RAND

Neighborhood Definitions and the Spatial Dimension of Daily Life in Los Angeles

Narayan Sastry
Anne R. Pebley
Michela Zonta

DRU-2400/8-LAFANS

April 2002

Labor and Population Program
Working Paper Series 03–02

The RAND unrestricted draft series is intended to transmit preliminary results of RAND research. Unrestricted drafts have not been formally reviewed or edited. The views and conclusions expressed are tentative. A draft should not be cited or quoted without permission of the author, unless the preface grants such permission.

RAND is a nonprofit institution that helps improve policy and decisionmaking through research and analysis. RAND's publications and drafts do not necessarily reflect the opinions or policies of its research sponsors.

DRAFT

Neighborhood Definitions and the Spatial Dimension of Daily Life in Los Angeles

Narayan Sastry,[1] Anne Pebley[2] and Michela Zonta[3]

RAND and UCLA

April 29, 2002

Paper prepared for presentation at the 2002 Annual Meetings of the Population Association of America, Atlanta, Georgia. The authors gratefully acknowledge support from NICHD (R01 HD35944 and R01 HD41486) and from the Russell Sage Foundation.

[1] RAND, 1700 Main Street, PO Box 2138, Santa Monica, CA 90407-2138
[2] UCLA School of Public Health, PO Box 951772, Los Angeles, CA 90095-1772
[3] UCLA Department of Urban Planning, School of Public Policy and Social Research, PO Box 951656, Los Angeles, CA 90095-1656

Introduction

In recent years, the effects of neighborhood social and physical environment on the welfare of children and adults have become a major focus for researchers and policymakers. Specialists in child development have argued that neighborhood characteristics affect children's social and behavioral development, educational attainment, participation in crime and violence, and risk-taking behaviors, such as smoking, alcohol and drug abuse, and early sexual activity (Gephart, 1997; Sampson et al., 1999; Jessor 1992 and 1993; and Aneshensel and Sucoff, 1996). Researchers studying social disparities in health hypothesize that neighborhood environments are among the mechanisms through which social status affects child and adult health outcomes (Singer and Ryff, 2001; Kawachi, et al., 1997; Robert, 1999; Taylor et al., 1997). Specifically, increasing residential segregation by class and ethnicity between 1960 and 1990 concentrated poorer, minority individuals in poor urban neighborhoods (Massey and Fischer, 1999; Sims, 1999). This concentration increased the exposure of the poor to infectious diseases, risky health-related behaviors, violence, stress, and other types of social problems that differentially affect poor neighborhoods and contributed to poorer health outcomes for lower income adults and children (Massey and Eggers, 1990; Acevedo-Garcia, 2000).

However, studies of neighborhood effects have often failed to produce persuasive and consistent evidence that neighborhood social environments affect children's outcomes (Duncan and Raudenbush, 1998; Furstenberg and Hughes, 1997; Gephart, 1997). Similarly, while researchers studying health disparities have shown that health status and survival rates are poorer in disadvantaged neighborhoods, they have yet to demonstrate specific causal effects of neighborhood environments once individual characteristics are held constant.

One problem in the study of neighborhood effects that has been long recognized by social ecologists and geographers is that "neighborhood" is a genuinely amorphous concept. Definitions of neighborhood boundaries often vary among individuals living on the same block (Lee et al., 1991; Guest and Lee, 1984; Logan and Collver, 1983; Coulton et al., 2001). An individual's definition of a neighborhood may also vary by context; for example, a person may define only those living on his block as living in his neighborhood, but define his neighborhood as a larger space when determining whether he works or shops in his neighborhood. From residents' perspective, the "neighborhood" is probably best described as a relatively close area with fuzzy boundaries that may expand or shrink depending on context and personal experience.

Most cities and towns have consensus definitions of approximately where neighborhoods begin and end, such as the Lower East Side in Manhattan or Hyde Park in Chicago. However, these areas are often larger than individual residents' definitions of "neighborhood."

A second problem in research on neighborhood effects is that the effects of the local social and physical environment on individual well-being presumably depends on how much the person is exposed to the neighborhood in which he or she lives. Neighborhood boundaries and environments are likely to be less salient for individuals whose work, school, and social life takes place far away from where they live. While there is a large body of research on issues such as journey to work, considerably less is known both about the overall spatial patterns of daily life and about the salience of neighborhoods, whatever the definition, for individuals and families.

In this paper, we investigate residents' definitions of their own neighborhoods and the salience of neighborhoods for daily life in Los Angeles County. We use data from a new survey, fielded in 2000-2001, that was specifically designed to test hypotheses about neighborhood effects on children and adults. Known as the Los Angeles Family and Neighborhood Survey (or L.A.FANS), this survey collects data on approximately 40 households in each of 65 neighborhoods in Los Angeles County. As described below, respondents were asked to report on the size of their neighborhood and the geographic location of regular activities for themselves and their children (e.g., work, school, and shopping). Detailed data are also collected on family social and economic status and background as well as a variety of child and family behaviors and outcomes. In our analysis, we concentrate on locations that adult respondents spend their time, including work places, grocery stores, religious institutions, and health care providers.

In the first section of the paper, we describe the L.A.FANS data and methods. Second, we examine patterns of perceptions of neighborhood boundaries in the 65 L.A.FANS neighborhoods for adult residents. Specifically, we investigate the effects of individual and neighborhood characteristics on respondents' definitions. In the third part of the paper we examine the relationship between the location of routine activities, like work and grocery shopping, and alternative definitions of neighborhood boundaries to determine the salience of different neighborhood definitions for the geographic space in which individual spend their daily lives. We also examine the relationship between individual and neighborhood characteristics and the distances respondents travel to the same set of daily activities. Finally, we discuss the major findings and their implications for research on neighborhoods and neighborhood effects.

Data

Los Angeles Family and Neighborhood Survey

This analysis is based on data from the recently completed Wave 1 of the Los Angeles Family and Neighborhood Survey (L.A.FANS).[4] Fieldwork for this survey was conducted in 2000 and 2001. Development of a sampling frame for neighborhoods requires the use of well-defined geographic units for which up-to-date data are available. In Los Angeles County, the units which meet these criteria are: census block groups and tracts, elementary school attendance areas, zip codes, political districts, service planning areas, and municipalities.[5] We used census tracts for purposes of sampling because they were developed to represent neighborhoods (with no cross-cutting natural or man-made boundaries) and have approximately the average population size that other research suggests residents include in urban neighborhood definitions (Coulton et al., 2001). Census tracts were divided into three strata based on an estimate of the percent of residents below the federal poverty line in 1997. The strata were defined as: very poor (the top 10% of the percent in poverty distribution), poor (the 10^{th} to 59^{th} percentiles) and not poor (the 60^{th} to 100^{th} percentiles). To oversample very poor and poor tracts, we selected 20 tracts from the very poor and poor strata and 25 tracts from the non-poor stratum—for a total of 65 tracts—with probability proportional to population size. Within each sampled tract, census blocks were sampled proportionate to population size. For more detail, see Sastry et al. (2000). In each tract, our objective was to complete interviews with approximately 40 randomly selected households, with an overasample of households with children under 18 years old. In this paper, we use sample weights to compensate for the oversample of poor tracts and of households with children within each tract, unless otherwise indicated.

Within each household, we interviewed one adult (age 18 or older) who was selected at random from the list of all adult full time residents of the household.[6] In households with children, one child (ages 9 to 17) was selected at random from all full time child residents and interviewed. Adults were interviewed in person. This sampling scheme yielded a representative

[4] L.A.FANS was designed and carried out by an interdisciplinary group of researchers at RAND, UCLA, and several other universities through the U.S. Fieldwork for the study was conducted by the RAND Survey Research Group and by Research Triangle Institute. For additional information see www.lasurvey.rand.org.
[5] Los Angeles County includes 1,652 census tracts, 1,500 elementary school attendance areas, 300 zip codes, numerous political districts for county, state and federal office, eight service planning areas, and 88 municipalities (the City of Los Angeles contains about 40 percent of the county's population) in a 4,083 square mile area.
[6] Full time residents are defined as residents who live or stay in the household more than half time.

sample of all adult residents in each neighborhood, when appropriate sample weights are used. Interviews were conducted using English and Spanish language CAPI questionnaires—the language of the interview depended on the language with which the respondent was more comfortable. Sampled respondents who were not able to respond in English or Spanish were not interviewed.[7]

Both adult and child respondents were asked to describe their neighborhoods in one of four ways: (1) the block or street you live on, (2) several blocks and streets in each direction, (3) the area within a 15-minute walk from your house, or (4) an area larger than a 15-minute walk from your house.[8] This question has significant limitations compared to the use of methods in which respondents are asked to describe in words the boundaries of their neighborhoods (as in the Project on Human Development in Chicago Neighborhoods) or to draw neighborhood boundaries on a map (see Coulton et al., 2001). In particular, the responses do not specify clear-cut boundaries and may be interpreted differently by different respondents. On the other hand, the question is much simpler for respondents to answer, does not require map-reading skills or extensive spatial memory, and has been included in a number of other large scale surveys, presumably because it provides an idea of the respondent's idea of neighborhood size without taking much interview time.

Adult respondents were also asked to report on the geographic locations of several facilities which they visit regularly, including: the store where they buy most of their groceries, their primary workplace, their place of worship, and the place they go to receive health care services. Locations were recorded either as street addresses and cities (e.g., 1600 Pico Boulevard, Santa Monica) or as cross-streets and cities (e.g., Pico Boulevard at 16th Street, Santa Monica). After geocoding respondents' homes and locations visited on a regular basis, we calculated distances from the respondent's home to each type of destination. We used a geographic information system (GIS) to calculate both Euclidean and network distances from homes to each type of destination.[9] We calculated two types of network distances: (1) number of miles on the shortest route (shortest accumulated line length between the origin and destination)

[7] By chance, none of the L.A.FANS sampled neighborhoods included a large block of Asian language speakers. The L.A.FANS sample includes about 10% Asian respondents which is roughly equal to the percentage in the population of Los Angeles County.

[8] The question was "When you are talking to someone about your neighborhood, what do you mean? Is it…." and the response categories were read out loud to adult respondents.

[9] Specifically, we used ESRI's ArcView and its extensions, including Network Analyst.

from each home to each type of destination based on the street network covering the study area;[10] and (2) travel time (drive time expressed in number of minutes) on the fastest route from each home to each type of destination based on the same street network and on speed limit information applied to each street segment.[11] In addition, we converted the number of miles of the shortest network paths into walking times.[12]

L.A.FANS also collected extensive information on respondents' educational attainment, family income and employment, ethnic identity, length of time spent living in the current neighborhood, perceptions of the neighborhood social environment, involvement in neighborhood and other organizations, immigrant status, marital and fertility history, health status, and many other characteristics. Data for this analysis on neighborhood characteristics comes from tract-level data from the 2000 census and other sources described below.

Setting

The setting for this study is Los Angeles County, California. The county includes more than 9.5 million people living in a 4,083 square mile area. For many years, Los Angeles was seen as an exception to the usual physical and social organization of American cities. Other large cities like Chicago and New York grew gradually in concentric rings around densely populated central cores. By contrast, Los Angeles grew rapidly as developers purchased and built housing developments in tracts of land throughout the county (Fogelson, 1993). Los Angeles' development also occurred primarily during a period in American history when rail transport and, subsequently, automobiles were readily available. Most neighborhoods, even in "inner city" areas, in Los Angeles still reflect "suburban" development with relatively low density housing and no single central urban core. More recently, the growth of similar urban areas in the United States and internationally has led urban scholars to view Los Angeles as the paradigm for future cities (Soja, 1989; Dear at al., 1996). In particular, Soja (1989) argues that new types of urban areas like Los Angeles are the product of three trends: accelerated immigration, geographic dispersal of economic production, and a growing international division of labor. The pervasive nature of these trends for future urban development makes it important

[10] For the purpose of distance calculations, we based the analysis on the street network covering the five counties included in the Los Angeles region: Los Angeles, Orange, Riverside, San Bernardino, and Ventura.
[11] Driving on some roads (e.g., freeways) is faster than on others.
[12] Walking times assume that adults walk an average of 4.0 feet per second, i.e. 1 mile per 22 minutes.

to understand their implications for social processes and social ecology in urban areas such as Los Angeles.

As a consequence of its development pattern, Los Angeles is the classic example of urban "sprawl"[13] thought by sociologists and urban planners to be less conducive to urban neighborhood life and individuals' identification with a particular neighborhood (Guest and Lee, 1982; Freeman, 2001). As in many suburban areas elsewhere in the country, it is generally difficult to determine where one neighborhood or city ends and another begins. While residents, politicians, and real estate agents use local names to designate specific neighborhoods, there is often little consensus on the boundaries of these areas. For example, the terms "East Los Angeles" and "West Los Angeles" can be used to refer to relatively small locales or to everything east or west of downtown Los Angeles.

Other characteristics commonly attributed to Los Angeles are its heavy reliance on automobiles for transportation and its extensive freeway system. The freeway system makes lengthy commutes to work, school, and other places relatively easy (except during rush hour). Thus, we might expect the neighborhoods in which people live to be less salient in Los Angeles than in older, more pedestrian cities.

Analytic Strategy and Variables

Our analysis focuses on modeling four separate sets of individual outcomes related to neighborhoods and daily life in the L.A.FANS data. First, we examine the correlates of respondents' definitions of the size of their neighborhoods using ordered logit models. These models provide the appropriate technique for modeling outcomes that are categorical and ordinal—that is, in which the actual outcome values are unimportant except that higher values correspond to larger neighborhood definitions. Second, we use linear regression models to analyze the distance between respondents' homes and four places commonly visited on a regular basis: grocery store, place of worship, place of work, and health care provider. Third, we convert information on the location of these places into an ordinal outcome that indicates whether each place is in: (a) the respondent's tract, (b) a first-order neighboring tract (i.e., the ring of tracts immediately adjacent to the respondent's tract on all sides), (c) a second-order neighboring tract, or (d) more than two tracts away. We model this outcome using ordered logit

[13] The term "urban sprawl" was first used by William Foote Whyte when describing Los Angeles.

models. Finally, we construct indicators of whether each of the four destinations is within a 15-minute walking distance from the respondent's home and model this outcome using linear probability models. The advantage of this measure is that we can directly compare models for locations of activities of daily life to similar models of neighborhood definitions that are based on an identical 15-minute radius.

There are several modeling issues that are important in our analyses. When comparing respondents' definitions of the size of the neighborhoods, we investigate the effects of restricting the comparisons to respondents living in the same tract (i.e., respondents are compared only with others living in the same tract). Conceptually this is important, because it eliminates the possibility that different definitions of neighborhood simply reflect the fact that neighborhoods are actually different (for example, in terms of their density, road network, topography, etc.). We do so by including a dummy variable, or fixed effect, for each tract in the sample. The fixed effect absorbs all factors that are common to respondents in the same tract—that is, the characteristics of the tract itself—and focuses the analysis on systematic intra-tract differences in neighborhood definitions based on respondents' individual characteristics.

However, we are also interested in understanding factors behind systematic differences in neighborhood definitions based on characteristics of the tracts. As a result, we extract the fixed effects estimates from the models and regress them on tract-level characteristics in a separate linear regression model. We expect that tract-level fixed effects are considerably less important when examining our various outcome indicators for the location of activities of daily life. However, we test whether these fixed effects are statistically significant and include them when they are.

As described above, L.A.FANS oversamples adults living in households with children and in poor and very poor neighborhoods. It is important to account for this design feature through the use of sample weights. In addition, the clustered nature of the L.A.FANS sample means that it is necessary to use robust standard error estimation procedures that account for the correlation among respondents living in the same tract in order to obtain reliable results from statistical tests. All the results we present are weighted and all statistical tests are based on robust standard error estimates.

We are working with a preliminary release of the L.A.FANS data and the process of geocoding the locations for activities in daily life is currently incomplete, although the majority

of the geocoding has been done. The cases that are not geocoded yet are more likely to be those that have problems or inaccuracies. Based on a careful review of these cases, we believe that these problems are mostly the result of interviewer errors (rather than systematic reporting errors based on respondent characteristics). However, it is the case that recent immigrants and other respondents who have lived only a short time in their current neighborhoods are less likely to have settled on a regular grocery store, place of worship, or health care provider. In addition, younger respondents and the uninsured are less likely to have a health care provider. We note in each table the number of observations on which the results are based.

The analysis for each type of regularly visited location is based on the number of respondents who provided answers for that type of location. For example, virtually all respondents visit a grocery store regularly, but not all are affiliated with a religious institution and only part of the sample works. In future analyses, we plan to examine the characteristics of respondents who, for example, work or do not work, in order to determine whether holding a job affects perceptions of neighborhood boundaries and the spatial dimensions of respondents' lives. Finally, we view this analysis as descriptive, in that we do not account for the choice set of available destinations when examining the particular location at which a respondent shops, works, worships, or obtains health care. Again, this is a topic that we plan to examine in future work.

Outcome Variables

In Table 1, we present a tabulation of responses to the question about how respondents define the size of their own neighborhoods. The most popular answer is the block or street on which the respondent lives, provided by 36 percent of the weighted sample.[14] The most useful answer from the perspective of this study corresponds to the description of the neighborhood as the area within a 15-minute walk from the respondent's home. Only 13 percent of respondents viewed their neighborhoods as encompassing a larger area. This response is useful because, based on average walking speeds and street layout, we can map the area corresponding to this response for each respondent using the geocoded location of his or her residence. Moreover, we

[14] Child respondents living in the same households were even more likely to give the first response, i.e., that their neighborhood is the block or street they live on. On average, younger children (9 to 11 years old) were more likely to give this response than teens (12 to 17).

can determine whether the location for each activity of daily life lies within a 15-minute walk from the respondent's home.

We show descriptive statistics for the locations of common activities in Table 2. For each location, this table presents: (a) the mean distance from the respondents' residences, (b) the proportion of locations within a 15-minute walk, and (c) a classification of the location according to the contiguity-order of the tract in which it falls, distinguishing between orders 0, 1, 2, and 3-plus. The results show that grocery stores are closest to home, followed by places of worship, health care provider and, finally, place of work. This order corresponds closely to our expectations. The proportion of locations within a 15-minute walk from home follows the same pattern, varying from a high of 34 percent for grocery stores to a low of 17 percent for health care providers. Results by contiguity-order for the tract of the location reveal that over half of respondents' grocery stores are in their own tract or in a neighboring tract, as are 44 percent of places of worship. In contrast, roughly two-thirds of respondents have places of work and health care providers located 3 or more tracts away from home.

Figures 1-4 illustrate these results based on data for an actual census tract in L.A.FANS. Although the area within the census tract and each tract contiguity represent the actual area, the shape of these geopolitical units has been altered to prevent identification of the tract and protect respondent confidentiality. As described above, grocery stores are closest to home while health care providers are furthest away.

Individual Characteristics

The few extant studies of neighborhood boundaries in urban areas suggest that individuals' perceptions of "neighborhood" vary by ethnicity, age, sex, and whether the location is urban or suburban (Coulton et al., 2001; Guest and Lee, 1984; Lee and Campbell, 1997; Logan and Collver, 1983). In this analysis, we examine the effects on neighborhood definition and the spatial distribution of respondents' activities of individual characteristics and those of the neighborhoods they are describing. Table 3 shows summary statistics for the variables used in the individual-level analyses.

Educational attainment and family income are likely to be important correlates of perceived neighborhood size and of neighborhood salience. Specifically, we hypothesize that more educated respondents and those with higher incomes are likely to have more access to

transportation (i.e., more automobiles), to live in neighborhoods (e.g., in the canyon areas) where work and other activities are further away, and to consider their neighborhoods to be larger geographic spaces because of their more spatially dispersed lives. Educational attainment is included as a set of three dummy variables indicating whether the respondent: (1) completed high school or some college, (2) has a college degree, or (3) has a graduate school degree. The omitted category is not completing high school. For income, we use family income earned during the calendar year preceding interview by the respondent, his/her spouse or partner, and his/her coresident children.[15]

We also include whether or not the respondent has children. Our hypothesis is that parents are likely to spend more time in the neighborhoods where they live and likely to perceive neighborhoods as larger areas than non-parents because children, especially as they grow older, form friendships on adjacent blocks.

The length of time an individual lives in a neighborhood is also likely to affect both his perceptions and his use of neighborhood resources. We posit that longer-term residents have had a greater opportunity to get to know more people and locations in their neighborhood. Therefore, we would expect them to perceive their neighborhood as larger and to center more of their life in their neighborhood.[16] In a similar vein, we include a variable indicating whether the respondent is a recent immigrant to the United States. Our hypothesis is that recent immigrants are likely to be more isolated and, therefore, will know less about the areas in which they live.

The analysis also includes three variables reflecting the respondent's ties to the neighborhood. The first two are whether or not the respondent reports having any friends in the neighborhood and whether or not he/she has any family members in the neighborhood (aside from any living in the respondent's household). The third is an index of participation in civic organizations and activities. Respondents were asked whether or not they participated during the preceding 12 months in the following types of organizations: (a) neighborhood or block organization meeting, (b) business or civic group such as the Masons, Elks, or Rotary Club, (c) a nationality or ethnic pride club, (d) a local or state political organization, (e) a local volunteer

[15] This variable includes only earned income and public transfers (TANF, Social Security, etc.) and excludes earning on assets.

[16] An alternative hypothesis is selection: i.e., people who lived in a neighborhood for a longer time are more likely to be those who have found life in that neighborhood to be convenient. Those who work, attend religious services, and

organization, (f) a veteran's group, (g) a labor union, (h) a literary, art, study, or discussion group, (i) a fraternity, sorority, or alumni group. The index is the sum of "yes" responses to these questions. Although the activities do not necessarily take place in the respondent's neighborhood, we interpret this index as a reflection of general civic involvement which also may be associated with neighborhood involvement.

Because of the results of previous studies cited above, we also include the respondent's age, sex, and ethnicity. In the case of age, we hypothesize that older adults are likely to spend a greater amount of time in their own neighborhoods and to use services that are near. Therefore, we include two age variables. The first is simply a continuous years-of-age variable. The second is a dummy variable representing whether or not the respondent is age 55 or older. Sex is included as whether or not the respondent is male. L.A.FANS collects extensive data on ethnic identity, including a variable recording all ethnic groups of which the respondent is a member. In this analysis, we use another variable in which the respondent chooses which ethnic group "best describes" their own ethnicity. Dummy variables are included for African Americans, Latinos, Asian and Pacific Islanders, and other ethnicity.[17] The omitted category is whites.[18]

Finally, we also include a variable indicating the language in which the interview was conducted, for two reasons. First, respondents interviewed in Spanish were those who were not fluent enough to be interviewed in English. We hypothesize that lack of English fluency can seriously limit the scope of respondents' daily lives. Non-English speakers may be more dependent on close neighbors, especially in Spanish language enclaves, and less familiar with people and locations outside their block. Second, although considerable care was taken by the bilingual research and survey staff to insure that the English and Spanish questions had exactly the same meaning, connotation, and nuance, subtle differences may remain.[19] Twenty-seven percent of the weighted sample (and 38 percent of the unweighted sample) was interviewed in Spanish.

---

spend more of their time outside the neighborhood are more likely to move away. We do not attempt to test this selection process in this paper, but this alternative process should be kept in mind.

[17] The other ethnicity group includes principally: (a) Native Americans and (b) multiethnic respondents who preferred not to select a single "best" ethnic group

[18] Using the Census Bureau system of classification, this group is "non-hispanic whites."

[19] For example, there are multiple Spanish language terms for "neighborhood" including *vecindad*, *vecindario*, and *barrio*. In some circles in Los Angeles, *barrio* has a strong political connotation, while in others it is the commonly used term for neighborhood. The Spanish questionnaire uses both *vecindario* and *barrio* in each question referring to "neighborhood" in English.

Neighborhood Characteristics

The analysis also includes variables that describe the physical and social characteristics of the 65 neighborhoods in the sample. We include several variables reflecting the type of terrain and "built environment" in the census tract where the respondent lives. The first two variables are tract area in square miles and population density. We hypothesize that respondents in higher-density areas are likely to perceive their neighborhoods to be smaller and to be able to find stores, religious institutions, work, and health care closer to home than those in more sparsely settled rural areas of the county. We also include dummy variables indicating which Service Planning Area (SPA) the tract is located in. Los Angeles County is divided into eight SPAs, as shown in Figure 5, based on settlement patterns, terrain, jurisdictions, and other considerations. We use SPA dummies as proxies for the region of the county. For example, the San Fernando SPA includes the more classically suburban San Fernando Valley.

Neighborhood variables also include the percent of the elementary school population in 1997 which has limited proficiency both English and Spanish (i.e., has limited proficiency in English and does not speak Spanish). This variable is intended to reflect whether or not the respondent lives in a language enclave in which neither English nor Spanish are the predominant language.[20] We also include the percent of dwellings that were vacant in the tract and the percent of children under age 5 from the 2000 Census.

The final set of neighborhood characteristics reflects the social and economic status of each neighborhood.[21] We include both the crude death rate and the teenage birth rate for 1999 for each tract. Death rate variations among tracts are primarily due to variations in homicide and accidental deaths (particularly among teens and young adults) and in the age structure, especially the proportion of the population who are elderly. Two of the social service variables reflect the percent of families in the tract who were welfare recipients and the percent who were Food Stamp recipients in 1997. We also include the percent of the adult population of each tract who filed for unemployment assistance in 1997. A last neighborhood-level variable is the number of

[20] We also included in earlier models a dummy variable for whether Latinos or whites were the largest ethnic group in the tract. However, the coefficient on this variable was not significant.

[21] Income data are not yet available from the 2000 Census. Once these data are available we will reestimate the models including income.

organizations providing social services in the neighborhood. Data for this variable come from business databases for 1999.[22]

L.A.FANS also collected extensive physical and social observations of each neighborhood including the type of land use, the condition of dwelling, the existence of garbage and graffiti, etc. We included variables on type of land use and neighborhood conditions in our initial models from this observation data. However, none of these variables were related to the outcome variables and they are omitted from the final models.

Results

We present our results in two parts. We begin by examining differences in neighborhood definitions, across individuals within the same tract and then across tracts. Next, we examine the locations of our four activities of daily life.

Neighborhood Definitions

Our results for the ordered logit models of neighborhood definition are presented in Table 4. Two sets of results are shown, with Model II adding tract-level fixed effects to Model I. Both models fit the data well. The parameter estimates are interpreted as the log-odds of a one-category increment in the dependent variable (for any of the first three outcome categories). Thus, the first significant parameter for Model I in Table 4 shows that, for Asian/Pacific Islanders compared to whites, the odds of reporting a neighborhood corresponding to "several blocks and streets in each direction" is exp(-0.500) = 0.607 or 39 percent lower than the odds of reporting the baseline category of "the block or street."

Overall, the results for Model I in Table 4 indicate that there are a number of significant correlates of reported neighborhood size. Education has particularly strong effects, with respondents at each higher level of educational attainment more likely to report a larger neighborhood size. On the other hand, recent immigrants are much more likely to describe their neighborhoods as being smaller. Log of income is associated with larger reported neighborhood size, but only above the mean. Respondents who said they had friends or relatives in their neighborhood tended to report their neighborhoods as being larger. We speculate that the reason is that these respondents are likely to know other parts of the neighborhood because of people

[22] Specifically, we use data from InfoUSA which compiles data from phone books, business records, and other sources by standard industry code (SIC).

they know who live there and thus likely to think of their neighborhood as a larger area. Finally, respondents who had higher levels of participation in civic activities (as measured by a count of the number of different activities in which they participated) had a higher likelihood of defining their neighborhoods as being larger.

Adding tract-level fixed effects removes systematic differences in neighborhood definitions that are based on actual differences in neighborhood size and characteristics (rather than on respondents' perceptions). The main change in results is to render insignificant a number of covariate effects that were previously statistically significant. Covariates that are no longer significant include being an Asian/Pacific Islander, income, whether the respondent has friends in the neighborhood, and the index of neighborhood participation. For most of these covariates, the estimated effects are attenuated modestly; however, standard errors tended to increase in the fixed effects model, leading to these effects being insignificant.

An important by-product of the fixed effects approach is a tract-specific estimate that captures genuine differences in the neighborhood attributes. These estimates can be extracted from the fixed effects model and analyzed as outcomes in their own right. This approach represents a variant to the standard form of multilevel model that is based on the use of random intercepts (or random coefficients) in the first stage.[23]

The results from modeling tract-level fixed effects are presented in Table 5. There is considerable variation in tract fixed-effects and a relatively large number of statistically significant covariates. Overall, this model fits the data and the covariates explain roughly 60 percent of the variation in fixed effects across the 65 tracts in our sample. Tract area is directly associated with a larger neighborhood definition. However, density is associated with a smaller one, in contrast to our expectations for a negative association. Higher housing vacancy rates are associated with larger neighborhood definitions. Measures of poverty, program participation, and language minority status are in general associated with smaller neighborhood definitions. In particular, smaller definitions are more common among tracts with a higher proportion of respondents who speak neither English nor Spanish at home; higher teenage birth rates; higher welfare and food stamp recipiency rates; and a larger number of social service providers. Two anomalous findings are that higher crude death rates and rates of unemployment insurance are

[23] The advantage of using fixed effects is that they remove *all* correlation between the tract-specific effects and the measured covariates.

both associated with larger neighborhoods. A higher proportion of children in the tract is associated with larger perceived neighborhood size, which is likely due to the development of friendship ties (as we saw above, friends in the neighborhood are associated with a larger definition of neighborhood size). Finally, there are systematic regional pattern in neighborhood size, with smaller neighborhoods more common on the Eastside and Westside and in the San Fernando Valley.

Locations of Regular Activities

We turn next to analyzing indicators of the location of our four regular activities. We begin by looking at models for the distances to each of these destinations, shown in Table 6. Overall, our models for grocery store, place of worship, and health care provider fit the data (based on the F-statistic shown at the bottom of the table), although our model for place of work does not. The only variable with a coefficient having a consistent effect across all models is duration of residence in the tract: the less time a respondent has lived in the tract, the further he or she tends to travel to grocery shop, worship, work, or receive health care, with only the effect on place of worship effect not reaching statistical significance. Latinos tend to travel considerably further for grocery shopping compared to other groups, as do members of more affluent households. For the place of worship model there is a single large covariate effect revealing that blacks travel substantially greater distances to a place of worship than other groups. This result may reflect both recent extensive out-migration of African Americans to suburban areas as well as the strong ties many African American out-migrants retain with their churches even after they have moved. Finally, Latinos and Asian/Pacific Islanders travel longer distances to a health care provider, perhaps reflecting greater use of hospital emergency rooms by these groups.

The mean distances to these four types of locations are sensitive to outliers. Since our interest centers on whether these locations are close to respondents' homes, we recoded the distances into four categories based on contiguity-order of the tract in which the location fell and whether the location was within a 15-minute walk. In Table 7, we use ordered logit models to look at the categorical distance measure for each location. This variable is coded in four categories: (1) same tract (2) next tract out, (3) two tracts away, and (4) more than two tracts away.

The F-statistics indicate that all of the models in Table 7 fit the data. Many of the ethnicity effects are significant and similar to those in the distance models in Table 6. Compared with whites, African Americans, Latinos and respondents in the "other" ethnic category travel significantly longer distances to grocery stores. Part of the reason may be that there are more grocery stores in predominantly white neighborhoods, even when income is held constant. Latinos and Asians may also travel further to visit ethnic grocers. However, while one would expect this effect to be larger for recent immigrants, the coefficient for recent immigrants is not significant. Furthermore, respondents interviewed in Spanish are likely to shop for groceries closer to home, suggesting again greater isolation on the part of non-English speakers. High school graduates also travel further to the grocery store than those with less education. We speculate that this is an income effect: high school graduates have higher incomes and may be more likely to shop at a greater distance from home to obtain better prices or a wider selection.

In the case of places of worship, only the coefficient for African Americans is statistically significant. Black respondents travel significantly greater distances to attend religious services than members of other ethnic groups. For work places, Asians travel significantly longer distances than whites while respondents in the "other" ethnic category travel significantly shorter distances. Asians are a very diverse group in terms of national origin, immigrant status, and income levels. Some of the observed effect may be due to Asian immigrants working in ethnic enclaves, but living outside these enclaves. On the other hand, many Japanese-Americans, Chinese-Americans, and Indian-Americans hold high-status white-collar jobs. These jobs may require commuting to a commercial area, but higher income levels allow these respondents to live in more wealthy communities in the San Fernando Valley or the canyon areas. Respondents in higher income families also travel significantly longer distances, possibly reflecting the same patterns as higher income Asian respondents.

Finally, in the case of health care providers, the only coefficient that is statistically significant is for Asian and Pacific Islanders. Respondents in these groups travel significantly further than whites for health care.

In Table 8, we use a linear probability model to estimate a model looking at whether or not each location is within a 15-minute walk of the respondents home. Only the model for workplace fits the data and relatively few coefficients in these models are statistically significant. The coefficient on family income is significant in the grocery store and place of work models.

Grocery stores and work places are more likely to be within a 15-minute walk for lower income respondents than for those with higher incomes. Similarly, recent immigrants are more likely to work close to home by this measure.

As in the absolute distance models shown in Table 6, the results in Table 8 show that respondents who have lived in the neighborhood longer are more likely to work close to home than those who are more recent arrivals. However, the effects of duration of residence are only significant for place of work. Finally, Latinos are less likely to go to a health care provider who is within a 15-minute walk from home than members of other ethnic groups.

Conclusions

In this paper, we sought to examine two issues: (1) whether or not residents' perceptions of the size of their neighborhood varies by their own characteristics and by neighborhood characteristics, and (2) how salient neighborhoods are in the daily lives of Angelenos and whether salience differs across social groups.

Our results suggest that, despite the limitations of the question on respondents' perceptions of neighborhood boundaries, there is a considerable amount of systematic variation in responses that is associated with the characteristics of residents and tracts. In particular, respondents' perceptions are strongly affected by their own educational attainment, whether or not they are recent immigrants, and whether or not they have relatives in the neighborhood. Related attributes such as family income, having friends in the neighborhood, and the index of civic participation are also related to perceived neighborhood size, but lose statistical significance when neighborhood-level fixed effects are introduced. In general, residents who are more educated, higher income, not recent immigrants, and with more social ties in their neighborhood are more likely to say that their neighborhood is a larger area than other respondents. These results are consistent with other studies showing higher levels of social isolation among recent immigrants and residents of poorer neighborhoods. The results on having friends and family members in the neighborhood and civic participation are particularly intriguing. They suggest that respondents who interact more with their neighbors are likely to think of their neighborhood differently than those who do not. Neighborhood characteristics also play a major role in explaining variations in respondents' perceptions of neighborhood size. Neighborhood area, density, age composition, geographic location, and socioeconomic status are all strongly associated with residents' perceptions. In particular, residents perceive their

neighborhoods as larger if the tract they live in is larger in terms of area (an indirect reflection of population density), if the population is less dense, and if there are more vacant buildings. Neighborhoods are perceived as smaller if they are poorer and have a larger proportion of minority language-speakers.

The results for the distance to regular activities also provide some intriguing findings. Despite Los Angeles' image as an urban area where residents drive long distances to get anywhere, our analysis shows that a surprising number of routine activities take place close to home. Among the locations we examined, the respondent's work place is, on average, furthest from home. But the average distance from home to work is only 8.2 miles. This finding is consistent with 1990 Census data on journey to work. Among five Primary Metropolitan Statistical Areas (PMSAs) that had a population size of more than 2 million people in 1990, the Los Angeles-Long Beach PMSA had the second shortest average travel time—26.5 minutes, compared with 35.3 minutes for New York, 29.1 minutes for Chicago, 24.8 minutes for Philadelphia, and 29.5 minutes for Washington DC (U.S. Census Bureau, n.d.). As shown in Table 2, within the area of the second-order contiguity of tracts (i.e., two or fewer tracts away from home), 86 percent of respondents shop for groceries, 68 percent of respondents who are members of a religious organization attend worship services, almost 33 percent of those employed work, and 38 percent see their health care providers. These results suggest that neighborhoods, however they are defined, are highly salient to adult respondents in terms of daily activities.

The multivariate results on distances suggest that the spatial patterns of respondents' lives are complex and not easily explained. In general, higher income respondents are more likely to travel longer distances to work and for grocery shopping than those with lower incomes. Increasing duration of residence in the neighborhood is often associated with shorter distances to activities. There are also intriguing results for ethnicity that require further investigation. Members of all other ethnic groups travel farther to buy groceries than white respondents. Asian and Pacific Islanders also work and visit their health care providers further from home. Latinos also visit more distant health care providers when absolute distance is considered. African Americans travel farthest to attend religious services. As described above, this difference is likely to be the effect of a wave of out-migration from traditional African American neighborhoods in more central areas of Los Angeles to more distance suburbs.

References

Acevedo-Garcia, D. (2000) "Residential Segregation and the Epidemiology of Infectious Diseases," *Social Science & Medicine* 51: 1143-1161.

Aneshensel, C.S., and C.A. Sucoff (1996) "The Neighborhood Context of Adolescent Mental Health," *Journal of Health and Social Behavior* 37: 293-310.

Coulton, Claudia J., Jill Korbin, Tsui Chan, and Marilyn Su (2001) "Mapping Residents' Perceptions of Neighborhood Boundaries: A Methodological Note" *American Journal of Community Psychology* 29(2): 371-383.

Duncan, G.J., and S.W. Raudenbush (1998) "Neighborhoods and Adolescent Development: How Can We Determine the Links?" Joint Center on Poverty Research Working Paper #3.

Elliott, D.S., et al. (forthcoming) *Overcoming Disadvantage: Successful Youth Development in High Risk Neighborhoods*. Chicago: University of Chicago Press.

Freeman, Lance (2001) "The Effects of Sprawl on Neighborhood Social Ties: An Explanatory Analysis." *Journal of the American Planning Association*, 67(1).

Furstenberg Jr., F.F., and M.E.Hughes (1997) "The Influence of Neighborhoods on Children's Development: A Theoretical Perspective and a Research Agenda," in J. Brooks-Gunn, G.J. Duncan, and J.L. Aber (eds.) *Neighborhood Poverty*, Volume II. New York: Russell Sage Foundation.

Gephart, M.A. (1997) "Neighborhoods and Communities as Contexts for Development," in J. Brooks-Gunn, G.J. Duncan, and J.L. Aber (eds.) *Neighborhood Poverty*, Volume I. New York: Russell Sage Foundation.

Guest, A.M. and B.A. Lee (1984) "How Urbanites Define Their Neighborhoods" *Population and Environment*, 71(1): 32-56.

Jencks, C., and S. E. Mayer (1990) "The Social Consequences of Growing Up in a Poor Neighborhood," in L.E. Lynn, Jr. and M.G. H. McGeary (eds.) *Inner City Poverty in the United States*. Washington, DC: National Academy Press.

Jessor, R. (1992) "Risk Behavior in Adolescence: A Psychosocial Framework for Understanding and Action," in D.E. Rogers and E. Ginzburg (eds.) *Adolescents at Risk: Medical and Social Perspectives*. Boulder, CO: Westview Press.

Jessor, R. (1993) "Successful Adolescent Development Among Youth in High Risk Settings," *American Psychologist* 48: 117-126.

Kawachi, I. et al. (1997) "Social Capital, Income Inequality, and Mortality" *American Journal of Public Health*, 87(9): 1491-1498.

Lee, B.A., and K.E. Campbell (1997) "Common Ground? Urban Neighborhoods as Survey Respondents See Them," *Social Science Quarterly* 78(4): 922-936.

Lee, B.A., K.E. Campbell, and O. Miller (1991) "Racial Differences in Urban Neighboring" *Sociological Forum*, 6(3): 525-550.

Logan, J.R. and O.A. Collver (1983) "Residents' Perceptions of Suburban Community Differences" *American Sociological Review*, 48(3): 428-433.

Massey, D.S., and M.L. Eggers (1990) "The Ecology of Inequality: Minorities and the Concentration of Poverty, 1970-1980," *American Journal of Sociology* 95(5): 1153-1188.

Massey, Douglas S, and M. J. Fischer (1999) "Does Rising Income Bring Integration? New Results for Blacks, Hispanics, and Asians in 1990." *Social Science Research* 28:316-326.

Robert, SA (1999) "Socioeconomic Position and Health: the Independent Contribution of Community Socioeconomic Context" *Annual Review of Sociology*, 25: 489-516.

Sampson, R.J., J.D. Morenoff and F. Earls (1999) "Beyond Social Capital: Neighborhood Mechanisms and Structural Sources of Collective Efficacy for Children," *American Sociological Review.*

Sastry, N., B. Ghosh-Dastidar, J. Adams, and A.R. Pebley (2000) "The Design of a Multilevel Longitudinal Survey of Children, Families, and Communities: The Los Angeles Family and Neighborhood Study," RAND Labor and Population Working Paper DRU-2400/1-LAFANS.

Sims, M. (1999) "High-status Residential Segregation among Racial and Ethnic Groups in Five Metro Areas, 1980-1990." Social Science Quarterly 80:556-573.

Singer, BH and CD Ryff (eds.) (2001) *New Horizons in Health: An Integrative Approach*. Committee on Future Directions for Behavioral and Social Sciences Research at the National Institutes of Health, CBASSE. Washington, DC: National Academy Press.

Taylor, S E, R L Repetti, and T Seeman (1997) "Health Psychology: What is an Unhealthy Environment and How Does it Get Under the Skin?" *Annual Review of Psychology*, 48:411-447.

U.S. Census Bureau (n.d.) "Travel to Work Characteristics for the 50 Largest Metropolitan Areas by Population in the United States: 1990 Census" Available on http://www.census.gov/population/socdemo/journey/msa50.txt.

Table 1. Reported neighborhood size for weighted L.A.FANS Adult Sample

Neighborhood size	Number	Percent
Block or street	933	35.8
Several blocks or streets	605	24.3
15 minute walk	679	26.7
More then 15 minute walk	320	13.2
	2,537	100.0

Table 2. Summary statistics for locations of activities of daily life for weighted L.A.FANS Adult Sample

Variable	Grocery store	Place of worship	Principal Place of work	Health care provider
Mean distance (miles)	1.37	2.83	8.15	4.61
Within 15 minute walk				
Yes	33.8%	27.6%	21.7%	16.5%
No	66.2%	72.4%	78.3%	83.5%
Location by tract				
Same tract	15.6%	11.8%	12.0%	2.4%
Next tract	46.9%	31.9%	9.9%	13.6%
Two tracts away	23.6%	24.3%	10.7%	21.8%
More than two tracts away	13.9%	32.0%	67.4%	62.2%
Number of observations	1,367	547	838	1,044

Table 3. Summary statistics for explanatory variables for weighted L.A.FANS Adult Sample

Variable	Mean or Percent
Sex	
Female	55.7%
Male	44.3%
Age	42.8 years
Age 55 years or older	
No	76.4%
Yes	23.6%
Race/Ethnicity	
White	39.6%
Black	6.0%
Latino	43.4%
Asian/Pacific Islander	10.0%
Other	1.0%
Education	
Less than high school	25.6%
High school grad or some college	52.2%
College degree	13.7%
Graduate school degree	8.5%
Recent immigrant	
No	92.8%
Yes	7.2%
Language of interview	
English	73.5%
Spanish	26.5%
Family earnings	$32,860
Time lived in neighborhood	52.3 months
Own children	
No	47.4%
Yes	52.6%
Has friends in neighborhood	
No	28.7%
Yes	71.3%
Has relatives in neighborhood	
No	69.1%
Yes	30.9%
Index of civic participation	0.747
Number of observations	2,459

Table 4. Ordered logit regression model of neighborhood definitions for weighted L.A.FANS Adult Sample

Variable	Model I		Model II	
Sex				
Female†	.	.	.	.
Male	0.071	(0.117)	0.097	(0.116)
Age (years)	0.006	(0.007)	0.007	(0.007)
Age 55 years or older				
No†	.	.	.	.
Yes	-0.331	(.238)	-0.331	(0.243)
Race/Ethnicity				
White†	.	.	.	.
Black	0.043	(0.290)	0.322	(0.316)
Latino	-0.236	(0.196)	-0.095	(0.238)
Asian/Pacific Islander	-0.500**	(0.240)	-0.420	(0.280)
Other	-0.180	(0.544)	-0.476	(0.660)
Education				
Less than high school†	.	.	.	.
High school grad or some college	0.369***	(0.133)	0.446***	(0.138)
College degree	0.465**	(0.214)	0.521**	(0.233)
Graduate school degree	0.860***	(0.208)	0.918***	(0.249)
Recent immigrant				
No†	.	.	.	.
Yes	-0.888***	(0.194)	-0.733***	(0.179)
Language of interview				
English†	.	.	.	.
Spanish	-0.236	(0.245)	-0.235	(0.263)
Log of family earnings (spline)				
Below mean	-0.061	(0.088)	-0.111	(0.096)
Above mean	0.283***	(0.114)	0.187	(0.133)
Time lived in neighborhood (months)	-0.003	(0.003)	-0.003	(0.002)
Own children				
No†	.	.	.	.
Yes	-0.030	(0.160)	-0.006	(0.164)
Has friends in neighborhood				
No†	.	.	.	.
Yes	0.215*	(0.120)	0.182	(0.131)
Has relatives in neighborhood				
No†	.	.	.	.
Yes	0.267**	(0.136)	0.313**	(0.161)
Index of civic participation	0.102**	(0.046)	0.081	(0.050)
Category cut points				
Cut 1	-0.725	(0.889)	-0.066	(1.039)
Cut 2	0.368	(0.901)	1.100	(1.055)
Cut 3	1.918	(0.905)	2.732	(1.066)
Tract-level fixed effects	No		Yes	
Model likelihood ratio test (df)	174.91***	(19)	106.02***	(19)
Likelihood ratio test of fixed effects (df)	.	.	90.49**	(64)

Note: *p<.10; **p<.05; ***p<.01; standard errors in parentheses; † omitted category; see text for description of dependent variable.
Source:Authors' calculations based on weighted data for 2,459 adults from L.A.FANS.

Table 5. Linear regression model of tract-level fixed effects

Variable	Estimate	
Tract area ($km^2/10^3$)	0.127*	(0.065)
Density (10^7 persons/ km^2)	0.691***	(0.163)
Limited English/Spanish proficient (percent)	-0.036***	(0.009)
Vacant households (percent)	0.057***	(0.018)
Crude mortality rate	0.051***	(0.018)
Teenage birth rate	-0.008***	(0.003)
Children under 5 (percent of total)	0.060**	(0.029)
Welfare recipients (percent of families)	-0.030*	(0.016)
Food stamp recipients (percent of families)	-0.166**	(0.063)
Unemployment assistance (percent)	0.078*	(0.044)
Number of social service providers	-0.091***	(0.017)
Service Planning Area		
Other	.	.
West	-0.640***	(0.240)
San Fernando	-0.614***	(0.172)
East	-0.422***	(0.158)
Constant	0.978***	(0.285)
Model F-statistic (df)	7.47***	(14, 50)
Adjusted R^2	0.5861	
Number of observations	65	

Note: *p<.10; **p<.05; ***p<.01; standard errors in parentheses.
Source:Authors' calculations.

Table 6. Linear regression models of distances to locations for weighted L.A.FANS Adult Sample

Variable	Grocery store		Place of worship		Place of work		Health care provider	
Age	0.017	0.011	0.014	0.026	0.059	0.058	0.017	0.036
Age 55 years or older								
No†	.	.	.	.	.	.	.	.
Yes	-0.386	0.357	-0.075	0.935	-1.891	2.449	-0.671	1.126
Race/Ethnicity								
White†	.	.	.	.	.	.	.	.
Black	0.259	0.386	5.010***	1.334	-0.068	2.543	0.724	1.184
Latino	1.263***	0.467	1.487	1.036	-0.926	1.512	1.876**	0.941
Asian/Pacific Islander	0.293	0.214	-.014	0.873	0.867	1.983	2.812*	1.473
Other	1.967	1.302	-2.795	4.396	0.825	2.622	-0.329	1.412
Education								
Less than high school†	.	.	.	.	.	.	.	.
High school or more	0.408	0.271	0.746	0.652	-0.070	1.209	0.210	0.633
Recent immigrant								
No†	.	.	.	.	.	.	.	.
Yes	-0.247	0.199	2.058	1.418	1.479	2.113	-1.270	1.026
Language of interview								
English†	.	.	.	.	.	.	.	.
Spanish	-0.634*	0.335	-0.384	0.902	1.691	1.407	-0.665	0.693
Log of family earnings	0.177***	0.059	-0.300	0.215	0.690	0.569	0.357	0.247
Time lived in neighborhood	-0.005*	0.003	-0.007	0.011	-0.037*	0.020	-0.030***	0.011
Constant	-1.151	0.961	4.777**	2.326	0.592	6.291	1.153	3.206
Tract-level fixed effects	Yes		Yes		Yes		Yes	
Model F-statistic	1.90** (11, 1260)		2.12** (11, 460)		0.68 (11, 829)		1.81** (11, 938)	
Adjusted R^2	0.3100		0.2384		0.1572		0.1620	
Number of observations	1,336		535		829		1,014	

Note: *p<.10; **p<.05; ***p<.01; standard errors in parentheses; † omitted category.

Source: Authors' calculations based on weighted data for adult respondents from L.A.FANS.

Table 7: Ordered logit models of categorical location for weighted L.A.FANS Adult Sample

Variable	Grocery store		Place of worship		Place of work		Health care provider	
Age	0.004	(0.007)	-0.033*	(0.018)	-0.017	(0.011)	-0.006	(0.012)
Age 55 years or older								
No†	.	.	.	.	.	.	.	.
Yes	-0.018	(0.311)	0.834	(0.629)	-0.022	(0.448)	0.048	(0.381)
Race/Ethnicity								
White†	.	.	.	.	.	.	.	.
Black	0.753**	(0.299)	1.222***	(0.443)	0.600	(0.547)	0.166	(0.402)
Latino	0.544*	(0.312)	-0.249	(0.429)	0.457	(0.321)	0.175	(0.261)
Asian/Pacific Islander	0.535	(0.362)	0.432	(0.383)	1.316***	(0.439)	1.115**	(0.436)
Other	1.254**	(0.583)	-0.441	(1.588)	-0.878**	(0.395)	1.104	(0.967)
Education								
Less than high school†	.	.	.	.	.	.	.	.
High school or more	0.413*	(0.239)	-0.020	(0.376)	-0.803**	(0.317)	0.133	(0.302)
Recent immigrant								
No†	.	.	.	.	.	.	.	.
Yes	0.168	(0.269)	1.012	(0.625)	0.132	(0.384)	-0.210	(0.362)
Language of interview								
English†	.	.	.	.	.	.	.	.
Spanish	-0.502*	(0.264)	-0.143	(0.401)	-0.454	(0.414)	-0.383	(0.271)
Log of family earnings	-0.003	(0.099)	0.015	(0.123)	0.282**	(0.119)	0.044	(0.096)
Time lived in neighborhood	-0.002	(0.003)	-0.005	(0.004)	-0.002	(0.005)	-0.002	(0.004)
Category cut points								
Cut 1	-1.547	(0.826)	-3.494	(1.226)	0.362	(1.330)	-3.556	(1.117)
Cut 2	0.706	(0.879)	-1.566	(1.147)	1.146	(1.348)	-1.551	(1.095)
Cut 3	2.054	(0.915)	-0.480	(1.171)	1.723	(1.331)	-0.348	(1.068)
Model χ^2-statistic (df)	30.74***	(11)	31.41***	(11)	54.47***	(11)	21.63**	(11)
Number of observations	1,336		535		829		1,014	

Note: *p<.10; **p<.05; ***p<.01; standard errors in parentheses; † omitted category.

Source:Authors' calculations based on weighted data for adult respondents from L.A.FANS.

Table 8. Linear probability models of locations for weighted L.A.FANS Adult Sample based on whether or not the location is within 15-minute walking distance of respondent's home

Variable	Grocery store		Place of worship		Place of work		Health care provider	
Age	0.001	(0.002)	0.002	(0.003)	-0.003	(0.002)	-0.002	(0.002)
Age 55 years or older								
No†	.	.	.	.	.	.	.	.
Yes	-0.061	(0.068)	-0.048	(0.121)	0.127	(0.084)	0.068	(0.061)
Race/Ethnicity								
White†	.	.	.	.	.	.	.	.
Black	-0.019	(0.072)	-0.079	(0.096)	-0.061	(0.085)	0.003	(0.101)
Latino	-0.011	(0.055)	-0.049	(0.085)	-0.049	(0.064)	-0.085*	(0.050)
Asian/Pacific Islander	-0.027	(0.057)	-0.064	(0.114)	-0.079	(0.070)	-0.040	(0.057)
Other	-0.017	(0.144)	-0.088	(0.075)	-0.116	(0.184)	-0.020	(0.093)
Education								
Less than high school								
High school or more†	0.002	(0.049)	-0.070	(0.071)	0.053	(0.045)	-0.034	(0.037)
Recent immigrant								
No†	.	.	.	.	.	.	.	.
Yes	0.058	(0.081)	-0.065	(0.115)	0.179*	(0.095)	0.044	(0.060)
Language of interview								
English†	.	.	.	.	.	.	.	.
Spanish	0.078	(0.061)	0.071	(0.082)	0.047	(0.057)	0.044	(0.039)
Log of family earnings	-0.057***	(0.018)	-0.012	(0.026)	-0.054***	(0.020)	-0.014	(0.015)
Time lived in neighborhood	-0.001	(0.001)	-0.001	(0.001)	0.001**	(0.001)	0.001	(0.001)
Constant	0.908***	(0.205)	0.408	(0.305)	0.778***	(0.215)	0.376**	(0.183)
Model F-statistic (df)	1.56	(11, 1259)	0.75	(11, 535)	1.93**	(11, 753)	1.01	(11, 937)
Number of observations	1,336		535		829		1,014	

Note: *p<.10; **p<.05; ***p<.01; standard errors in parentheses; † omitted category.
Source:Authors' calculations based on weighted data for adult respondents from L.A.FANS.

Figure 1. Census Tract Boundaries and Locations of Grocery Stores

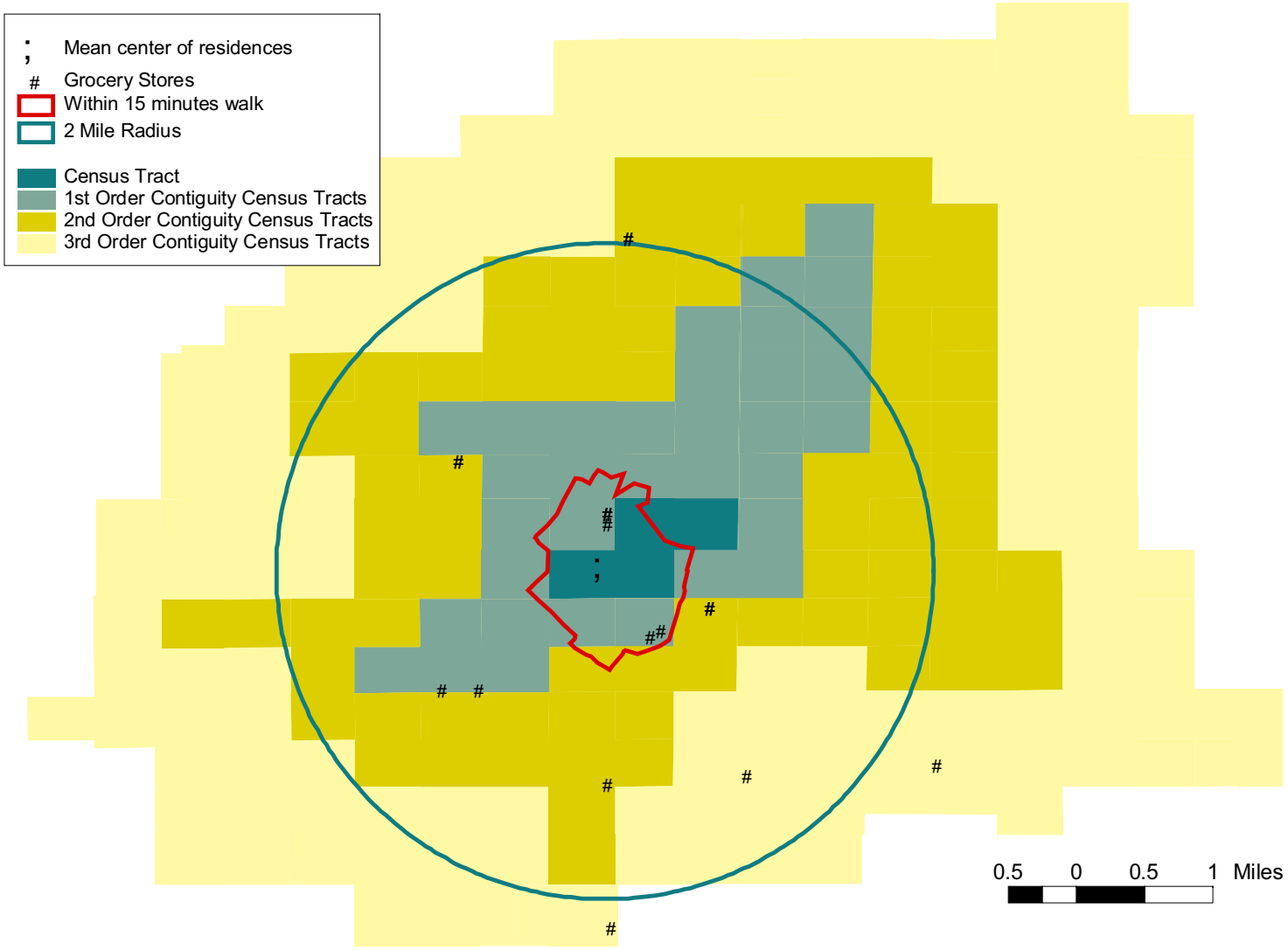

Figure 2. Census Tract Boundaries and Places of Worship

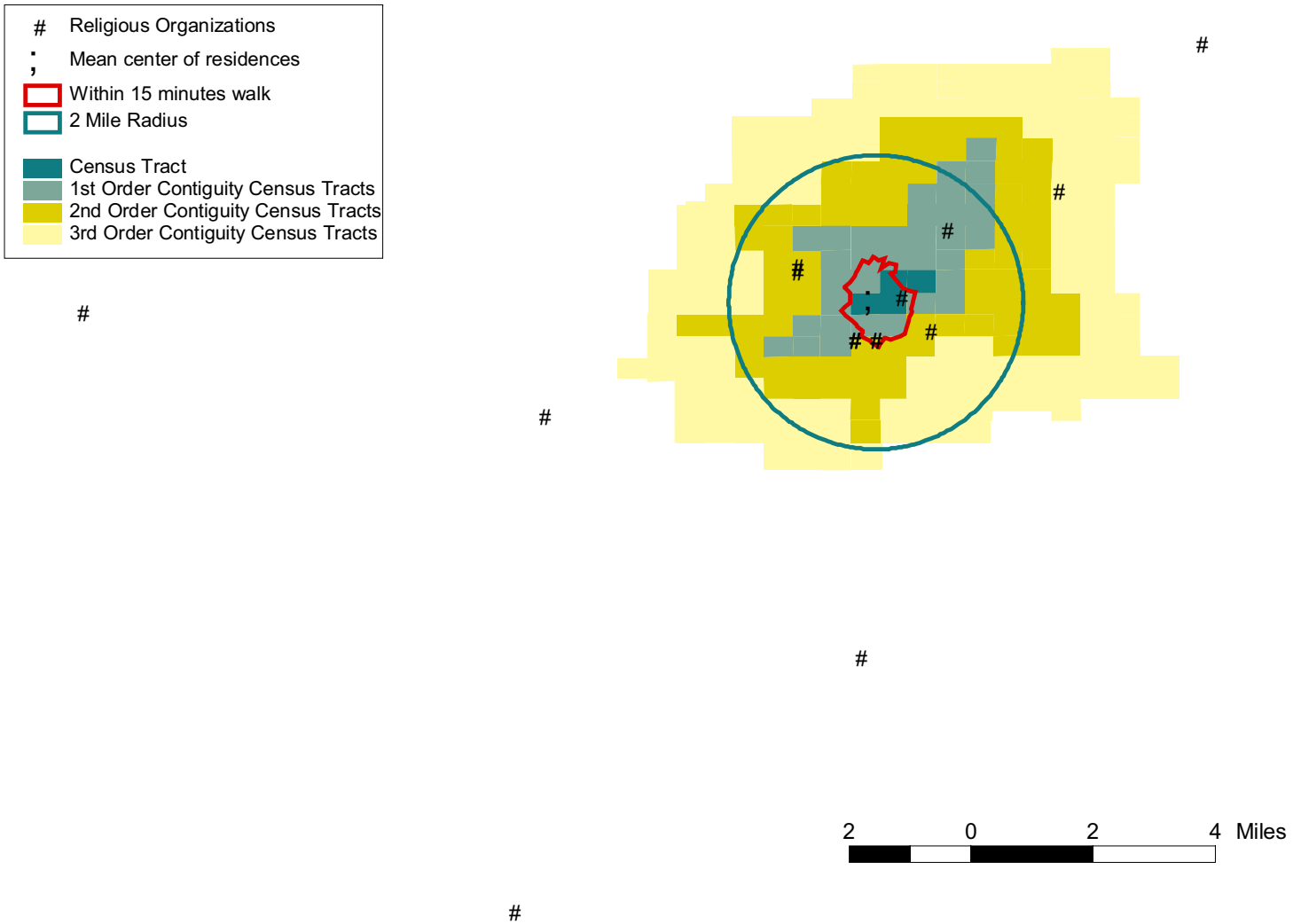

Figure 3. Census Tract Boundaries and Locations of Workplaces

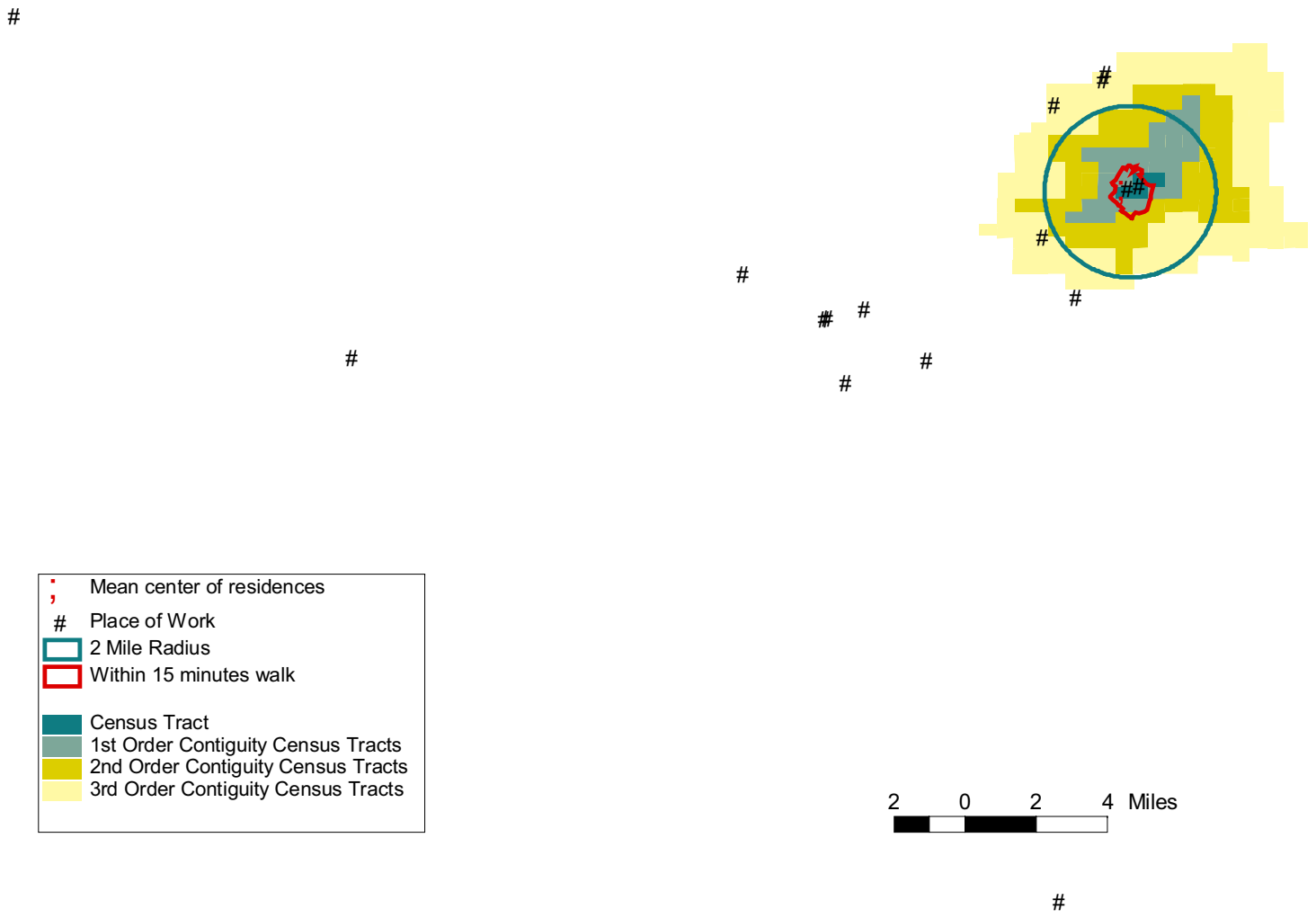

Figure 4. Census Tract Boundaries and Health Care Locations

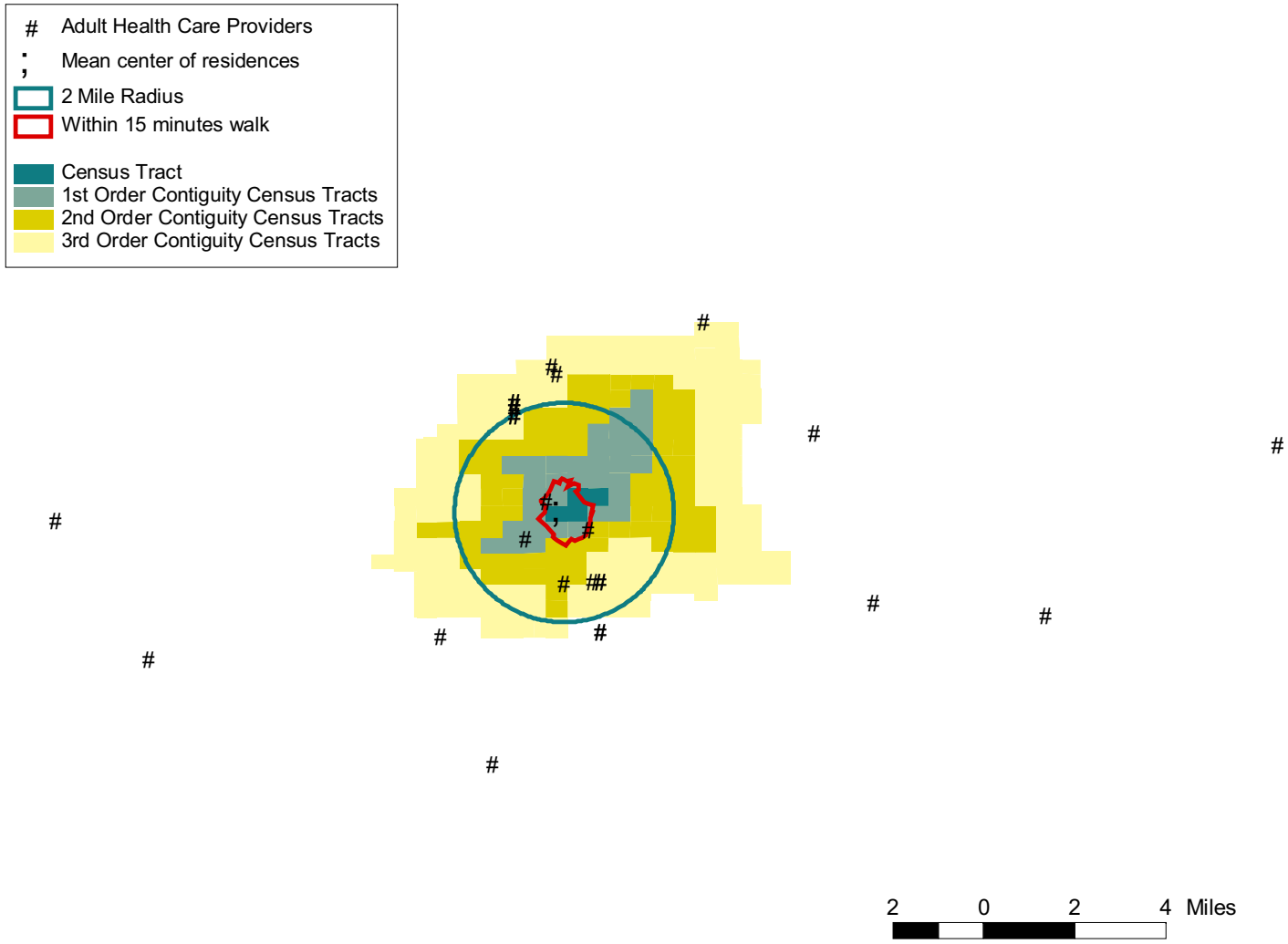

Figure 5. Service Planning Areas of Los Angeles County

Source: Los Angeles County Children's Planning Council, www.childpc.org.