neighborhood Poverty	12	26	28	13	23	12	23	24	12	19
Child Age										
0-5	21	19	25	16	23	20	21	24	18	22
6-12	45	49	51	51	49	50	51	51	48	50
13-17	34	32	24	33	28	30	28	25	34	28
Total	100	100	100	100	100	100	100	100	100	100
Number of Moves										
0	81	70	72	83	75	83	67	72	83	75
1	14	20	21	15	19	11	25	22	16	19
2	4	6	6	2	5	4	5	5	1	5
3 or more	2	4	1	0	1	2	3	1	0	1
Total	100	100	100	100	100	100	100	100	100	100

* Unless row is specified to be the mean, numbers are percentages.

Table 1, continued: Descriptive Characteristics of Sample (N=2,180)*

	Unweighted					Weighted				
	White/Other	Black	Latino	Asian	Total	White/Other	Black	Latino	Asian	Total
Number of Moves among Movers										
1	72	68	75	86	74	65	77	78	95	77
2	18	20	21	14	20	25	14	18	5	18
3 or more	10	12	4	0	6	10	9	3	0	5
Total	100	100	100	100	100	100	100	100	100	100
Mean # of Internalizing Symptoms (Range 0-22)	2	3	4	2	3	2	2	3	2	3
Mean # of Externalizing Symptoms (Range 0-33)	6	7	7	5	6	6	6	7	5	6
Mean Math Percentile Ranking (Range 0-100)	69	47	46	68	53	68	50	45	68	54

* Unless row is specified to be the mean, numbers are percentages.

Figure 1: Contribution of Residential Mobility, Neighborhood Change and Between-Person Variation to Total Variation in Neighborhood Poverty Rate
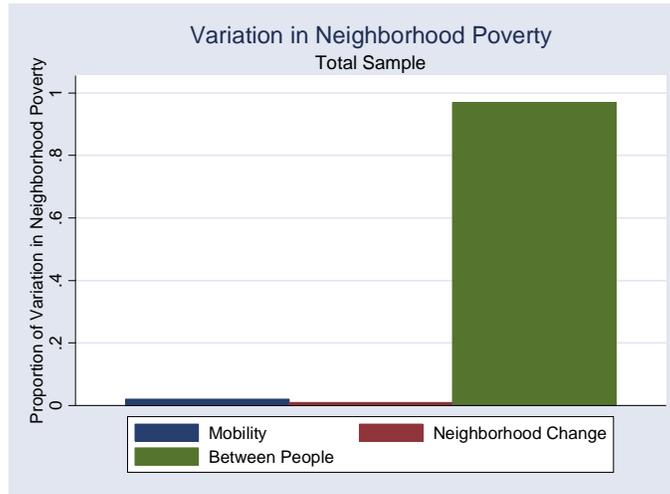

Table 2: Contribution of Residential Mobility, Neighborhood Change and Between-Person Differences to Overall Variation in Poverty*

Total Sample (N=62,972)

	All races	Blacks	Whites/Others	Latinos	Asians
Residential Mobility	2	6	1	1.60	1
Neighborhood Change	1	1	1	.40	1
Between-Person	97	93	98	98	98
Total	10	100	100	100	100
Total Sum of Squares	1236	105	326	705	100
N	62,972	5,233	14,303	38,925	4,511

Movers (N=15,574)

	All races	Blacks	Whites/Others	Latinos	Asians
Residential Mobility	8	18	7	7	8
Neighborhood Change	1	1	1	1	1
Between-Person	91	81	92	92	91
Total	100	100	100	100	100
Total Sum of Squares	310	30	58	208	14
N	15,517	1,609	2,889	10,250	769

Stayers (N=47,455)

	All races	Blacks	Whites/Others	Latinos	Asians
Residential Mobility	0	0	0	0	0
Neighborhood Change	1	2	1	1	1
Between-Person	99	98	99	99	99
Total	100	100	100	100	100
Total Variance	.019	.021	.023	.017	.023

*Numbers in table are percentages.

Figure 2: Contribution of Residential Mobility, Neighborhood Change and Between-Person Variation to Variation in Neighborhood Poverty Rate, by Race
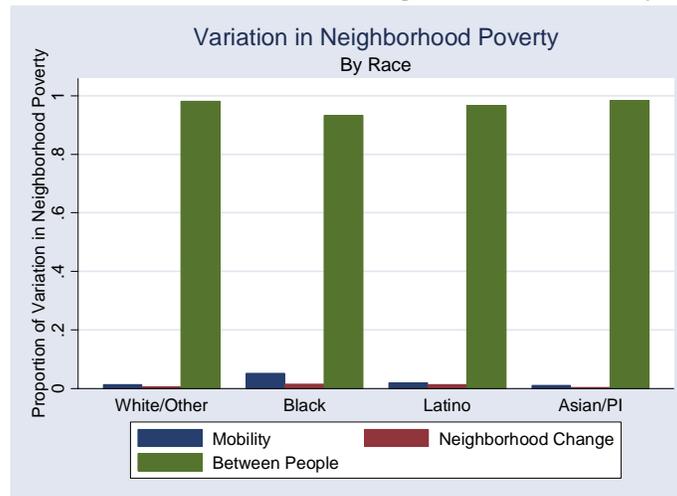

In trying to understand the greater contribution from residential mobility among blacks, it is helpful to look at the trends for only people who move. When the analysis of variance is conducted for movers only (Figure 3), residential mobility explains almost 20% of the variation in blacks' neighborhood poverty rates over the two years, twice as much as for the other three groups. This pattern could stem from two possible explanations: 1) blacks move more often than other groups, or 2) blacks experience more economic heterogeneity in their moves than members of other groups. In considering the first possibility, the bottom rows of Table 1 (see above) show the number of moves among respondents who move at least once[16]. While a higher percentage of blacks than other groups move three or more times (12% of blacks report three or more moves, compared to 10% of whites/others, 4% of Latino and essentially no Asians), the differences are not staggering. This provides some support for the second possibility, which suggests that there is at least some degree of economic heterogeneity in blacks'

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[16] A more rigorous effort to control for the amount of mobility among each racial group was also carried out, where we residualized on the number of moves. Results were essentially identical.

moves. Neighborhood change, on the other hand, does not appear to contribute

significantly to the variation in neighborhood poverty rate over this two-year period.

Figure 3: Contribution of Residential Mobility, Neighborhood Change and Between-Person Variation to Variation in Neighborhood Poverty Rate, by Race and Mover Status
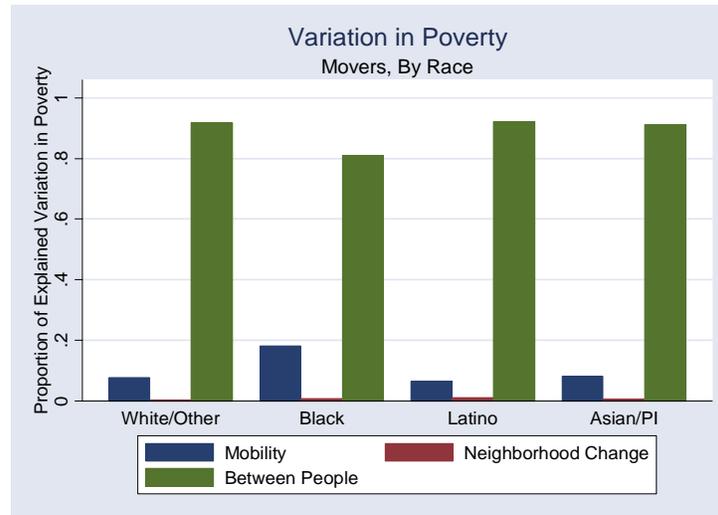
As a whole, the results of the decomposition of variance for neighborhood

poverty suggests that having information about residential mobility and neighborhood

change over a two-year period does not change cross-sectional estimates of neighborhood

experience very much. It is interesting to note, however, that among people who move,

blacks may experience more economic heterogeneity in their neighborhoods than other

groups. The potentially greater economic heterogeneity of blacks' mobility experiences

does not fully support previous research, which finds that blacks are more likely than

other groups to move between similar neighborhoods, and to repeat spells of poverty if

they are poor. This pattern could be the result of several factors, including the middle-

class status of blacks in Los Angeles relative to blacks in other cities.

Does Measuring Neighborhood Experience at More than One Point in Time Change

Estimates of Neighborhood Effects?

Given the results presented above for the decomposition of variance, it is reasonable to expect that having information about residential mobility and neighborhood change over a two-year period will not significantly impact estimates of neighborhood effects. Nonetheless, it is useful to explore different ways of measuring neighborhood experience, and to examine what difference (if any) it makes when we measure neighborhood experience at more than one point in time, as well as whether certain periods of a child's neighborhood experience are more influential than others. As mentioned earlier, we examine neighborhood poverty rate to represent the socioeconomic composition of neighborhoods.[17] In order to provide a broad picture of child development and to enable comparisons with other studies of neighborhood effects, we consider three indicators of child well-being: number of symptoms of internalizing behavior disorders, number of symptoms of externalizing behavior disorders, and scores on an applied problems assessment.

For each indicator of well-being, several measures of neighborhood experience are tested. Models 1-5 consider neighborhood experience at more than one point in time. Models 1-4 break up the two-year period into six-month intervals, where Model 1 defines neighborhood experience as the average of the first six months of the two-year period (the furthest away from the interview date), Model 2 as the average of months 7-12, Model 3 as the average of months 13-18, and Model 4 as the average of months 19-24 (the six months leading up to the interview date). By separating the two-year period into

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[17] Analyses were also carried out using neighborhood median household income as an additional measure of neighborhoods' socioeconomic status. Results were similar to those for neighborhood poverty rate.

intervals, I am able to assess any differences between recent and past neighborhood experience in its influence on well being. Model 5 defines experience as the average of each neighborhood factor over the two-year period for which the survey provides address information. This model assumes that each month during the two years has the same effect on children's well being. Finally, as a measure of poverty at one point in time (characteristic of most neighborhood effects research), Model 6 defines neighborhood experience as individuals' neighborhood poverty rate at the time of the interview. Because the models are not nested within one another, we am unable to statistically compare their relative fits. We therefore compare and contrast these six models by examining their regression coefficients and R^2 values. We also test one other model, which is not discussed in the results section. Model 7 includes all four six-month intervals in the same model. An F-test of this model against the models with each interval suggests that it does not provide a better fit for the data; the intervals in the model are highly collinear.

Neighborhood Poverty Rate

Table 3 presents the gross and adjusted regression coefficients from the regression of internalizing disorder symptoms, externalizing disorder symptoms and applied problems assessment scores on neighborhood poverty rate[18]. As a reminder, a greater number of symptoms of internalizing behavior problems suggests higher risk for depression and anxiety, while more symptoms of externalizing behavior problems signifies greater risk for acting out in. Higher scores on the applied problems assessment

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[18] See Appendix B for a table of means, standard deviations and correlations between all continuous variables in the analysis.

indicate greater math-related achievement. Figure 4 presents the regression coefficients for neighborhood poverty, net of all control variables. Neighborhood poverty rate ranges from 0-1; its coefficient therefore indicates a comparison between a completely poor neighborhood (1) and a completely non-poor neighborhood (0). Table 3 demonstrates that neighborhood poverty rate has a statistically significant effect on the numbers of children's symptoms of internalizing disorders; this finding is consistent with many previous studies that have used this behavioral index. Regarding the central question of this study, the difference between cross-sectional measurements of neighborhood experience and measurements that allow neighborhood experience to vary over time, Table 3 and Figure 4 show that the size of the regression coefficients are very similar for all six measurements of neighborhood experience. A child who goes from living in a neighborhood with a 0% poverty rate to a neighborhood with a 100% poverty rate is expected to experience 2-3 more symptoms of internalizing disorders, depending on the measurement at hand. We see, therefore, that the effects of neighborhood poverty are small yet significant, and that invariant and varying measures of neighborhood poverty do not greatly differ.[19]

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[19] It is important to acknowledge that since we allow neighborhood characteristics to vary over time, but do not allow family characteristics to vary over time, the effects of neighborhood poverty that we do observe may be smaller if we more carefully modeled family characteristics.

TABLE 3: Regression Coefficients for Models of the Effects of Neighborhood Poverty Rate on Behavior Problems and Math Achievement
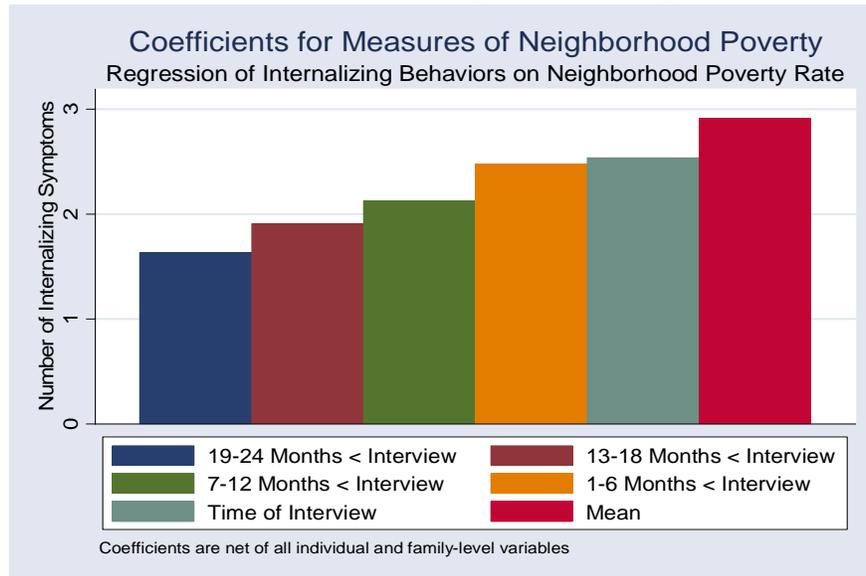
	Internalizing Behaviors (N=2,180)				Externalizing Behaviors (N=2,190)				Applied Problems Scores (N=2,120)			
	Gross β_{Pov}	R^2	Net $\beta_{Pov}^{\ a}$	R^2	Gross β_{Pov}	R^2	Net $\beta_{Pov}^{\ a}$	R^2	Gross β_{Pov}	R^2	Net $\beta_{Pov}^{\ a}$	R^2
(1) 19-24 Months < Interview	5.13	.039	1.63*	.086	4.18**	.0088	1.62	.035	-72.5**	0.096	-19.1*	.25
	(.76)		(.98)		(1.78)		(1.97)		(10.9)		(9.52)	
(2) 13-18 Months < Interview	5.24***	.043	1.91**	.087	4.66***	.0099	2.18	.036	-71.6**	0.094	-16.5*	.25
	(.73)		(.90)		(1.54)		(1.63)		10.4)		(8.92)	
(3) 7-12 Months < Interview	5.30***	.045	2.13**	.088	4.54***	.0097	2	.035	-69.7**	0.092	-14.9	.25
	(.71)		(.85)		(1.49)		(1.54)		(10.9)		(9.31)	
(4) 1-6 Months < Interview	5.50***	.050	2.48***	.091	4.47*	.0121	2.08	.037	-69.9**	0.090	-15.2	.25
	(.75)		(.89)		(1.48)		(1.59)		(11.6)		(9.56)	
(5) Time of interview	5.57***	.049	2.53***	.09	4.56***	.0095	2.09	.036	-71.9***	.084	-17.6*	.25
	(.75)		(.82)		(1.46)		(1.55)		(11.5)		(9.41)	
(6) Mean	5.87***	.054	2.91***	.092	5.28***	.0126	3.16*	.037	-73.4**	.087	-17.7*	.25
	(.77)		(.93)		(1.54)		(1.71)		(11.6)		(9.41)	
(7) 19-24 Months < Interview	.412	.052	-.707	.092	-1.82	.0141	-1.97	.0390	-30.1	.1066	-18.5	.257
	(1.48)		(1.45)		(3.55)		(3.32)		(21.8)		(18.8)	
13-18 Months < Interview	1.29		-.292		5.39		4.17		-40.4		-10.7	
	(2.16)		(2.20)		(4.28)		(4.05)		(28.2)		(24.7)	
7-12 Months < Interview	-3.47		-2.59		-2.73		-2.96		30.3		15.3	
	(3.26)		(3.21)		(6.57)		(6.48)		(48.8)		(41.7)	
1-6 Months < Interview	7.19		5.76		3.60		2.80		-34.4		-5.59	
	(3.47)		(3.69)		(7.08)		(7.36)		(33.9)		(30.6)	

Standard errors are in parentheses.

[a] Net models control for race, family income, parental marital status, parental education, child's age, parental nativity status, number of children and family poverty status.

* Indicates $p<.10$ ** Indicates $p<.05$ *** Indicates $p<.01$

Figure 4: Neighborhood Poverty Coefficients for Regression of Internalizing Behavior Problems on Measurements of Neighborhood Experience (N=2,180)


Coefficients for Measures of Neighborhood Poverty
Regression of Internalizing Behaviors on Neighborhood Poverty Rate

Legend:
- 19-24 Months < Interview
- 13-18 Months < Interview
- 7-12 Months < Interview
- 1-6 Months < Interview
- Time of Interview
- Mean

Coefficients are net of all individual and family-level variables

Despite the similarity of the measures, the results of this analysis do demonstrate that, at least for children's symptoms of internalizing disorders, measurements of neighborhood poverty rate that incorporate both present and past experience result in slightly larger estimates of neighborhood influence on child well being than do cross-sectional measurements. Examining the "net poverty" column of Table 3, we see that when neighborhood poverty rate is measured as an average over two years, a 100% increase in neighborhood poverty rate is associated with an increase of about 3 symptoms of internalizing disorders, about a half-symptom more than when neighborhood poverty is measured at just one point in time.

The analysis for neighborhood poverty rate and symptoms of internalizing behavior problems also suggests that more recent neighborhood experience seems to have a larger influence on children's behaviors than more distant experience. From Table 3, we see that when neighborhood poverty rate is measured at the time of interview or when it is measured as the average of the six months before the time of interview (months 19-

24), a 100% increase in a child's neighborhood poverty rate is expected to increase his or her number of internalizing disorder symptoms by 2.5, net of all individual and family-level controls. In contrast, when neighborhood poverty rate is measured as an average of months 1-6 of the two-year period, the predicted number of internalizing disorder symptoms is only 1.5 and the coefficient is only marginally significant.

When we look at the results for only people who moved during the two-year period (Figure 5), we see that these patterns are even stronger, and the size of the coefficients for neighborhood poverty are even larger. Since we saw earlier that neighborhood change does not play a large role in determining neighborhood experience over the two years, this suggests that residential mobility, and not neighborhood change, is generating these differences between measurements.

Figure 5: Movers' Neighborhood Poverty Coefficients for Regression of Internalizing Behavior Problems on Measurements of Neighborhood Experience (N=2,180)
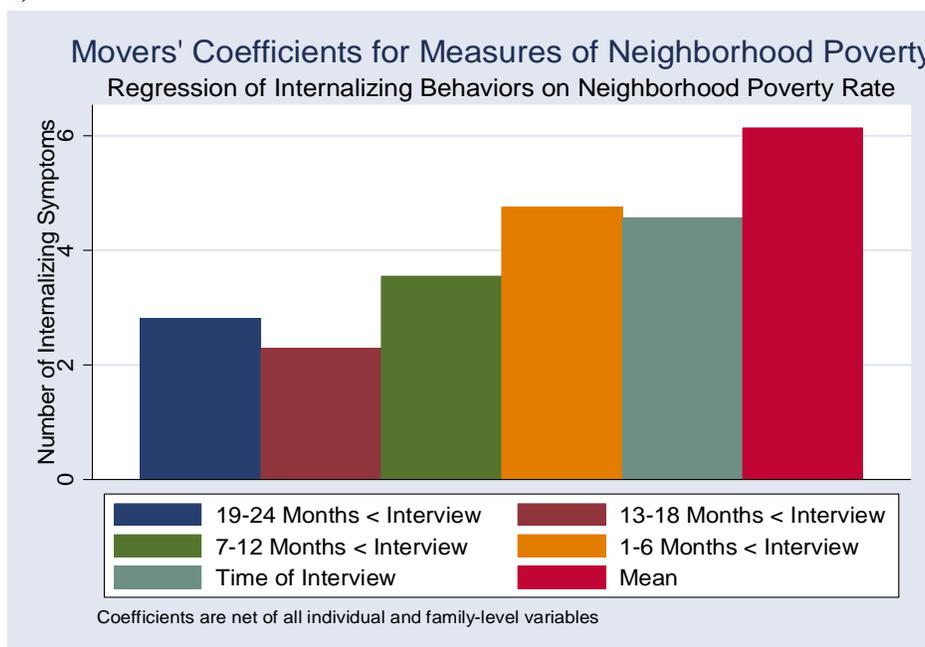
Moving on to the second outcome, symptoms of externalizing disorders, we see that the results of the analysis are not statistically significant when individual and family-level variables are introduced in the analysis. This appears to be consistent with past research, which identifies internalizing disorders such as depression and anxiety among both children and adults as more common outcomes of neighborhood disadvantage than symptoms of externalizing disorders (Elliot et al, 2000; but see Aneshensel et al, 1996). The statistical insignificance of these results notwithstanding, it is useful to consider any differences in effects based on how neighborhood poverty rate is measured. As we see in the middle section of Table 3 and in Figure 6, measuring neighborhood poverty rate cumulatively results in a larger effect on children's symptoms of externalizing disorders than measuring neighborhood poverty at one point in time. In addition, more recent neighborhood experiences have slightly larger effects on children's externalizing behaviors than more distant experiences.

Figure 6: Neighborhood Poverty Coefficients for Regression of Externalizing Behavior Problems on Measurements of Neighborhood Experience (N=2,190)
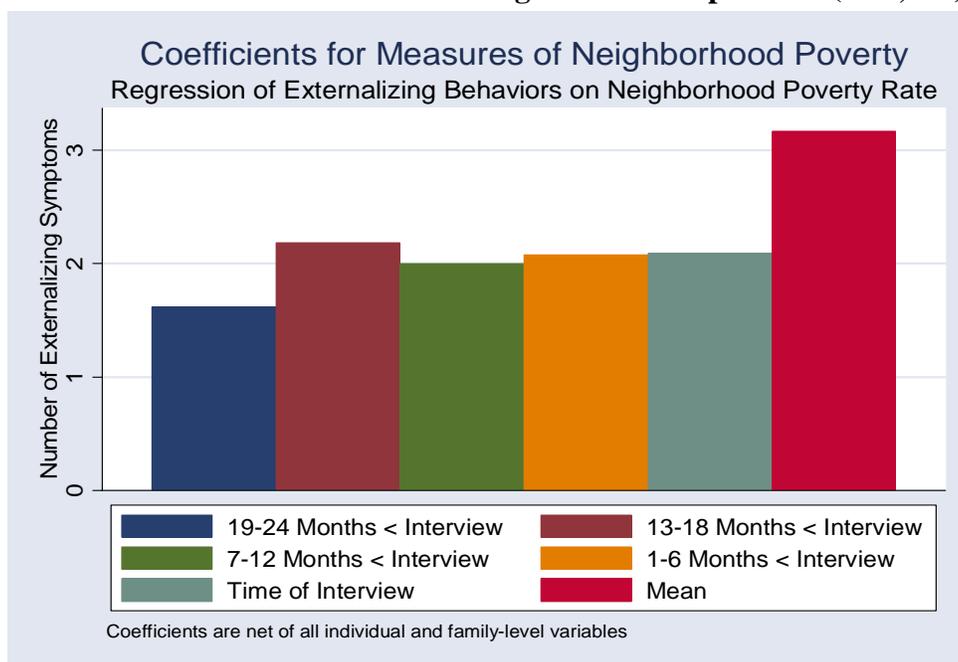
The third outcome examined, percentile ranking on an assessment measuring children's applied problems (math-related) ability, again shows the cross-sectional and temporal measurements of neighborhood poverty are similar. Whereas trends for behavioral outcomes suggested that cumulative and more recent experiences were important, we do not see the same patterns for math-related achievement.

Figure 7: Neighborhood Poverty Coefficients for Regression of Applied Problems Scores on Measurements of Neighborhood Experience (N=2,120)
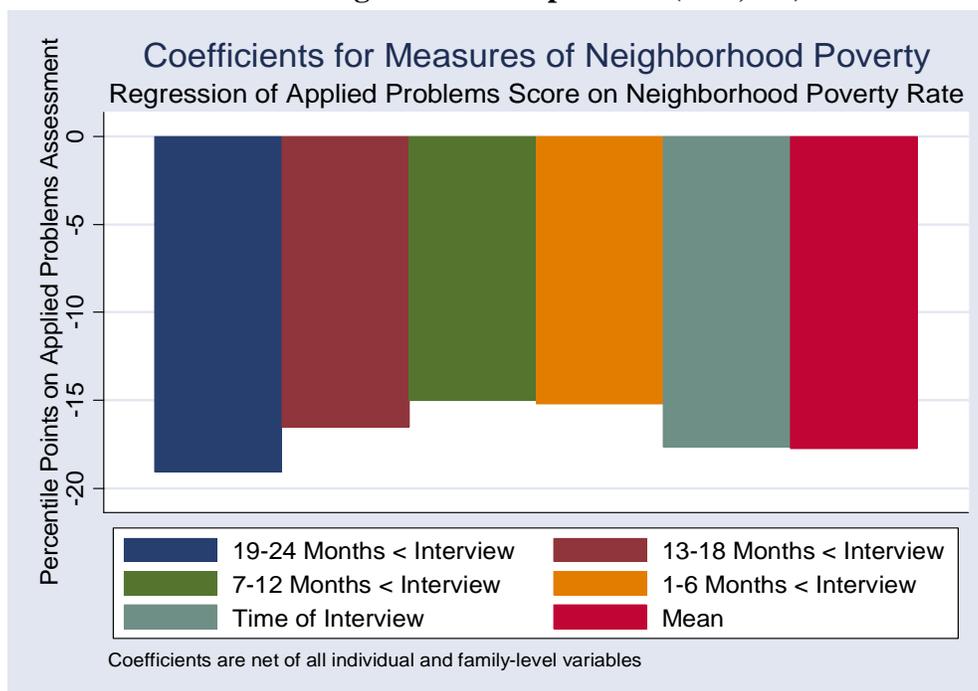
The results as a whole suggest that measurements of neighborhood poverty that do not vary over time do not differ greatly from those do, at least over a two-year period. In both instances, the effects of neighborhood poverty on the outcome are small. Nonetheless, the results begin to demonstrate that considering children's experience over time is important for fully understanding the ways in which they are influenced by their surroundings. In addition, the results for the behavioral outcomes are in line with the hypothesis that behavioral well-being is cumulative, and that behavior problems at one

point in time are best predicted by children's neighborhood experiences closest to that period. The results for math-related achievement, as measured by ability to solve applied problems, are less clear.

Conclusions

This paper has sought to explore the role of residential mobility and neighborhood change in contributing to children's overall neighborhood experiences. In addition, we have investigated what difference a temporal consideration of neighborhood experience has for the effects of neighborhoods on children. The results suggest that having information about residential mobility and neighborhood change over a two-year period does not significantly alter estimates of people's neighborhood experiences, at least as related to neighborhood poverty rate. Similarly, when the analysis is extended to examining neighborhood effects, it is clear that having information that allows for neighborhood characteristics to vary over time does not depict a very different picture from cross-sectional estimates.

While the results show the similarity between cross-sectional and longitudinal measurements of neighborhood poverty, they do begin to demonstrate the ways in which children's local environments work over time to influence their well-being. Mental and academic well-being are likely a product of both past and present neighborhood experience. This analysis provides an early assessment of the importance of residential mobility and neighborhood change; having information over a longer period of time might result in larger differences than the slight ones observed in this paper. It is also possible, however, that the small neighborhood effects examined here would be even

smaller if I allowed family characteristics to vary over the two-year period. The analysis is therefore potentially biased in both directions. Future waves of the L.A. FANS data will permit the incorporation of residential history over a longer period of time, and will provide information on children's well-being at more than one point in time. In addition to incorporating longer residential histories and panel data, future analyses can consider differences in the effects of various measurements of neighborhood experiences by race, sex, age and other characteristics of individuals. Finally, it would be useful to examine the same research questions with data from the Panel Study of Income Dynamics, in order to compare the Los Angeles-specific results with data from a nationally representative survey.

On a more general note, this paper stresses the importance of considering children's environments as cumulative and variable, rather than as isolated and unchanging. Beyond the family unit, the neighborhood is for many people the most fundamental unit of sociality. If we can understand social processes and outcomes at this basic level, researchers and policymakers will be in a position to accurately assess the factors that promote or jeopardize a healthy childhood. In doing so, programs that aim to move low-income families out of poverty can be designed and implemented with participants' mobility patterns in mind. Similarly, a better understanding of the effects of neighborhoods on behavioral and academic well being will allow for interventions that take a child's cumulative neighborhood experience into consideration.

Appendix A

Given that:

$$1/N\,(Y_{PM} - \bar{Y}) = 1/N\,(Y_{PM} - \bar{Y}_S) + 1/N\,(\bar{Y}_S - \bar{Y}_P) + 1/N\,(\bar{Y}_P - \bar{Y})$$

We then square both sides of the equation, summing over all person-spell-months for all individuals:

$$\sum 1/N\,(Y_{PM} - \bar{Y})^2 = \sum 1/N\,(Y_{PM} - \bar{Y}_S)^2 + \sum 1/N\,(Y_{PM} - \bar{Y}_S)(\bar{Y}_S - \bar{Y}_P) + \sum 1/N\,(Y_{PM} - \bar{Y}_S)(\bar{Y}_P - \bar{Y}) + \sum 1/N\,(\bar{Y}_S - \bar{Y}_P)(Y_{PM} - \bar{Y}_S) + \sum 1/N\,(\bar{Y}_S - \bar{Y}_P)^2 + \sum 1/N\,(\bar{Y}_S - \bar{Y}_P)(\bar{Y}_P - \bar{Y}) + \sum 1/N\,(\bar{Y}_P - \bar{Y})(Y_{PM} - \bar{Y}_S) + \sum 1/N\,(\bar{Y}_P - \bar{Y})(\bar{Y}_S - \bar{Y}_P) + \sum 1/N\,(\bar{Y}_P - \bar{Y})^2$$

the non-squared terms cancel out, and we are left with:

$$\sum 1/N\,(Y_{PM} - \bar{Y})^2 = \sum 1/N\,(Y_{PM} - \bar{Y}_S)^2 + \sum 1/N\,(\bar{Y}_S - \bar{Y}_P)^2 + \sum 1/N\,(\bar{Y}_P - \bar{Y})^2$$

Appendix B

Correlations of Continuous Variables in Analysis

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Neighborhood Poverty at time of Interview	1.00											
2. Mean Neighborhood Poverty Rate	.97	1										
3. 19-24 Months <Interview	.86	0.89	1.00									
4. 13-18 Months < Interview	.92	0.96	.93	1.00								
5. 7-12 Months <Interview	.95	0.97	.90	.97	1.00							
6. 1-6 Months < Interview	.98	.97	.87	.94	.97	1.00						
7. Internalizing Behavior Problem Score	.30	.31	.27	.28	.29	.30	1.00					
8. Externalizing Behavior Problem Score	.12	.13	.12	.13	.12	.12	.63	1.00				
9. Applied Problems Assessment Score	-.31	-.31	-.29	-.30	-.30	-.30	-.22	-.16	1.00			
10. Family Income	-.34	-.34	-.32	-.34	-.34	-.34	-.17	-.05	.25	1.00		
11. Education of Primary Caregiver	-.50	-.52	-.48	-.50	-.50	-.50	-.29	-.09	.37	.36	1.00	
12. Number of Children in Household	.19	.18	.16	.16	.17	.19	.10	.04	-.13	-.07	.05	1.00

Means and Standard Deviations of Continuous Variables in Analysis

Variable	Mean	S.D.
Neighborhood Poverty at time of Interview	.23	.14
Mean Neighborhood Poverty Rate	.24	.14
19-24 Months <Interview	.24	.13
13-18 Months < Interview	.23	.13
7-12 Months <Interview	.23	.14
1-6 Months < Interview	.23	.14
Internalizing Behavior Problem Score	3.13	3.13
Externalizing Behavior Problem Score	6.12	5.82
Applied Problems Assessment Score	52.79	30.18
Family Income	56.97	105.38
Education of Primary Caregiver	11.73	4.47
Number of Children in Household	2.39	1.13

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