# A reexamination of the neighborhood as a socio-spatial schema

# A Reexamination of the Neighborhood as a Socio-Spatial Schema*

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Lee's conception of the "socio-spatial schema" was reexamined for a sample of respondents from a British new town. Results showed that over half of the respondents differentiated their neighborhoods from smaller ''areas of belonging'' and that neither the neighborhood nor area of belonging corresponded well to ecological conceptions of a '' natural area.'' Discriminant analysis revealed that differences between respondents who provided one neighborhood versus those who distinguished a neighborhood from an area of belonging had empirical significance. These two groups were discriminated on the basis of four components of community satisfaction, that is, distance from the town center, proximity of friends, length of residence, and respondent age. Size of the neighborhood was found to be a function of the location of the neighborhood center and length of residence. Size of the area of belonging was related to length of residence and proximity of relatives. Results are discussed in relation to the socio-spatial methodology, the neighborhood concept, and differences between these findings and previous research, especially as related to the residential location of friends and relatives.

One of the key issues in the literature on environmental social psychology is people's perceptions of the neighborhoods in which they live. Urban imagery (Lynch, 1960), sociocultural ecology (Firey, 1937; Jonassen, 1949), environmental psychology (Proshansky, Ittleson, and Rivlin, 1970; Saarinen and Sell, 1980; Mercer, 1975; Barker, 1968; Craik, 1973), and perceptual geography (Gould and White, 1974) have employed a variety of methodologies to determine the extent of perception of both large- and small-scale locales. Currently, little is known about the possible variations in empirically derived, geographically relevant perceptions of residential locales or within-group variations in the meaning of the "neighborhood." In this paper the socio-spatial schema, a geographically based methodological approach to defining neighborhood areas developed by Terence Lee, will be further examined for generalizability and applicability in other settings.

Interest in the neighborhood concept has a long research history and cuts across many disciplinary boundaries, including sociology, psychology, geography, and urban planning. In the sociological literature, neighborhoods have been defined both as urban subunits based on similarity of macro-level characteristics and as social-psychologically defined units of space. The macro-level approach developed largely within human ecology. Classically, many neighborhoods were considered to be "natural areas"; that is, they were seen as areas defined by natural or other boundaries that contained a relatively homogeneous population and/or land use (see Burgess, 1926; Park and Burgess, 1929; Zorbaugh, 1929). In this same tradition, modern human ecologists often consider the neighborhood as a particular census tract or group of tracts defined according to similarity of function and population makeup. Social Area Analysis, for example, is often used to define urban neighborhoods (Shevky and Bell, 1955; Anderson and Bean, 1961); in the social area studies, similarity in the structure of census-based characteristics is used to define ''similar'' social areas. In this tradition, residents of the areas defined as sharing a set of characteristics may constitute a particular neighborhood.

In the micro approach to neighborhoods, social-psychological and perceptual data are used to define local areas. In this tradition, neighborhoods may be defined by perceptual similarity of population or land use (which is closest in form to the macro-level approach), by sentiment or symbolic attachment to a district (Jonassen, 1949; Firey, 1937; Bardo et al., 1981), by localized patterns of interaction (e.g., "neighboring" [Keller, 1968]), or by geographically relevant symbolic boundaries (Lynch, 1960; Lee, 1968; Michelson, 1976). In all instances, it is the perceptions of the people who interact in the local area that are most significant in defining the nature of the neighborhood.

The micro approach to neighborhood definition has received a great deal of attention in the social science literature with one general exception: few studies have attempted to use geographically relevant perceptual methodologies. Gans (1962, 1967), Young and Willmott (1957), Suttles (1968), Rainwater (1970), and Popenoe (1977) among many others have demonstrated the significance of local interaction patterns, social networks, and social structures, which all assume at least some geographically relevant properties, but few studies actually directly test the extent and definition of neighborhood as a concept. As has been shown for the concept "community," "few sociologists try to 'get inside people's heads' to see how residents make sense of the physical surroundings in which they live" (Stoneall, 1981:121).

One approach to geographically defining neighborhoods that has obtained some success was developed by Terence Lee and applied in a study of Cambridge, England (all respondents in this study were female). Lee devised a series of maps on which he asked respondents to '' please draw a line around the part which you consider acts as your neighbourhood or district'' (Lee, 1968). Lee found that the concept of neighborhood was extremely salient to the people and it was composed of complex social and physical interactions between the respondents and their environment (Lee, 1976). Lee found three types of neighborhoods: the social acquaintance neighborhood, the homogeneous neighborhood, and the unit neighborhood. These local areas varied in size, degree of intimacy, and population heterogeneity. In an attempt to compare the different conceptions of neighborhood, Lee defined an area within a half-mile radius of one respondent's house as her "locality." He then measured the number of components within the individual's neighborhood and the locality of which it was a part. (A component was defined as a shop or house, etc.) Lee found that the lower a person's socioeconomic status, the fewer components she included in her neighborhood compared to her locality. Second, women whose husbands worked in the locality included more elements in their neighborhood relative to the locality compared to women whose husbands worked elsewhere. Lee also found that the average size of a neighborhood was about one ·hundred acres and that population density had little effect on neighborhood size. Also, natives and working-class respondents tended to have relatively small neighborhoods. Finally, where social classes are mixed, neighborhood involvement tended to be somewhat greater.

In a partial test of Lee's approach, Henry and Cox (1970) used a socio-spatial methodology to evaluate neighborhood units in the Scottish new town of East Kilbride. They found that neighborhood unit boundaries (usually containing three hundred acres) were much too large and that respondents had personal neighborhoods. The Royal Commission on Local Government (1969) asked a national sample to define their home area using these instructions: "is there an area around here, where you are now living, which you would say you belong to and where you feel at home." In examining this literature, Lee concluded that "the findings confirmed the reality of diverse schemata, and showed most of them to be smaller than the currently existing local government areas" (1976: 135).

Lee (1976) concluded that personal neighborhoods exist but that the general literature is fragmented and incomplete. In this regard, an important question remains as to differences between neighborhood concepts and such ideas as the ''home range,'' which was identified by the Royal Commission on Local Government. It is possible that these concepts are synonymous or they may represent variations on the general neighborhood theme. It is also possible that a particular individual may define more than one neighborhood depending upon the frame of reference he or she is given. This possibility is suggested both by the work cited above and geographical concepts as laid out in symbolic interaction. Specifically, Feldman (1979) showed that people's geographical concepts are ''nested'' one within the other from most personal to most public. If this is the case, it is likely that any individual may provide a nesting of locality constructs depending upon the specific instruction given.

Also, Ericksen argued that the concept of neighborhood may vary among groups as well as among individuals. In his conception, the ''neighborhood'' is largely a reflection of socioeconomic conditions rather than a need for localized interactions:

> Physical conditions are manifestations of defined socioeconomic conditions. Thus, a good neighbor is not necessarily a friendly or a nice person but one who shares your standards of the neighbor role.... I am disposed to share the view of Suzanne Keller that the idea of neighborhood lies somewhere between kin and friend.... A neighborhood may be highly dramaturgical and less territorial or a close wedding of the two. Neighboring in the city is often quite elastic by reason of the constant rearrangement of obligations, cooperation, and shared experiences. Delineation of centers and boundaries will vary, as accountable things, from group to group, from person to person. The physical proximity only established the contact; it is less important in maintaining it. In this version, we make our urban neighborhoods out of problems to be faced. The vital associations of time and proximity are but restricting forces upon which neighborhood meanings are constructed. (1980:89)

If Ericksen is correct, neighborhood should take many meanings for various individuals depending upon the frame of reference and problems they solve within the area defined as the neighborhood. Lee (1968) has provided partial support for this position, but his research does not explore the possibility of respondents identifying more than one local neighborhood area as a reflection of more than one set of problems or locality-related needs (a possibility that symbolic interaction in general and Ericksen's work in particular raises). Thus, it is possible for respondents to have a conception of a ''neighborhood'' and, at the same time, define a "home range" that is meaningfully distinct. In this paper, possible variations in neighborhood constructs as defined by Lee and the '' home range'' concept of the Royal Commission on Local Government will be examined.

**Methods**

Data were collected in the British new town of Hemel Hempstead in 1981. Hemel Hempstead was established as a new town in the late 1940s and settlement began in the early 1950s; its current population is about 80,000. The new town residential areas were planned on the '' neighborhood unit'' concept with most neighborhoods containing schools, a neighborhood shopping and service center, and parks as well as a mix of apartments, row houses, and semidetached houses; in the British tradition, there were relatively few detached houses in most neighborhoods. A random sample of 550 community residents was administered a questionnaire containing a community satisfaction scale and personal data section. Usable responses were obtained from 412 residents. In addition to the questionnaire, 170 respondents from four of the planned unit neighborhoods were asked to provide mapped information concerning their neighborhoods.

Each respondent in this subsample was provided a map of the community and asked to locate his or her house. Then, the following directions were read:

> People sometimes have an idea or conception of the neighborhood in which they live which may or may not conform to the planning neighborhoods (like Adeyfield or Highfield) that have been formally designated. Please draw a line around the part which you consider acts as your neighborhood or district.
>
> Is there an area around here, where you are now living, which you would say you belong to and where you feel at home? Please draw a line around this area if it is different than the area already marked. It is not necessary to draw a second line.

The two sets of instructions were used to allow respondents to separate more diffuse and less personal conceptions of "neighborhood" from a more personal "home range" or, as it is called here, "area

of belonging." It was also recognized that respondents may distinguish more than one local area, so delineation of the separate '' area of belonging'' was left optional. Aside from neighborhood information, respondents were requested to place on the map the residential location of their children, parents, and friends, as well as the location of their own and their spouses' place of employment.

To analyze the map material, the linear distance between the individual's home and other defined locations was measured as an estimate of distance. Also, linear measures were taken of the distance to the town center and the local neighborhood center. It was also noted whether or not the neighborhood shops and service facilities and other marked locations were within the local area or areas enclosed by the respondent.

As has been reported elsewhere (Bardo and Bardo, forthcoming), the community satisfaction scale was found to be highly reliable (alpha = .89) and subdimensions were analyzed through factor analysis to oblique simple structure. A solution with eight interpretable factors resulted. Unit weighted factor indexes were then calculated for items with salient loadings on each factor. These indexes were interpreted as involving an index of alienation from generalized others in the community (Factor I), index of belongingness and homeiness (Factor II), political and other institutional responsibility (Factor III), community excitement or dullness (Factor IV), peacefulness and courteousness (Factor V), quality of the physical environment (Factor VI), individual and parental responsibility (Factor VII), and peer cynicism (Factor VIII). These factors and sociodemographic variables were used to determine patterns of differences related to the size of mapped areas as well as differences between respondents who provided on versus two mapped areas.

**Results**

Approximately 55 percent of the respondents defined their '' neighborhoods" as different from their "areas of belonging." However, figures used by respondents to designate these areas were consistently irregular. Boundaries were often congruent with street intersections and lines of communication, but the boundaries did not necessarily correspond to traditional conceptions of '' natural areas.'' Most respondents seemed to define their local areas in accordance with local demarcations, especially the presence of large streets and parks, but many were much less clear. (About one-third of the boundaries conformed to no clear demarcation.) The average maximum linear distance on either the north-south or east-west axes was about 1.38 miles for respondents identifying only one neighborhood and area of belonging. Where the neighborhood differed from the area of belonging, the neighborhood averaged 1.65 miles, while the area of belonging was much smaller, averaging .85 mile. Because the figures were so uneven in shape, it was difficult to judge the exact area covered; however, neighborhood areas averaged between one and two square miles and areas of belonging (when different from neighborhoods) averaged between one-third and about six-tenths of a square mile.

To examine the empirical significance of separating the area of belonging from the neighborhood, respondents were divided into two groups: those indicating one area (group one) and those indicating two (group two). This division was used with the eight community satisfaction indexes described previously in a stepwise discriminant analysis using Wilks' method; results are shown in Table 1.[1] Discriminant analysis revealed that four indexes differen-tiated between the groups, including the index of alienation (F1), peer cynicism (F8), feelings of belonging (F2), and perceptions of others taking responsibility (F7). The resulting Wilks' lambda was .88 ($p < .01$) and the canonical correlation of the function with the groups was .34. Approximately 64 percent of the cases were correctly classified by the function, including 63 percent of the group specifying one area and 65 percent of the group delineating two. In this instance, respondents whose neighborhoods and areas of belonging were the same were less alienated, more cynical, had higher belongingness scores, and were more positive about others taking responsibility than were people who indicated two areas.

Looking at ecological predictors of the differences between the two groups, only distance from the center of the town and the number of friends in the two areas discriminate (Wilks' lambda = .82, $p < .001$, canonical r = .42). Respondents who identified only one figure tend to live closer to the town center and to have fewer friends living locally. In this case, the classification functions correctly classified about 64 percent of the cases, including 80 percent of those respondents in group one and 56 percent in group two. The only two sociodemographic discriminators were length of residence and respondent age (Wilks' lambda = .93, $p < .05$, canonical r = .27). Older, longer-term residents tended to provide only one neighborhood/belongingness figure. The classification functions correctly placed respondents 59 percent of the time. Group one members were correctly identified in only 46 percent of the cases compared to 72 percent for group two.

To examine the properties of the two areas (neighborhood and belonging) and systematic variations between the size of the areas as related to sociodemographic and ecological variables, stepwise linear regression analyses were calculated. The size of the neighborhood (neisize) was best predicted by the location of the neighborhood center (loc.nei.cent.) and the length of residence (length of resid.). The relationships are defined by the standardized regression equation.

$$\text{neisize}' = -.34(\text{loc.nei.cent.}) + .32\ (\text{length of resid.})$$

The size of the neighborhood decreased when the neighborhood center was defined as part of the neighborhood and increased with the length of residence ($R = .46$, $p < .001$). The size of the area of belonging (belong), as with the neighborhood size, tended to increase with length of residence, but decreased with the number of relatives in the neighborhood area (rd. in nei.) ($R = .41$, $p < .001$).

$$\text{belong}' = .39(\text{length of resid.}) - .23(\text{rel. in nei.})$$

The magnitude of the differences between the area of belonging and the neighborhood appears to be a function of the proximity of significant social relationships; the difference increased with the number of both relatives and friends in the respondent's neighborhood ($R = .42$, $p < .001$.)

$$\text{diff}' = 30(\text{ rel. in nei.}) + .\ 26(\text{friends in nei.})$$

**Discussion**

The data support the efficacy of Lee's concept of the socio-spatial schema, but they suggest that his methodology, the meaning of neighborhood and area of belonging, and individual predictors of the size and differences in schematic presentations require revision. First, the majority of respondents of both sexes were able to define on a map of their town geographic areas that constituted their neighborhoods. These areas varied in size depending on length of residence, age, social relationships, and location, but they generally conformed to expectations from previous research. Especially significant is the fact that few of the neighborhood areas were as large as the planning neighborhood of which they were a part and that respondents' maps rarely crossed planner-defined neighborhood boundaries. Thus, while the planning neighborhood is significant in the lives of the residents, it is not the only consideration in defining local territories. They are the product of complex processes related to propinquity, interaction, and residential location.

Second, the correlates of size of the neighborhood and area of belonging are, themselves, of interest. Within each planning neighborhood is a "neighborhood center.'' This center is the location for local shops, meeting rooms, and service facilities. Where this neighborhood center was located within the respondent's defined neighborhoods, the size of that neighborhood tended to be relatively small. This suggests that some respondents are using these centers to provide social as well as service needs. (Note

that it was not the distance from the respondent's house to the center that was significant, but whether the respondent included the center within the perceived neighborhood.) This, coupled with the relationships between size of the area of belonging, propinquity, and location of relatives, suggests that there are several definitions of neighborhood being used by respondents: the neighborhood of interaction, neighborhood of belonging, neighborhood of local services, and neighborhood of support. All of these neighborhoods can be defined geographically, but they are not necessarily operationally equivalent. A neighborhood of interaction would be similar in concept to that which was found by Young and Willmott in East London: respondents interacted daily with close kin who resided in their local area. Thus, the neighborhood was the major source for sustained social relations. A neighborhood of support, while similar to a neighborhood of interaction in the significant others reside within its defined boundaries, does not require intense interaction. Having support-group members nearby may be important during times of strife or economic marginality, but in more prosperous times these relations may become burdensome. (This is discussed at length below. In this study, the tendency of respondents to delineate separate areas of belonging when relatives lived in the neighborhood suggests that this "neighborhood of support" was a prevalent concept.) Service neighborhoods do not necessarily entail local primary interactions outside the home; the individual's ties may be more diffuse and the neighborhood is used to meet daily needs such as shopping and educating children. As was suggested by Lee's research and Ericksen's theoretical statements, multiple neighborhood conceptions exist within a single population, but their specific form seems to vary with locale and local conditions as much as by respondent characteristics.

Examination of the correlates of size of neighborhood and area of belonging also suggests that certain traditional conceptions of the role of extended family and friends may require modification. In this case, respondents with the greatest numbers of'' significant others'' in their neighborhoods tended to define separate areas of belonging. In a sense, they seem to be separating and individuating their territory from that of others around them with whom they interact. Reasons for this result remain to be explored, but a likely explanation involves the roles played by significant others in daily life. A great deal of literature highlights the significance of interactions for satisfaction with the community (Young and Willmott, 1957; Bardo, 1977; Popenoe, 1977; Riger and Lavrakas, 1981); however, the gerontological literature suggests that under certain circumstances some significant others, especially family members, can become burdens (Dowd and LaRossa, 1980; Felton, Hinrichsen, and Tsemberis, 1980; Bell, 1976; Arling, 1976). That is, interaction with family and coping with family members' expectations can become problematic for the older person. In this study, residents of this new town were relatively well off. Although unemployment was appearing as a problem for the first time since it was settled as a new town, residents of the community nearly all had their own homes, unemployment was relatively low, and the vast majority of residents were employed in semiskilled and skilled occupations or in white-collar work (1971 census). For these people, location of friends and relatives may be important in their perceptions of life, but these interactions may also be a source of some conflict; family, and at times friends, can place demands on the individual that are not easily or willingly met. Also, in the nearly thirty years since the town was first settled, life had undoubtedly become routinized and institutionalized for most residents. In these cases, it may be familiarity with the local areas (i.e., propinquity) and day-to-day ways of living within the context of a relatively stable economic situation that lead to the feelings of belonging as much as interaction with family or a particular set of friends. (This situation would be expected to change under conditions of stress, such as during times of high unemployment or increasing economic marginality. The social support network may again become important.)

The data also show some differences from Lee's results concerning the significance of social class and location of employment. Here, length of residence and location of significant others were much more important than occupational status as a predictor of neighborhood size. Two explanations seem likely for this difference. Migrants to this community (who make up the vast majority of residents) resettled as

nuclear rather than extended family units. Because it was settled by individual nuclear families who were largely employed in the community, Hemel Hempstead may have a somewhat unique experience compared to other more traditional communities. There are few very poor and unskilled workers; overcrowding and substandard living conditions are almost nonexistent. Therefore, the problems generally associated with social class may not be so apparent in this community. Lack of very poor and unskilled workers coupled with the high and (until recently) very stable employment rate may be associated with a diminution of the usual social class-related variations.

A fourth issue of significance involves the procedures for determining a person's neighborhood using the socio-spatial schema approach. Here there were clear attitudinal differences between respondents who identified only one area versus those with two, and both sociodemographic and locational variables also systematically discriminated the two general neighborhood trends. This result suggests that the differentiation of neighborhoods from areas of belong-ing was not merely an artifact of the methodology employed. On the contrary, it suggests that delineation of only one neighborhood area may be more artifactual. Methodologically, then, it becomes imperative in future applications of the socio-spatial approach to explore the various procedures for eliciting multiple local areas that residents define as significant. In sum, the concept of the socio-spatial schema was supported as an empirically interesting procedure; however, it requires further theoretical and conceptual development and further validation.

**ENDNOTES**

[1]Stepwise discriminate analysis is a multivariate procedure that allows examination of known groups on one variable for differences on other variables (Tatsuoka, 1970). What results from such analysis is one or more linear functions that, generally, maximize the distance between the two groups (i.e., they maximize the "discrimination" between the group centroids). Stepwise discriminate analysis, like stepwise linear regression, allows inclusion of variables one at a time and examination of the effects of each variable as it enters the equation. Wilks' lambda is a statistic that examines the significance of matrices; the Wilks' method of discriminant analysis allows a variable to act as a discriminator only if Wilks' lambda is significant (that is, only if the variable significantly improves the discrimination). The quality of a solution in discriminant analysis is partly determined by the ability of the resulting function(s) to correctly classify respondents into their known groups. Because the classification functions in discriminate analysis are difficult to interpret, one or more standardized canonical functions are provided to aid in interpretation. Direction and strength of standardized loadings compared to group centroids provide indications of the specific nature of differences between the groups.

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