A STUDY OF SUBURBAN STREET FORMS IN RELATION TO SINGLE FAMILY NEIGHBORING: A GESTALT APPROACH

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Submitted to the Faculty of the Graduate College
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in partial fulfillment of the requirements
for the Degree of
DOCTOR OF PHILOSOPHY
May, 1974

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ACKNOWLEDGMENTS

This dissertation is dedicated to the urban planners of the United States who manipulate this American society with unfounded personal ideologies rather than scientific knowledge. It is hoped that the enclosed findings will partially make planners realize the worth of sociological research directed to urban planning.

I wish to thank the following individuals for their aid in making this dissertation possible.

To Dr. Gene Acuff, your willingness to admit an individual with little sociology has enabled me to extend my knowledge into areas previously unknown. The encouragement that you have exhibited for all my academic endeavors will be gratefully remembered.

To Drs. Richard Dodder and Donald Allen, the openness both of you have exhibited for furthering my knowledge in statistics and methods for this dissertation and other works will always be remembered. The time that you have spent with me has been generous and kind.

To Dr. Keith Harries, your personal direction in the areas of geographical philosophy and urban methodologies has been extremely helpful in my professional life as an urban planner.

To Dr. Ivan Chapman, you have enabled me to develop a critical approach to sociology which has encouraged my theory development in this dissertation. Special thanks is given to Christine Salmon for being an outside reader and reviewer for this document.

To Dr. Larry Perkins, I shall always consider you my master teacher. Words cannot express the wisdom that I have developed under your guidance. Your friendship and concerned direction have given me a more profound understanding of social life and myself. Thank you for the most meaningful times of my academic career.

I wish to thank my parents for instilling into me one ongoing value, honesty with oneself and others. No budding sociologist can survive in his endeavors without this human quality.

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CHAPTER I

NATURE OF THE PROBLEM

Introduction

This study places a different emphasis on the theoretical essay than on the statistical methodology. It must be emphasized that the theoretical section (Chapters II-V) is much broader than the actual empirical requirements warrant. It is hoped that subsequent research could verify other dimensions of the theoretical essay.

Defining the Problem

Within the urban planning discipline there have been recommendations that residential subdivision development should break away from the traditional linear street pattern within a grid system. Such suggestions were refined and integrated within Clarence Perry's conceptual neighborhood unit plan which encouraged the use of curvilinear and cul-de-sac streets.[1] Within recent years more emphasis has been placed on curvilinear and cul-de-sac streets with the latter lending to the concept of a neighborhood cluster.[2] Throughout the United States residential developers have been promoting such land forms as providing a better way of family living.[3] These new street forms do lend themselves to more economical solutions in that their form allows them to flow and be compatible with the topography. This freedom of manipulation reduces

road and site grading and increases the flexibility of water and sewer systems; therefore, a higher economic return on the housing development occurs.[4] Even though there are many allegations that the curvilinear and cul-de-sac street forms promote neighborhood familiarity and interaction, there has apparently been no thorough research in this area within the United States.

The more typical comments are oriented to popularity of the cul-de-sac street. Claims of more privacy, personal identity, pride and personal belonging and ease of orientation have been cited as the factors which give the cul-de-sac a special social character.[5] Such comments are derived from designers but little or no systematic research has been done to reinforce such thoughts. Practicing designers have apparently taken the neighborhood concepts of Perry and not seriously questioned his rational constructions.

Some study of street patterns has been done in England by a British sociologist, Peter Willmott.[6] The research of Willmott was in the city of Dagenham, England, including dormitory-type living units and two story houses. He particularly stated the following:

> When we interviewed people in Dagenham, we noticed a difference between different streets (and our impression was supported by the statistics about people's relationships with their fellows). In particular, the small 'cul-de-sacs' or 'courts,' and some other short, narrow streets, turned out to have more of a sense of community than other kinds of streets. In the wider and longer roads, we found fewer people who described their fellow-residents as friendly.[7]

Micro-neighborhood studies related to street patterns have been somewhat more prolific in the United States. Works by Deutsch and Collins in interracial housing were concerned with relative position with a neighborhood and not with street patterns.[8] Related work by

relative position within American suburbia has been done at a neighborhood level by Herbert Gans in his study of Levittown, New Jersey.[9] Whyte partially accounted for familiarity by relative position as well as informal neighborhood participation.[10] One of the more definitive works was done by Theodore Caplow and Robert Forman in Minneapolis, Minnesota in researching homogeneity in relation to social distance in student housing; also, sociograms were used to trace significant relationships to indicate neighborhood integration.[11] Festinger and Kuper have done similar works in group housing studying homogeneity and spatial arrangements.[12]

From the survey of literature it appears that research on street patterns for single family suburban homes has not been rigorous and is almost nonexistent. References to building orientations, such as the cul-de-sac, have been made in regard to multi-family building locations as determinants of social geography and not the layout of streets. After an extensive literature review no research was found which related to variations between street patterns which include cul-de-sac; curvilinear and linear streets. The following research will be focused on a consideration of these points.

The majority of sociological research is oriented to the understanding of social processes and structure without due consideration to the physical environment where such realities occur. Some social scientists might feel that such study is the area of concern for geography; however, geography is more typically involved with the macro-scale of the social world. The micro-scale which includes the realization of socially grounded interaction has been largely ignored by the geographer. While some sociologists have made research within this area, the

physical influences on social life are largely unknown at the micro-scale. The design oriented disciplines, such as interior design and architecture, have been historically involved in physical manipulation of space, but the scientific approach has been noticeably absent along with the consideration of the social bond that greatly concerns some sociologists.

Architectural and personal space coexist within a culture, but the realities of such space cannot be seen as being the same. If the design manipulators of a society alter the physical environment without a profound knowledge of the social processes, the ultimate result may lead to a spatial atmosphere which does not relate to the social community. The design disciplines consistently innovate forms for living and construct such spaces without adequate knowledge of the social consequences. There is a responsibility to investigate the effect of such spaces on human behavior.

An unspoken goal of the design disciplines is to provide a well designed environment for social living. The intent is positive, but without an investigation of constructed environments, the designer is subject to attack for ignorant manipulations even when he desires to displease no one. Spatial manipulations of American suburbia have been largely ignored, and recommendations to designers have not adequately considered the spatial tools that the designer is forced to work with.

Street manipulation is an obvious area of responsibility that the site designer is confronted with; he cannot ignore street layouts in his planned environments. The social results of street manipulations are not known to the designer. As mentioned previously, suggested street forms have come from ideological conceptual schemes; such

concepts can only be approved as design ideas without a true knowledge of environmental effects on social life.

The designer does not regard the social scientist as unneeded or unable to be of help, but the designer has had difficulty with the sociologist giving him scientific evidence which he can apply to his works. An architect not only wishes to understand sociology but also wants the ability to use social research in his day to day work. It is not uncommon for the designer to be frustrated with the sociologist. When the designer asks for the social implications of design solutions, the sociologist is usually unwilling to forecast social behavior without adequate data.[13]

Because of this situation, the designer has been forced to meet the building needs of American society without the aid of the sociologist. The sociologist is left behind in a position of helplessness.

The design professions need applied sociology along with the positive aspects of more traditional academic sociology. This researcher thinks that the designers have been more interested in sociology than sociologists in the design disciplines. It is the intent of this research to provide a more scientific understanding of a design tool that designers are forced to use in their day to day professional life.

In summary, the objective of this study is to gain greater insight regarding the effect of land development patterns on neighborhood familiarity and participation within single family residential areas in one suburban community. It is hoped that this research will have a practical and theoretical value to urban planners and designers in identifying the degree of worth in street pattern manipulations as a technique to influence social interaction within neighborhood areas.

The Organization of the Study

The study of the street forms is placed in perspective with other influences in suburban life. A holistic approach has been taken to show how the individual is affected in his use of space within the neighborhood. Street form space is only one aspect of space which might direct personal behavior. The theoretical discussion here is an attempt to trace the major influences within the neighborhood spatial environment. Figure 1 illustrates the sources of influence with the interrelationships between them.

The second chapter is directed to the conceptualization of neighborhood, neighbor and neighboring. These aspects are brought together in a holistic concept of gestalt neighborism. Social organization of neighboring is then discussed in regard to social circles and neighborhood organization. These two group forms are the primary sources of neighboring. The third chapter is a discussion on the various spatial levels of personal space and architectural territory. The fourth chapter is an explanation of how the designed neighboring spaces are controlled within and outside of the neighborhood. The fifth chapter is oriented to the implications of physical determinism in relation to the various socio-spatial sources which might affect behavior. In the sixth chapter, the statistical methodology is more restrictively oriented to the variable of street form types in order to provide specific knowledge of this designer's tool. Chapter seven is a description of limitations concerning the test results and the implications of these findings.

In conclusion, it must be emphasized that the researcher is

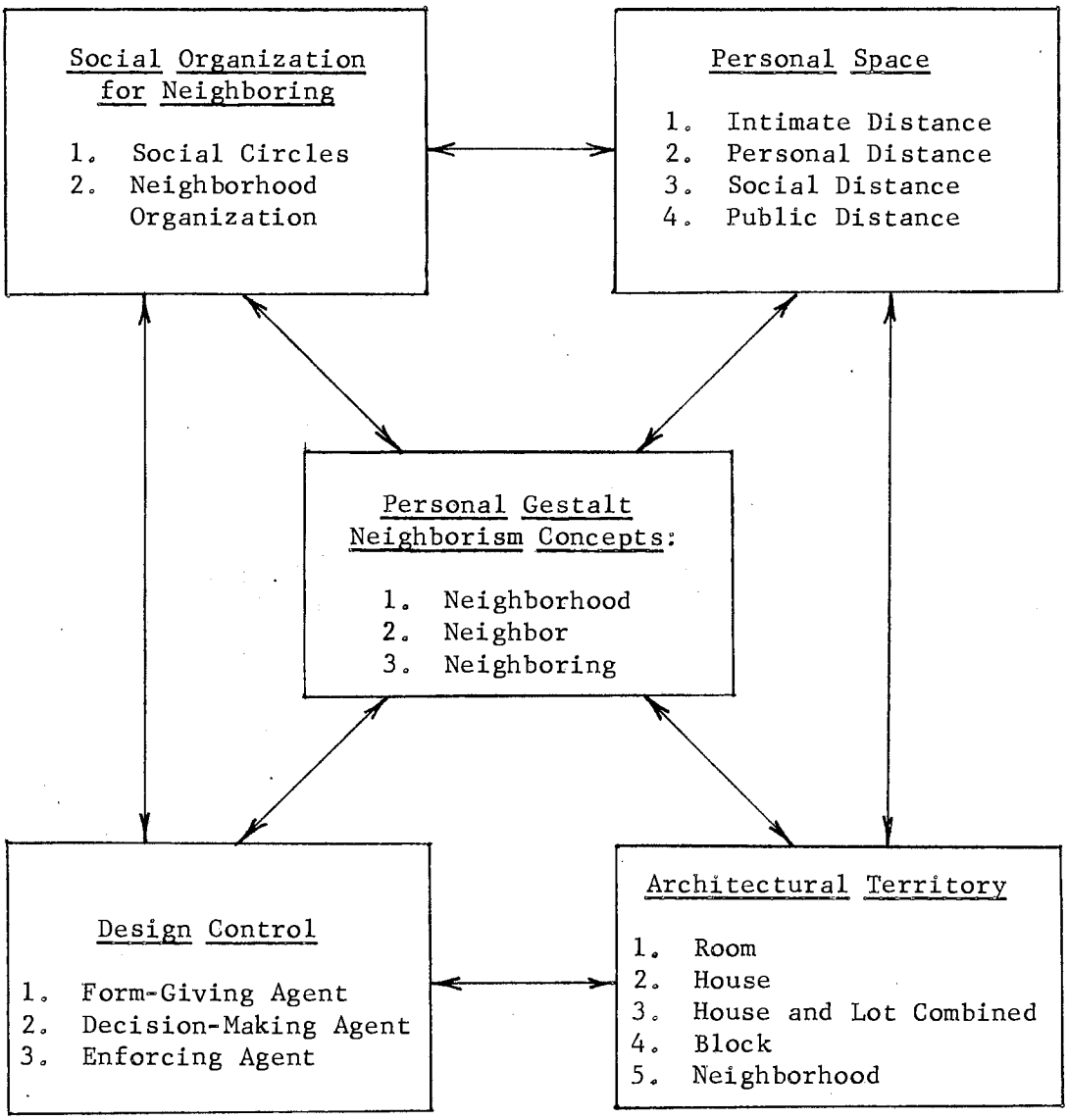

Figure 1. The Traced Influences Affecting Socio-Spatial Use Within the Neighborhood

reviewing theoretically the various levels of socio-spatial influences which may affect behavior, with street form types only being one part. Statistical testing is strictly limited to street form types with other control variables in relation to neighboring behavior.

FOOTNOTES

[1]Clarence A. Perry, "The Neighborhood Unit," Regional Survey of New York and Its Environs, VII (New York, 1929), pp. 22-140.

[2]Arthur B. Gallion and Simon Eisner, The Urban Pattern (Princeton, New Jersey, 1963), pp. 290.

[3]Richard F. Babcock, The Zoning Game (Madison, 1966), p. 47.

[4]Kevin Lynch, Site Planning (Cambridge, 1962), p. 42.

[5]Barry Smith, "Cul-de-Sac Means Safety, Privacy for Home Buyer," The Atlanta Journal and Constitution (Atlanta, January 14, 1973), Sec. H, p. 8.

[6]Peter Willmott, The Evolution of a Community (London, 1963).

[7]Peter Willmott and Edmund Cooney, "Community Planning and Sociological Research: A Problem of Collaboration," Journal of the American Institute of Planners, XXIX (1963), pp. 123.

[8]Morton Deutsch and Mary E. Collins, Inter-racial Housing: A Psychological Evaluation of a Social Experiment (Minneapolis, 1951).

[9]Herbert J. Gans, The Levittowners (New York, 1967).

[10]William H. Whyte, Jr., The Organization Man (New York, 1956).

[11]Theodore Caplow and Robert Forman, "Neighborhood Interaction in a Homogeneous Community," American Sociological Review, XV (1950), pp. 357-366.

[12]Leon Festinger, Stanley Schacter, and Kurt Back, Social Pressures in Informal Groups: A Study of Human Factors in Housing (New York, 1950), Leo Kuper, "Neighbor on the Hearth," Living in Towns (London, 1953), Chapter 2.

[13]Robert Gutman, "The Questions Architects Ask," In People and Buildings, edited by Robert Gutman (New York, 1972), p. 350.

CHAPTER II

SOCIAL ORGANIZATION

In order to gain an understanding of organization, the identification of differences between neighborhood, neighbor and neighboring is discussed. The conceptualization of these parts must be seen in perspective to each other, since none of the segments rests separately in social reality. The effect of the integrated whole is addressed in relation to the individual carrying such a social consciousness within himself. Group relationships of the family, social circle, neighborhood organization and situational relationships are viewed as recurring elements within single family development of American suburbia. The effects of internal and external forces which shape group behavior are also studied in relation to the neighbor's orientation.

Neighborhood

Webster's New World Dictionary defines neighborhood as the state or quality of being neighbors within a territory. Mumford is somewhat in conflict with this definition as he states: ". . . a neighborhood is not just a collection of buildings but a tissue of social relations and a cluster of warm personal sentiments . . . ."[1] Such a definition may be a more profound understanding of what neighborhood represents in social life. The rudiments of community are seen here, but the separation of neighborhood and community is somewhat ambiguous along with what

common folk define as their neighborhood. Abrams addresses himself to these problems as follows:

> There is no clear line between a neighborhood and a community. Sociologists, however, say a community has a social conscious population working together as a body to meet its common needs and objectives. Often the term 'neighborhood' is used to mean nothing more than the geographic area within which residents conveniently share the common services and facilities in the vicinity of their dwellings.[2]

As a social organization, neighborhood can be seen as the cumulative and integrative result of other social units. Wood refers to the neighborhood as "the family of families."[3] Such an analogy does have faults, for family structures may not be fairly equated with neighborhood structure. The family is a financially self-supportive unit in suburbia while there may be no economic structure at the neighborhood level.

The above explanations are oriented to the internal aspects of neighborhood, but such approaches are partially limited. Keller relates the definitive factors separating neighborhoods from one another in the following manner:

> Ideally, residents of different neighborhoods are marked by a particular pattern of life - the subculture of their district whose norms will reflect the type of terrain occupied, the dominant type of land useage, the social traditions, and the general socioeconomic structure of the area.[4]

Neighborhood may achieve a single general definition through symbolic interaction.[5] Persons within a locale may interact and develop a group definition for what they feel is neighborhood. Such a group definition on an informal basis may occur within the family or through some localized forms of group participation, informal or formal.

In Keller's definition a mention was made of physical features. Natural and man-made barriers, such as streams, hills, major streets and

nonresidential land uses, may play a part in the physical delineation of neighborhood. Such physical aspects tend to simplify definition in comparison to social meanings. Social conditions are highly variable; while physical properties are largely stable.

Size does not seem to be a definitive variable in regard to neighborhood. In Riemer's studies there appears to be a great amount of variation of opinion on neighborhood block size that neighbors identify with.[6] In England, Glass found that there seems to be a great deal of variation in the population which people include within their neighborhood.[7] Size appears to be only important to the degree one wishes to define neighborhood as related to special functions, such as schools.

Neighborhood can also be defined legally so that certain controls and activities may be carried on with efficiency. Neighborhood covenants can be used to physically control certain indigenous residential areas. School districts are used to distribute children in neighborhood schools, especially at the elementary level. Political precincts may define group similarity for effective citizen participation at the town level. Federal grants may use neighborhood boundaries for the distribution of funds for particular improvements in these designated areas. None or some of these boundaries may be congruent, but such delineations do help in carrying on particular functions. These boundaries may be formed by the social group within the area, but it is not unusual for such territorial definitions to be formed outside of the neighborhood.

At this point no attempt has been made to define neighborhood in relation to the overall city. Urban systems are greater than the neighborhood itself. Mann clarifies the neighborhood in relation to the city

along with the village as he states:

> The urban neighborhood is not an entity in itself, as is the village, it is merely a part, and a part difficult to define at that, of the whole city . . . the neighborhood is only a 'some functions' unit as contrasted with the 'all function' of the village . . . .[8]

A neighborhood can be an integral part of larger city functions. These activities cannot work without the neighborhoods and vice versa.

Burgess has defined the neighborhood as being the resultant of determining influences which are ecological forces, cultural forces and political forces.[9] He sees the ecological forces having to do with the process of competition and the consequent distribution and segregation by residence and occupation.[10] He implies the ability of American suburbanites to protect their vested interests and insure a degree of social homogeneity. His explanation of cultural forces is that the social heritage of the group implies a locality which is indigeneous and constant rather than a changing social situation.[11] He defines the political forces as having to do with: (1) "the formal control of public opinion"; and (2) "neighborhood work concerned with political forces whenever social action is desired."[12] Burgess appears to feel that neighborhood is a cluster of transactional forces between man and his environment.

Terrence Lee researched individual opinions on the interpretation of the physical schema of their neighborhood. He found that persons differed in their perceptions of neighborhood with other neighbors.[13] He developed three typologies of neighborhood based on general impressions.[14] The first was the social acquaintance neighborhood in which boundaries are formed by social interaction. The second type is the homogeneous neighborhood with boundaries being the result of social

working class. The last is identified as the unit neighborhood, with the boundaries of this type fitting quite closely to the city planner's conception of neighborhood.

The unit neighborhood is larger than the other two types in area and contains a balanced range of amenities such as shops, schools, churches, clubs, etc. The quality of Lee's typologies lies within the fact that individuals display various perspectives and definitions of neighborhood.

In Shevky and Bell's analysis of San Francisco these social scientists demographically and geographically defined "sub area," which may be somewhat equated with neighborhoods by homogeneity. Their basis for doing so was stated as follows:

> . . . the social area generally contains persons having the same level of living, the same way of life, and the same ethnic background; and we hypothesize that persons living in a particular type of social area would systematically differ with respect to characteristic attitudes and behaviors from persons living in another type of social area.[15]

In concluding the discussion of neighborhood, the identification of this entity will always be somewhat ambiguous. It is not that neighborhood is not definitive, but the term is multi-definitional depending on the perspective one takes. For sociologists such a condition may be confusing and messy for theoretical discussion, but this state of affairs can be accepted and worked with in order to gain a better understanding of social reality in the neighborhood. In the statistical analysis of this study, the researcher defined neighborhood by using major arterial streets as neighborhood boundaries.

Neighbor

To say that one is a neighbor, an individual may ask, in relation to what? Webster's New World Dictionary defines neighbor as "a person who lives near another." As a person identifies himself as a neighbor, he assumes that other people are involved. At the same time a person can begin to understand how a resident is excluded from being a neighbor. Territory, social process and the quality of human relationship largely determine one's self definition in how a person relates in day to day life. The researcher has identified four neighbor types which seem to occur in the residential environment. These types are: (1) social neighbor; (2) nonsocial neighbor; (3) social non-neighbor; and (4) nonsocial non-neighbor.

The social neighbor represents an individual who engages in social interaction within a given neighborhood unit. Such a person also has an element of close physical proximity which allows a social bond to form. This interaction relationship may be positive, largely neutral or negative.

The social neighbor can most easily be visualized as the person living next door. The borrowing-lending and giving-receiving relationships help support the degree and quality of interaction which a person has with his neighbor. A household may be quite friendly with the adjacent household; however, it is just as possible to be discontented. The association which one may have with a neighbor will be based on positive friendship built between the two.

The nonsocial neighbor can be physically defined as being adjacent enough to your household to be considered in your neighborhood without

a social relationship having come into existence. Friendship is in a neutral position in that no interaction has taken place to form a social bond. Keller has related to this neighbor type as the "proximate stranger."[16] This type of neighbor is seen as the household down the street which one does not know. He is just there and fills social space which gives him some status and most certainly physical position. The potentiality of this person becoming a social neighbor is always present as long as he resides within the defined neighborhood.

The social non-neighbor has social interaction with a person in a given neighborhood, but he does not reside within the residential territory. The interaction relationship characteristics of positive, neutral and negative are present in that a social bond of varying degrees has been formed. For the husband such an individual could be a business associate who lives in another area of town. For a child a school mate bussed across from some other area is also applicable here.

The nonsocial non-neighbor is that individual in which no social interaction or physical adjacency are in existence. This person is beyond one's personal social community. He may reside within or outside of a person's physical community. Human beings are acknowledged as existing beyond one's personal knowledge, but an individual is not directly influenced by such people. There are real limits to such a definition, because pragmatically a person may know the face and name of the town mayor without having a social relationship. One can contend a state of the social is present, but the effect in comparison to face to face interaction is negligible. The importance of the nonsocial non-neighbor can be felt through the result of secondary relationship, such as bureaucratic authority.

Of the four identifications made here, only social neighbor and nonsocial neighbor are classified as neighbor, but the social non-neighbor and nonsocial non-neighbor are also important. An individual does not totally live within one physical-social realm. The social processes may be very personal or only casual within and outside of that residential environment. In the qualitative aspects of neighbor, good or bad neighbor is not dependent on how friendly a person is. Instead, the degree one conforms to the standards of the neighbor role is what common consent acknowledges.[17]

In his review of the neighbor, Tonnies distinguishes the differences between friend, kin and neighbor. A friend is conditioned by congruency of work and intellectual attitude.[18] Proximity is necessary for the neighbor to exist through the contact and development of knowledge between two human beings. Neighbor is a personal or traditional relation which is established through collective ownership of land.[19] Kin is also personal or traditional in nature, but it signifies a common relation and sharing with human beings themselves, somewhat independent of location.[20] Keller supports Tonnies analysis in the following comment:

> Neighbors differ from both relatives and friends, however, in that physical distance does not destroy these relationships whereas a neighbor by definition, ceases to exist as a neighbor once spatial distance intervenes.[21]

Though without specific reference to the neighbor, Merton describes the reference group as being a frame of reference for self evaluation and attitude formation.[22] The neighbor role can be seen in this light in that a person may act somewhat in accordance with the individuals in his neighborhood. Kelly identifies two divisions of reference group

being the normative type and comparison type.[23] In the normative reference group, a neighbor will comply with the social standards of his neighbors. The comparison reference group outlook is operative when an individual judges his status and position with other neighbors. The comparison model can also be seen in Mead's "generalized other" as a person reflects the attitudes of others to himself.[24]

Keller explains the neighbor as having a role as a "helper in times of need who is expected to step in when other resources fail."[25] Merton states that with a social status, such as the neighbor, an individual is not contained within one role; instead, he has an array of associated roles which Merton refers to as a "role set."[26] To put role and status into motion, an individual will have time sequences in relation to his sets.[27] An example would be when a family member leaves the neighborhood, gets married and establishes his own family in another residential setting.

In conclusion, being a neighbor is only one portion of an individual's personal "definition of the situation" as described by Thomas.[28] This situation is defined through the physical environment of natural and man-made features and by the social conditions of process and structure one sees as pertaining to himself. The degree in which a person accepts the role of neighbor is variable to the extent to which he relates its importance to his other roles.

Neighboring

Neighboring is the social process in which proximate residential dwellers interact with each other. This differs from neighborhood in that the neighborhood represents the social setting rather than the

social action and interaction. Neighbor represents the actor in the setting, but being an actor is not social interaction but only the human organ of such process. In differentiating between two types of neighbor, the social and nonsocial, only the social neighbor is considered as being involved with the act of neighboring. The close proximity of a neighbor does not mean that social interaction is taking place.

Theoretical works on the neighboring act specifically have been sketchy with the exception of Keller's contribution in The Urban Neighborhood. The scholarly works in this subject area have come under the concept of neighborhood rather than the implications of process itself; structure and group characteristics have been the overtone from this researcher's observations. A possible reason for this is that neighbor and neighboring are largely inseparable. When one is neighboring, he is a neighbor. Such an explanation may seem too simple. The involvement of sociologists with structure in recent years has somewhat overshadowed process and the concern for it.

The three main functions of the neighboring process are informing, exchanging and enforcing. Informing is the passing of knowledge to another for fulfilling a particular need or want. Such informing may be directed to helping or damaging another individual. When a mother seeks to find certain sewing techniques from another housewife on her street, she is being informed in a beneficial manner. Informing another person about the death of a fellow neighbor is another example of knowledge passage. Keller refers to such continued passages as "gossip chains."[29] While these chains may be positively oriented, a more negative character may also take place. An example is the gossiping about children thought to be neighborhood "brats." Such "underground"

conversation tends to support some forms of contact while eliminating others.

Exchanging is used by individuals to support each other, and by doing so, they exercise a degree of mutual control. Keller refers to exchanging more specifically as "reciprocity social control."[30] Normally one sees this process in the form of the borrow-lending and giving-receiving relationships.

If a person borrows a lawn mower, he accumulates a social debt which is owed to the owner. In time he may lend the owner some implement which will allow him to pay his due. In the acts of helping one another, a norm has been formed between the neighbors in this reciprocity. They feel that they will have the opportunity to lend and borrow items within certain thresholds. Whereas borrowing and lending implies a tangible form, the giving-receiving relationship encompasses both tangible and intangible reciprocities. The intangible exchanges are wholly social. A neighbor may give or receive advice to or from another neighbor while he may also give or receive some gift to or from a neighbor as a token of friendship. Lending is part of a social act. The object that is loaned involves the actors in a sociological and psychological relationship. A person does not lend his social process; he gives it. The borrowing-lending relationship is not totally social, because the person does not fully give or receive. The borrowing-lending act has a secondary contract agreement which is less social than the person who gives or receives without particular restraints.

Enforcing in relation to neighboring is the developing and maintaining of norms which reflect the beliefs and behavior of those defined within the neighborhood. Social control can be seen in the moral

judgment of neighboring acts. Enforcing as a neighbor process can be normally identified as a person giving a warning, hint, advice, compliment or encouraging word to another neighbor without a previous social suggestion. The same enforcement mechanisms may be used also after an act has taken place. The use of these mechanisms in the pre-act stage can be seen as preventive or preparatory action. The post-act stage is interpreted as corrective or congratulatory.

Litwak notes that a distinguishing factor of neighboring is face to face contact, and with this condition there are some advantages.[31] The first of these is speed of reaction. This encompasses actions which are easy to deal with from person to person rather than mechanical means.[32] The second advantage is that persons living in the same area have the same problems with services and cooperate to solve them.

The forms of neighboring have been mentioned, but the qualitative aspects of neighboring merit attention. Relations may be formal and informal in character depending on the situation of neighboring, such as a dinner party, or when neighbors do not know each other well. Conversation may tend to be conservative. Informality usually occurs with greater familiarity. Formality may melt into informality as the social bond is formed over time. However, there are instances when the informality may be transformed to formality. This situation is seen when two individuals are placed in a formal setting. Also, two familiar people may be in conflict with each other for a period of time. Even with the qualitative aspects of formality and informality, there is a qualitative character concerning the range of these two qualities which is intensity. Intensity largely depends on the social setting and the particular neighbor involved. A good example of intensity and informality is the

degree of friendship which neighbors have with each other. The informality that two neighboring housewives will have can vary. Their conversation behavior in the household kitchen will be different than how they may interact with each other at a formal tea.

Another element which is essential and dynamic in relation to the social process of neighboring is change. Keller identifies specific types regarding neighboring as she states:

> The social exchanges affecting the amount and kind of change may be divided into three kinds: (1) general changes in values and institutions; (2) changes in the manner of life for individuals and groups - due to residential and social mobility; and (3) changes through time - both for individuals and for new communities.[33]

The first type can be seen as a change in the family, such as a death. The death reorders the group and values which in effect changes the neighboring process. The second type is seen through a household gaining more financial affluence. The family is able to buy good furniture for the lesser furnished rooms in the house. Another example would be when a family moves from one neighborhood to another. Their previous status is lost, and a new status must be achieved. With the third type a person will change values in time as specific events affect his life and as he grows older. The term, "new communities," is exemplified by the new physical development of a neighborhood. Neighboring brings forth the feeling of community while also changing its individual members.

Neighboring is the "breath of life" which activates the neighbor role and setting of neighborhood. Without the neighboring process the other two elements are dead forms, and the social condition cannot be maintained or changed. While neighboring and neighbor may be partially

defined in tangible terms, neighboring cannot, but it is this intangible that makes a person and setting meaningful. The symbolic interaction with another neighbor defines oneself as a neighbor and sets geographical limits to his neighborhood.

Gestalt Neighborism

Neighboring is the social process by which residential dwellers have interaction with each other. Their position is that of neighbor in a territorial setting identified as neighborhood. In the context of process, structure and territory are difficult to separate in social reality. If one speaks solely about one of these three elements, the social conditioning of reality has been distorted. The mentioning of any one of these elements makes it difficult for any balance to occur. Systematic division allows one to have a mental picture of a part, but a part related to the whole or the summation of parts does not reflect the social reality of the whole.

In his discussion of particularism Mannheim deals with this problem when he comments:

> . . . The relational process tends to become a particularizing process, for one does not merely relate the assertion to a standpoint but, in doing so, restricts its claims to validity which at first was absolute to a narrower scope.[34]

Martindale discusses how Kant avoided the problem of particularization through the interrelation of form and content.[35] Form is the in-the-mind analysis with content being the realities of the outside world. The identification of knowledge is acquired through phenomena, the experience with the outside world. Phenomena is the mechanism of interrelationship. The New World Dictionary describes gestalt as being

related to the holistic qualities of experience that are separate from the segments or sum of the parts of an experience.

In 1890 Christian von Ehrenfels introduced the idea of gestalt as form, shape or structure.[36] Wolfgang Kohler related the gestalt approach more directly to behavior. His concern for the systematic approach of identifying parts in social process is expressed as follows:

> While a sensation is supposed to occupy its place in the field independently, i.e., determined by its local stimulus alone, the curious thing about the qualities . . . is their relation to sets of stimuli. Nothing like them is ever brought about by strictly local stimulation per se; rather, the 'togetherness' of several stimuli is the condition which has these specific effects in a sensory field.[37]

Kohler's thoughts on togetherness might be falsely interpreted as a degree of homogeneity, but homogeneity represents somewhat a method of classification which he does not attempt to imply. Such an interpretation would eliminate social process from his gestalt viewpoint. He clarifies this matter by saying:

> The ways of actual life do not coincide with those of neat enumeration and classification. If we bring together the members of one class, we are likely to cut in the process the live bonds of dynamic interrelations.[38]

The gestalt outlook cannot be confused with generalization, for such an attempt slices away behavioral particulars which may be decentralized portions of the whole. If such endeavors of this nature are taken, the gestalt is lost, and conceptual wholeness cannot exist or be used to relate such a wholeness when needed in theoretical works.[39] The gestalt approach does not attempt to select examples, to trim or to discard elements of behavior and setting. To be selective, whether randomly or nonrandomly, only brings forth a partial understanding, not a whole.

The formation of a gestalt understanding with neighborhood-neighbor-neighboring is not without precedence in theoretical sociology. The latter half of the nineteenth century and the early portion of the twentieth century was a time in which some sociologists developed works which are related to a holistic view. In The Division of Labor in Society, Durkheim develops the concept of "organic solidarity." He points to the contrary forces of individual versus collective conscience. His thoughts allow for the social dynamics in a gestalt approach to occur. He encompasses these social forces as follows:

> Solidarity which comes from likenesses is at its maximum when the collective conscience completely envelops our whole conscience and coincides in all with it. But, at that moment, our individuality is nil. It can be born only if the community takes smaller toll of us.[40]

The importance of this statement is profound in regards to a gestalt way of thinking. The collective and individual are both socially present. A complete collective and a complete individual are beyond social thresholds. The effect of simultaneous presence allows for a socially grounded conflict with a gestalt approach. Individual and collective self may work in balance and conflict. The relationship of this concept is that the potential conflict is internal to social gestalt, not outside of it.

The potential harmony of whole is reflected in the works of Frank H. Giddings in the school of pluralistic behaviorism with his concept of "consciousness of kind." He clarifies his point in the following manner: "Combining with and supplementing like-response to stimulation, the concerted consciousness of kind converts a merely instinctive cooperation into concerted action."[41]

The movement of gestalt thought through time is presented here

allowing the gestalt to be something other than a static whole. The processes of conflict and harmony in a collective give life to a gestalt approach, creating more than simply a dead body of words. If time is considered here, a gestalt must not only consider the present for social reality but also the past. Halbwach's work in community consciousness has led him to the concept of "social heritage."[42] The social heritage is what remains to be carried forward in a collective experience in the same place, evolving into an acquisition of a "collective memory."

As mentioned previously a concentration solely on neighborhood or neighbor or neighboring creates an imbalance with the other two. At the moment there is not an identity for neighborhood-neighboring-neighbor which represents the whole. In the present study the concept of wholeness will be defined as gestalt neighborism.

Gestalt neighborism includes all received and given symbols by an individual which he identifies with his neighborhood, his personal identification as a neighbor and his acknowledgment of his neighboring processes. From this, one can conclude that the whole is based on self. The degree in which a person has gestalt neighborism is dependent on the individual's presence of being as he experiences the whole in time and space. This gestalt is not static; gestalt neighborism of neighborhood grows and develops shape over time. Also, it loses continuity as a person is unable to realize his experiences both past and present.

Gestalt neighborism reaches essentially two types of wholes which are: (1) socially grounded; and (2) ideal. An individual has as many gestalt neighborisms as the number of neighborhoods he has resided in. It is possible for a person to carry symbolically more than one such gestalt. An example would be when someone moves from one area to

another. His gestalt neighborism of the former neighborhood has largely ceased to grow due to a lack of day to day experiences. Extended relationships can somewhat refurbish one's personal gestalt. Another gestalt neighborism is in the early stages of development in his new neighborhood. If an individual experiences a great amount of physical mobility, his gestalt neighborisms exist separately. His content is less than one who has experienced only one gestalt neighborism. What the geographically static person lacks in his single gestalt, he makes up for in development and experience. His ability to conceive the whole neighborism is greater than that of the migrant.

As mentioned previously, conflict can occur within a gestalt by the differences between the individual and the collective, but outside conflict is mainly associated with the migrant. He may experience differences between his separate gestalt neighborisms. Such relationships are important as one attempts to form an ideal type of gestalt neighborism which would be more commonly known as an utopia. A conflict is formed here between socially grounded gestalt neighborisms and the utopia since the ideal is beyond social reality. The reality of the ideal gestalt lies within psychological hope, but not the actual social experience of the desired social setting. An individual with only one gestalt neighborism may have less difficulty than the migrant matching ideal and socially grounded gestalts. With the greater number of possible conflicts between gestalt neighborisms, the migrant must battle with these differences before reaching the desired gestalt of his utopia.

The methodologist can pose a serious question to this researcher on how one captures the gestalt for the furtherance of knowledge. Once

a social scientist systematically attempts to find parts to a gestalt, he has destroyed it. Statistical approaches and systems analysis are not possible alternatives. At this point even words are enemies rather than guides to understanding the gestalt. As the reader concentrates on phrases, he is forced into segmental thought. If one can release himself somewhat from this limitation and open himself to the overtone of the statements, he can begin to deal with the gestalt. Methodology for gestalt neighborism is gained through ethnographies, participant observation and a mental state of trying to sense the whole; indirect analysis can only capture segments not the whole of experience. The limitation of a gestalt approach is the inability to use data for hypotheses testing.

In sociology there is most often the immediate focus on particulars without consideration of the whole. Street forms are within a gestalt wholeness, and not to recognize such a reality may be an avoidance of scientific responsibility.

The variety of discussion within this dissertation represents an attempt to reach a gestalt even though the researcher must deal with specifics. Lewin personally believed that through his gestalt field theory it was advantageous to start with the characterization of the situation as a whole; he then proceeded to give a more specific, detailed analysis of the various aspects and parts.[43]

The full development of a theory on gestalt neighborism is not intended here, only the recognition of such a reality. This chapter and the following three chapters have been developed with a concern for a wholeness in the socio-spatial schema of gestalt neighborism and a placement of street forms into a perspective which relates to a whole

understanding. The approach has been made so that a wholeness may be accounted for even though the researcher is limited by being obligated to deal with the parts.

Social Organization

Social organization can be conceived as operating from the results of social forces from individual members and outside influences. These forces are: (1) centripetal; and (2) centrifugal. Charles C. Colby, an urban geographer, has used this conceptual approach for understanding city structure.[44] Since these terms are process oriented, a conversion to social interaction is applicable to the study of social organization.

Centripetal forces can be identified as those social actions which tend to reinforce the social unit; whereas centrifugal forces operate to disintegrate the social group. Characteristics which form these forces are: (1) level of participation--individual or group; (2) degree of physical mobility and dispersion; (3) amount of face to face interaction; and (4) level of dependency on one's social group to provide survival and socialization needs. Centripetal qualities are seen as being group oriented while centrifugal aspects are related to independent individual actions. Outward movement may not be toward a total individual orientation. A person may attempt to separate from one social body for the purpose of being associated with another.

The time cycle of organization is a major determinant in the dominance or equilibrium of the two force types. As the formation of a group occurs, centripetal forces must dominate so that social bonds may be established. Once an adequate level of group solidarity occurs so as to develop to counteract centripetal forces, an equilibrium or seesaw

action of the forces may happen depending on the personal will and physical limitations of group members. If centrifugal forces come to dominate and eventually eliminate centripetal effects, the social group becomes nonexistent except for historical fact. To the extent that the two forces are related to one's social neighborhood, centrifugal and centripetal effects provide the instigation, continuation and elimination of conflict with each individual's socially grounded gestalt neighborism.

Social organization in this study is primarily limited to social circles and neighborhood organization. These two group forms are highly related to the neighboring act which accounts for the researcher's selection.

Social Circles

While suburbia places great emphasis on family, this group cannot possibly contain all social interaction. As one identifies his neighborhood, he is unable or unwilling to interact with all defined members. An individual also does not always depend on voluntary organizations to provide desired social interaction. Outside of the family a person will not enjoy all his interactions with groups he has defined himself within. He may include a portion of the members of his neighborhood with whom he participates and experiences a degree of commonality. Such commonality is caused by propinquity and like interest. The informal group association which is supported by desired interaction is identified as a social circle.

The individual finds the social circle of some necessity in that no formal body, such as the family, neighborhood organization or church,

can include all his interests. Simmel notes that the social circle compensates for individual isolation which was somewhat caused by earlier circumstances of organization. The circle gives him the opportunity to associate based on his interests.[45] As a person becomes more involved in social circles, he is less socially tied to his formal groups. Simmel has implied in his statement that social circles destroy neighborhood and kinship organization. Conflict will undoubtedly occur between the circle and the neighborhood or family.

Kadushin has developed the "Theory of Our Friends" which identifies the continuing process and structure of a circle as he states:

> The 'friends' if they 'have one acquaintance in common . . . have three hundred in common' (indirect dense interactional), they have 'activities in common' (common interest), but they are not ordinarily aware of the nature of their relationships- 'you're all much more friends than you know' (low institutionalization). They have no formal leadership, for 'you all repel and avoid one another.'[46]

Kadushin identifies the social circle as low in formality and direct interaction as compared to the family and neighborhood.[47] As Simmel earlier suggested, Kadushin has found in his research that the development of a social circle tends to destroy traditional kinship and neighborhood forms.[48] In addition, he finds this group type to fill the vacuum created by the organizational forms. Also, Simmel notes the social circle to have protective aspects as he states:

> The earliest phase of social foundations found in historical as well as in contemporary social structure is this: a relatively small circle firmly closed against neighboring, strange or in some way antagonistic circles.[49]

From these comments one can see that the circle creates a paradox in social identification. An individual may strongly identify with his family for personal and structural needs, but it cannot fully satisfy

a person when some of his interests are unique and different from the household members. To achieve a more full life, a person will go outside of his institutions to find common interests. As one attempts to establish friendship within the neighborhood, he isolates himself from the total identification of neighborhood. His seeking for homogeneity with nearby people somewhat eliminates heterogeneous contacts and qualities of life which also exist in his residential area. The social circle tends to undermine the association of family and neighborhood.

Physical and social aspects can affect the viability of the social circle within the neighborhood. Willmott notes that length of residence greatly affects sociability: the newcomer has a difficult time finding a friendly atmosphere.[50] Whyte has noted the problem of the transient neighbor who has difficulty in establishing social relations.[51] However, Shulman notes that mutual assistance among selected neighbors increases with the length of time a family lives in one place.[52] It seems that the social circle has a boundary of veteranship. Any new addition to the group may cause an invasion on established common interests. Michelson notes that children can act as important initial catalysts in the formation of friendships of social circles.[53]

Willmott has also found separation of sociability due to people's age.[54] The variation of age can be associated with the stage of the family in its cycle. An older couple whose children have already departed the family may not be able to integrate well with a family with children in the household. Gans found that some, but not all, older people experienced less neighboring in Levittown, New Jersey.[55] Willmott has also found that people's attitudes toward and familiarity with surrounding neighbors is affected by whether they conceive of their

neighbors as being equal in status.[56] Gans has found in his suburban research a definite separation of cliques by higher and lower status which are determined by amount of money, education and life style.[57] An example can be seen when white and blue collar workers live in the same neighborhood. The social circle cannot ignore the family effect. Bell and Boat have found in their works that a higher degree of neighboring occurred with families of higher status independent of economic status.[58]

The limited number of households that a neighbor is able and willing to interact with for common interest acts as a determinant in the social circle boundary. Simmel notes that a large social group of people can only exist if there is a complex division of labor.[59] Since the social circle is informal and without much structure, the circle will tend to be somewhat small as compared to some other formalized groups.

If a neighborhood is to be strictly defined by active personal contact, the social circle would make a good definition of neighborhood. However, gestalt neighborism would include deviates and nonsocial neighbors. Also, a whole includes a physical definition of area identified as neighborhood so that one can approach a gestalt. The social circle adds an active social dimension to the family beyond the household, but is only a portion of one's neighborhood life.

Neighborhood Organization

In comparison to the family and social circle, neighborhood organization is seen occurring on a larger geographic and population scale. Organization becomes quite important at the neighborhood level in that people share commonality of location, but social interaction may not

necessarily be active. Secondary relationships are needed to bring persons together. This need for cohesiveness begs the question of why individuals need to be brought together above their existing social bonds. A person may not be able to exert his opinion, because his socially grounded bonds may not be oriented to community level problems. Neighborhood organization provides a unified mechanism to present and protect the residents' interests. Kotler sees such organization largely as a political body as he states:

> The neighborhood, in origin and existence, remains a political unit of settlement, whether self-ruling or dominated. And neighborhood organization is the natural place for either founding new liberty or liberating local settlement from outside power.[60]

Kotler states that the neighborhood has definite physical boundaries which are formed by highways, middle income construction, and parks. He believes that the block is not a neighborhood. Kotler also feels that the neighborhood is identified by a political center, such as a police station, and political boundaries help define the neighborhood organization and its boundaries. However, not all of such organization is politically oriented. As stated previously, research has shown that persons identify neighborhood at various geographic levels which includes the identification of very small areas such as the block. In single family areas neighborhood usually includes more than the block. Neighbors in front as well as behind the home will be included due to propinquity.

Greer identifies the suburban neighborhood being organized by communication rather than by policy. He finds the neighborhood too small to be an administrative subunit of a larger community system and too informal to constitute a base representation for a larger system. Greer

identifies three levels of actors which are: (1) isolates; (2) neighborhood; and (3) community. The community actors have greater involvement and competence than at the neighborhood level.[61]

In the political light, neighborhood organization tends to be reactionary versus actionary. The social structure is not oriented usually to the gathering of funds to cause change in the area. This collection of resources has been delegated to municipal and county governments who play the action oriented role. When such local activities conflict with the desires of the neighborhood, resident discontent occurs. This condition gives the impetus to organize the neighbors as a reactionary force. Suburbia may provide the desire and formation of organization to protect itself, but the force is limited compared to local city government. In his discussion of the suburban perseverance in politics, Wood notes these shortcomings of suburbia:

> Their political institutions and process have typically been inadequate and ill equipped; their bureaucracy amateurish and untutored. By every test with which we judge the vigor, strength and staying power of modern government, most suburbs seem to fail miserably.[62]

Suburban neighborhood organization has been seen mainly in actions concerning neighborhood schools and new physical development. The neighbors may react to traffic control around the schools or new curriculum approaches which may be drastically different from traditional methods. The neighborhood may organize itself to fight rezoning cases which may affect the present desired atmosphere.

As briefly noted previously, neighborhood organization is not totally oriented to political action. Political structure tends to have formal structure or assumes the attempt to have formality, but the neighborhood can also organize informally without an outside threat.

Informal neighborhood organization may occur due to residents desiring identification as a neighborhood. Such attempts are seen to bring about identified togetherness through goodwill.

Neighborhood organization may occur for informal or formal reasons, but in either case the desire for unity is ever present. Collective consciousness through structure and ritual events allows for the existence of organization in suburbia. Solidarity in relation to outside forces tend to be formal and reactionary. Within the neighborhood solidarity is characterized by informal and actionary processes.

Summary

This chapter began in defining neighborhood, neighbor and neighboring, and it was explained that none of these terms encompassed the whole of social experience. Thus, the concept of gestalt neighborism was derived to fully account for one's socio-spatial reality in his residential setting. Within this whole, the various levels of social organization that may occur were discussed to give notice to the different aspects of social structure. One's social life is not fully contained within the family, the social circle, neighborhood organization or situational relationships. Instead, residential man has a combination of social structure to fulfill his social life. A gestalt outlook should encompass all these forms of organization to understand more fully the social situation.

FOOTNOTES

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CHAPTER III

SPATIAL CHARACTER

While an individual carries his experiences to develop and form a whole understanding of himself through formal and informal organization in his gestalt neighborism, the dimension of space can be considered as being an integral part of one's reality with others. Social relations do not exist without the physical realities that persons carry with their bodies or the man-made environments people use to orient their social behavior. Spatial qualities within the neighborhood should be considered if one is to understand the behavior of the individual and his viable groups within his physical range. Any attempt to understand an individual's gestalt neighborism must include his spatial life.

Spatial character as related to the individual is discussed here in regard to socially and physically determined space in the neighborhood. Personal space is defined by the individual within his given area of interaction. As a person moves from place to place he carries a social space with him. Goffman refers to this area in a defensive manner in that a person has a survival area of various rings of entry and danger. The area is defined as one's "umwelt." The range of a person's social space is dependent upon the definition of one's situation in regard to other persons interacted with.[1] Personal space is very malleable and amorphous in form over time.

Personal space can also be defined as that area in which an

individual's senses are in effective activity. The senses of sight, smell, sound and touch are part of the person, and they function jointly with some types being more dominant than others, depending on the social conditions related to American suburbia and the social access one has in such an environment. All senses can range from the very private to the public, and the continuum of such senses is present in a neighborhood setting.

The second discussion of space is related to physical limits which are largely immobile and more defineable in dimension. Architectural territories are building and property areas which are used by persons to carry on daily interactions in relating to a social setting. The setting is defined at various physical levels which are in existence at different scales of interaction and conception. Architectural territory is partially determined by the social participants as to what is needed to carry on a desired living setting for social interaction. Emphasis is also placed on the aesthetic characteristics of neighborhood space which are largely derived from physical forms defined by outside cultures. While much of the discussion on spatial distribution is devoted to social process, the architectural factors are seen in physical form which is brought about by the physical manifestations of material culture.

These discussions on space are conceptually divided by an emphasis on situational control. The physical surroundings may dominate the distribution of space or the individual may control his own space over the physical limitations in some cases. It is important to note that the social and physical aspects of space are in operation jointly in a social situation.

Personal Space

Edward T. Hall identifies four general distances in man which are: (1) intimate distance; (2) personal distance; (3) social distance; and (4) public distance.[2] It is Hall's contention that these spaces become important as a person activates selected learned situational personalities. Such a personality is determined by an individual's role in his physical and social setting.

Intimate Distance

For intimate distance Hall describes two phases, close and far.[3] The close intimate distance is typified by love-making and wrestling, comforting and protecting. This distance is more identified with the dyad (parents) or members of the family. The use of the voice and vision are quite subdued while the sense of touch is of great importance.

The far phase of intimate distance is six to eighteen inches. This distance is still largely confined to the family in American suburbia. Such distance might be seen in the neighborhood if the kids on the block are packed in the back seat of the family car to go to the local movie theater. However, this distance is considered improper for middle class American adults.[4]

Personal Distance

The next general level, personal distance, has two phases, close and far.[5] This distance is from one and a half to two and a half feet. For adults this distance must be defined as a family space; however, this zone is a commonly used distance for small neighborhood children.

Effective control by one child over another in games is seen at this level; mock fight and heroism, oriented play are exercised within this space. Many manufactured games for children are directed at this social distance. Building toys, such as Lincoln logs, are worked with many times by playmates in this range.

Social Distance

The next category defined by Hall is social distance with both close and far phases.[6] The critical distance for the close phase is defined as four to seven feet. This range is normal for adult neighbors in informal social-conversational gatherings. Children operate well at this distance, but due to the proportional size of their bodies, this range could be considered somewhat distant. Furniture arrangements within the household are usually designed for this distance.

The far phase of social distance is a range of seven to twelve feet.[7] Within the home this distance could be considered a room introductory distance or a range where people may be at opposite sides of the same room. Bedrooms, a den, kitchen and living room would be normal examples of such space. Differences between children and adults in socializing at this range are largely neglible since both groups function effectively at this distance.

Public Distance

The next level of space as defined by Hall is public distance which also has a close and far phase.[8] The close phase is limited from twelve to twenty-five feet. This distance may be in existence within the home, but it is typified usually by talking loudly from one room to the next

to get an individual's attention. Normally, this distance is more conceived as being an outdoor space in American suburbia. An example would be talking to a neighbor in the front or back yard whose house is directly adjacent to the side of your home.

The far phase of public distance is defined to be twenty-five feet or more. This distance in American suburbia is most effectively seen by an appropriate wave to the neighbor across the street. It is within this range that neighbors identify with each other in relation to the scale of the street block. Vocal responses are somewhat strained in that an individual must definitely speak up at this range.[9] Areas greater than the street block can be considered. Some new developing neighborhoods have vacant lots which give greater visual access. This condition forces children to search for playmates other than those on the block.

Variation in Distance by Human Scale

In summary Hall's ranges are quite applicable to the socially grounded American middle class suburb. There is a major fault in his classification as it applies to the social condition of the neighborhood. The error is that all the categories are based on an adult scale. Many of the closer distances must be defined as family related for adults whereas the defining limit of family means little in reference to children. Social access space for neighborhood kids is smaller for two reasons: (1) The scale of the physical body is substantially smaller; what is close for an adult may be far for a child; (2) children have no need for establishing safe ranges (example: sex) for behavior for which adults have established proper social norms. The degree of

socialization is sufficiently less for children when protective ranges for some forms of behavior are not deemed necessary.

Architectural Territory

Goffman's "umwelt" centers around the human being without specific regard to other reference territories. Hall's distance regulations and Goffman's "umwelt" have spatial implications but no reference to community geographical settings. This gap does not invalidate their work; however, architectural territories must be more specifically defined to relate environmental factors which are geographically grounded with these personal space types.

The concept of neighborhood brings forth a different array of territories which complement the existing types specified by these social scientists. Restated, their definitions are based on the individual. It is not unlikely to assume that these distances can also be defined by physical surroundings. Such surroundings are determined by various physical realms that the neighbor must socially exist within in his day to day life setting. These neighborhood realms are: (1) household rooms; (2) the entire physical house; (3) the combined house and the lot; (4) the block; and (5) the physical area defined by him as the neighborhood.

The Room Territory

The household room is a very definite territory when one entertains a person who is a temporary guest or a new acquaintance. This person has access usually only to a few rooms, and these must be considered somewhat public. The living room or den is used as a conversational

space while the bathroom is a required space for all who are accepted within the household. The kitchen or breakfast room may also be used for coffee talks. The bedroom areas are somewhat taboo to a new acquaintance, since these areas are the centers of family intimacies. At this stage of distance, reference cannot be made to the house as a whole since the acquaintance is not fully aware of its environs.

At the room level the most costly and cherished individual items of personal ownership are found. Architectural furnishings in a room are good examples of cultural values beyond the neighborhood. The family may favor a Spanish motif, French provincial, early American, contemporary or a combination of cultural styles. The style emphasis is seen in the more publicly exposed areas of the home, such as the living room, den and dining room. Seeley and his fellow researchers note in their Crestwood Heights study that the picture window, usually in the living room, is used as a mechanism for others viewing in from the street versus the dweller looking out for a view.[10] They also note that family furniture purchases are not validated until they receive approval of local friends.[11] Variations of style can vary from room to room, but usually some means of coordination of rooms is attempted. An example would be complementary colors. Variation of room styles is more apparently seen with the child's bedroom. While the living room may be a more conservative, historical style, a kid may have a brilliantly decorated bedroom of bright colors and contemporary look.

Such decoration makes one aware of the ongoing presence of the existing social situation; whereas the more formalistic styles chosen for household ornamentation may place one further away from his personal social grounding.

While rooms and furniture are designed to fulfill human functions, these spaces are arranged in relation to proportional lengths of walls so as to maintain a desired attractiveness. It may be more functional to have a bed or couch near a corner to allow more floor space; however this is rarely done in that the individual design of these pieces are emphasized by not placing them close to the end of walls. When the housewife decides to arrange furniture, she does not attempt to fulfill a function only. She is also trying to achieve the best desirable sculptural effects with her household furnishings to represent her values.[12] The careful placement of a picture on the wall has little to do with accomplishing sociophysical functions as it does with cultural aesthetic criteria to provide a personal atmosphere.[13]

Ruesch and Kees note that within room spaces individuals stake out private corners.[14] This is very important when one considers that family members must share many spaces within the household. An example would be the father having his favorite lounge chair saved for him when he comes home from work. The mother has her dressing table while the children will develop their special individual play areas. Each family member may have his designated chair at the dining room table. The domination of the kitchen by the mother is so apparent that other family members are sometimes hesitant to interfere with her realm.[15]

The House Territory

The territory of the entire house is a greater physical distance area identification than the room, but also it is a more socially grounded situation in regard to face to face interaction. Donaldson notes that the contemporary suburban home has a public atmosphere with

the picture window advertising the home as a "high windowed store front."[16] Your next door neighbor of three years will have periodic access to the children's rooms for play purposes and the master bedroom to admire a new set of curtains or some new sewing or clothes of the wife.

The house includes all interior and exterior surface spaces which are part of the building shell. In suburbia the exterior motif which relates to a particular cultural style or combination of styles is selected much in the same manner as the furnishings of individual rooms, family preference. However, what a residential developer thinks is salable also partially determines exterior design. There are some cases where there seems to be a lack of styles. These cases are those homes which are absent of any identifiable cultural ornamentation and do not fit the contemporary motif. This is partially due to home builders misinterpreting Frank Lloyd Wright's usonian architecture which emphasized the open plan and discouraged useless ornamentation.[17] The house may seem so plain that it appears acultural in ornamentation. The American suburban home may seem to have little distinctive design, but when compared to other cultures, variations become more apparent in the use of materials and family functions. Yet, to many people there seems to be a dull sameness. This uniformity is more properly seen as a lack of regional identification than it is a lack of national character or a soldier-like repetition of house proportions and ornamentation.

Some visual variation does occur in suburbia, but regionality is more profoundly seen in the sculptural shape of the architectural shell and the interior layout than with ornamentation. Single story homes predominate in the western flatland areas whereas there is a greater

influence of two story homes in the more hilly and tree infested areas of the eastern United States. This condition is again a consideration of the natural environment. Frank Lloyd Wright, who had a profound effect on residential architecture, emphasized the relationship of the building height and length to the land profile.[18]

The sculptural shell is greatly determined by the layout of interior functions which represent some of the household values. However, Festinger makes the point that the selection of a house places one in involuntary membership in a group of others who select homes for their values.[19]

The cumulative effect of individual room functions form the wholeness of the house. The interior motif may or may not be transferred to the exterior. A family may buy a traditional designed home, because they like the neighborhood; but the household members may favor a contemporary interior setting. Ornamentation of the house exemplifies family tastes in the selection of house paint, color and shape of shutters, door design, the mail box, house lights, porch rails and lattice work, window and door trim, roof cornice work, type of wall and roof materials and other smaller items. The manipulation of these architectural elements can indicate the family style and cultural values.[20] Families in higher income and education classes tend to have home decorations which are coordinated and toned down in color.

The Combined House and Lot Territory

The combined house and lot is the fullest extent of personal ownership within the neighborhood. Gans has noted that parents move to suburbia to have more yard space. Their young children could play without

supervision, so the parents were allowed to spend more time with other adults and children.[21] There may be festive occasions when neighbors come over for a summer evening cocktail and even a meal in the back yard.[22] While the outside lot area is not as intimate as the hearth of the house, the access is. The lot territory includes not only yard space but also the house itself. If a person gets to the back yard through the front door, it would be rare to think that the person is a stranger. Gans has noted that larger lots can reduce the amount of social interaction among residents, so one's neighbors may become somewhat of a stranger in such instances.[23] A person may have a garden in his back yard to raise food for the household, but the economics is not the primary reason in suburbia for having such an activity. While the pride of one's own labors can be a motivating factor, the gardener is also creating an aesthetic space which represents his values.[24]

The cutting and trimming of one's lawn is the one aesthetic matter which presses the household. Most suburbanites would consider it an embarrassment to leave one's lawn unattended for a month, because the untidiness would indicate the family's sloppiness and aesthetic values. This applies not only to vegetation but also to the painting of one's house. If a person has a brick home, he shows a sign of some wealth and possible taste. If one owns a wooden house, he will probably be given the same variability as to personal taste. When an individual fails to keep such a house painted along with the mowing of his lawn area, neighbors may question his tidiness.

The orientation of the household may show a difference in the upkeep and visual beauty of a front yard and back yard. A household may take greater care of their front yard to present a more favorable image

to their neighbors while the back yard may be clean and neat but not as decorative.[25] This form of behavior is a product of Western European thought. Architecture for western man has had the tendency to place marble on the front but only clay brick on the less visible back portion of the building. For eastern man this practice does not always hold true. In Japan interior yard spaces of the home receive excellent care while the front fencing and building area may seem very plain and nondescript.[26] The important factor in regard to the architectural territory of house and lot is that the household integrates its expressions of spatial values in architecture with the natural features and capabilities of the land through landscaping. Gans has stated that both house and yard offer opportunities for cultural self expression which generates family cohesion and change in spare time activity.[27] There is further integration of interior and exterior spaces which have different functions. Suburbanites guide the blend of these spaces and ornamental features which may represent a culture other than their own. Suburban man's approach to his residential homestead is partially the result of western man's more dominating approach, man over nature. The individual who treats his lawn with care is not willing to let nature take its course which might result in a front yard of crabgrass. The control of exterior space is highly representative of what one finds within the house.

The Block Territory

The block is defined here as the territory which includes only those houses which face the street--terminated by a dead-end or other streets. A neighbor identifies with the block space, but he is not as

protective with this setting as he is with that area which he can particularly call his own. A break in area accessibility occurs here in the hierarchy of space as the lot is defined as personal space whereas the block is an accumulation of personal spaces and community space. The accessibility to the block is greater, but it is obviously less personal. This is not to say that the block space has no social meaning, for neighbors use the block as an identification for having block parties and joint complaints concerning such disturbances as teenage hot rodders. Caplow and Forman have found in their research that the block is a highly integrated community in group housing. Their sociometry techniques show that interactions were oriented to the block versus extended relations to other similar blocks.[28] Gans disagrees by saying that the block is not influential in determining friendships.[29] This level of space is where community complaints are first generated, and it is of significance that this is the first area level where public space is used to define one's personal area. The neighbor is not responsible for the maintenance of his street. He has granted that authority to his local government.

Conflict in the community begins when an individual feels affected by uses of space over which he has no personal control. One must compromise and deal with his fellows. The social grounding of the block is ambivalent, for a person has visual access to surrounding persons. Neighbors may only be visual acquaintances and not social ones. However, Gans has found that if the distance is small, visual contacts tend to be transformed into social ones.[30] The highest degree of community is within the household, and outside of that realm the social community in suburbia begins to deteriorate. The block is the first level of that

socio-spatial deterioration.

A single family subdivision block has the structure of many small national states which are joined together by a circulation facility, a street. Jacobs states that street neighborhoods are not discrete unities.[31] Each homeowner has his own personal lot, and its landscape and decor are fashioned by the values of the household. The property lines are fairly well delineated with no man's land being the street, sidewalks and alley. Mitchell and Lipton have noted the great efforts of neighbors to erect fences or hedges to protect themselves from side neighbors.[32] A neighbor has little to say about the doings of his neighbor until that person does something on his personal province.[33]

A peer conflict occurs within the neighborhood in regard to the definition of a community territory. Children recognize the basketball goal as community property, because it may be the only one on the street. The youngsters partially define community by group play. Group cohesion cannot occur if the necessary implements for play are not present. In the emphasis for social interaction, adult boundaries manifested in property lines and ownership mean less to the children. A child may not be bothered greatly with another kid using his basketball goal for community activity. As long as he has the psychological security that the hoop will be there after the game, he may feel able to use another kid's toy in community play. This is not to say that a child has no values on property restricted to his personal use, but he does not restrict the use of toys to established formal boundaries to the degree that a parent will in regard to their household properties for community use. For the parent the restrictions have less to do with property value than the propriety of right to use through the intangible

of property ownership. The psychological invasion of the children on the household's basketball hoop has little to do with the parent's assessment of the hoop's economic value. Instead, he is concerned with keeping control of his little "nation state" in relation to the other surrounding provinces.

One's position on a block may affect his social process with other neighbors on the street. If one lives in a mid-block area, he is surrounded by the greatest number of possible neighbors on that block. Whyte has found that groups tend to be formed by those persons who have adjacent driveways, persons in the most central position in the block, and where street width and traffic are minimum.[34] Gans found that one's relative position to neighbors affects interaction. The majority of visiting takes place between neighbors to the immediate side and directly across the street. Homes across the back yard were low in comparison.[35] Distance is minimized in such a central location. A person living on a corner is on the fringe portion of the block and less able to have people within greeting range or other forms of interaction. This may not always hold true, for a neighbor with a strong personality may live on a corner. However, his normal chances for greater acquaintances are less than for the neighbor in the mid-block area.

Physical boundaries of a social circle tend to be formed by the location of deviate or feuding neighbors. The back yard may be a boundary if there is no means for pedestrian circulation.[36] Willmott makes the point that a physical design which promotes contact can generate conflict as well as friendliness.[37] Gans implies the formation of social circles as being selective homogeneity, and the physical area of such homogeneity is at a "sub-block" level which contains ten to twelve

houses.[38]

The street configuration may or may not conform to the landscape. In hilly areas, the use of the curved street shows man's need to fit the design of the function to the land form. The ultimate result is that the land form may ultimately affect the architectural spatial pattern of neighbors. Class differentiation is important. Fried and Gleicher have found that working classes will use a street for a living and gathering space while the middle class tend to use the street as a corridor to travel elsewhere.[39] If the land is flat, a multitude of land configurations are possible, and the land developer chooses one design to his liking, usually based on economics.

The configuration of a street to form a block brings forth varying spaces which can affect the social behavior and aesthetic choice. A linear street block gives prominent visual location at the corners causing physical attributes in the middle section to be subdued. This form of space emphasizes a soldier-like quality in the arrangement of dwellings and side yards tending to increase symmetry. Gallion and Eisner noted that rectilinear street arrangement has been the result of conscious planning.[40] They also state that it has the advantage of direct access.[41] While lot widths, lot depths and house size may vary, the equal setbacks from the street maintain linear and rectilinear symmetry. The visual image of the straight street for a block may give an appearance of social likeness. This may be partially true in household choice of a design setting, but individual behavior will vary. The values of the household are not totally dependent on the surrounding neighbors or the present physical setting. Family values are also derived from other sectors of the community, such as religious influences.

Also, the identification with other cultures is done in regard to visual taste, such as a Spanish style home.

The curvilinear street presents some of the same qualities of the linear street in symmetry, but some aesthetic utilizations of spaces are different. With the linear street one is able to achieve a complete eye level perspective of the street by being at one end of the block or by looking both ways alternatively in the middle of the block. The perspective for the curvilinear block can be limited due to the curve blocking the view of some dwellings on the street. Gans has commented that, " . . . the gentle curvature of streets puts distance between people to allow them to ignore all but next-door neighbors."[42] Where both ends of the street obtain visual prominence in the linear street, it is only usually possible for one end of the block to be visualized as a termination point. The middle section of the block also carries a different visual weight. If you attempt to see one end of a block from the other end on a curvilinear street with the far intersection being visually blocked, what visual result do you have? A new visual termination is formed which will be near the middle section of the block. Each side of the street will have a different depth of visual termination depending on which side of the street the observer is on and which direction the street is curving. As one walks down the street, the visual termination point is always changing location along with scale. For the linear street the terminal location visually remains the same with only the scale changing. Gallion and Eisner comment that the curved street gives a loss of orientation, and the picturesqueness it creates cannot compensate for the confusion it creates.[43]

Due to this changing perspective, one's imagery and identification

of architectural space is somewhat ambivalent on a curved street versus a linear street. Tunnard has commented that the street provides a mystery when it is curved or sloping.[44] Side yard spaces are less likely to be symmetrical along with the general shape of individual lots. Also, a curvilinear block will more likely include vertical variability, for curved streets are more practical for irregular terrain. When horizontal visual points change, vertical points are also likely to change. This is not always true, for a designer may decide to use curved streets on flat terrain for spatial variety purposes. Gallion and Eisner have criticized that the city is a battleground of the right angle and the curve. The linear pattern is a process of dividing properties in a monotonous manner, and the curve results in a variety of disorder.[45] The aspect of vertical variability of block termination points also applies to strictly linear streets when there is a significant change in topography.

The cul-de-sac street block has a very different architectural space function than the linear or curvilinear block. The previous two types are analogous to a tube. There is an entrance at one end, and there is also an exit at the other end. With the cul-de-sac street there is also the entrance, but the visual termination at the other end is also a physical one. If all residential lots have been built upon, there is no spatial leak at the end of the street. The identification of architectural space becomes very important in regard to community space. In the linear and curvilinear forms, the physical nontermination of a street allows the same identifiable road space belonging to other persons further down the street. The street has many people who identify with it. With the cul-de-sac, the block and the street are one

in the same serving only one community of neighbors. The prominent architectural spaces are the corner lots at the entrance and lots facing the circle at the end of the street. The middle section of the street is not prominent unless the cul-de-sac street is curved or changes drastically in elevation. The effects of these characteristics have been discussed previously with the other street forms.

The cul-de-sac has the form possibilities of having greater lot shape variability due to the character of the street turn-around function. With the cul-de-sac there sometimes occurs a community space which is rarely present with the other two street forms, a landscaped area which occupies the circle. Instead of paving the entire circle portion of the street, some developers choose to leave a ground covered area to cut pavement cost and allow the neighbors to plant such an area as they please. The neighbors may or may not take pride in such an open space, but the alternative for exhibiting a community effort is available to them. For curvilinear and linear streets such spaces do exist, but these open areas usually occur on major boulevards. This open space area is normally maintained by the municipality.

In his group housing studies of Dagenham, England, Willmott had the strong impression that persons in cul-de-sacs had a distinctive social atmosphere by being friendly with their fellow neighbors.[46] He also notes that shorter narrower streets tended to be friendly with more lasting relationships; cul-de-sacs tend to fit this description because they are usually shorter than other street forms.[47] In group housing Festinger notes that the group arrangement of courtyards simulates cul-de-sacs. These configurations can promote friendliness when combined with close proximity between houses and a suitable direction that the

structures face.[48] Willmott indicated that he felt cul-de-sac streets tend to overcome group separation due to age.[49] However, he also noted that some people wished to move out of cul-de-sacs in Dagenham, because these persons felt they had too much contact with their neighbors.[50] Willmott felt that more cul-de-sac streets should be used in residential design but not to the exclusion of other forms.[51] In contrast, Kuper stated in his group housing studies that persons living on cul-de-sacs were less satisfied with their housing than occupants who lived in a longer straight line on the side of an external roadway.[52]

The important factor of the neighborhood street block as an architectural space is that it operationally defines the spatial distribution of a social community which has definite physical boundaries. The various dwellings are related to each other so as to form a physical complex of activity. The block may not function as a social community, but the architectural arrangement of physical structures suggests that a social community may be operative there.

The Neighborhood Territory

The neighborhood is the last territorial level that the neighbor identifies with in his residential setting. Beyond this stage, business and industrial activities must be included in the geographic definition, and these operations are not wholly involved in the neighboring act.

Major streets act as effective neighborhood boundaries as stated by Allaire:

> The widely accepted practice of using major streets as neighborhood boundaries is basically sound. An atmosphere of quiet and cohesiveness in the neighborhood will not be encouraged by the introduction of high speed traffic into the area.[53]

Donald Appleyard has substantiated the separation of neighboring by finding that as street traffic volume increases the degree of across-the-street neighboring decreases.[54]

The architectural function of the neighborhood space is the interrelating of separate architectural dwelling clusters which are usually spatially defined as the block. Community space is most significant at this level in that secondary schools and community parks may be included within the definition of the neighborhood. Some small commercial activities might be included, such as the small corner grocery store, but neighborhood is more spatially defined as the related residential areas. Spaces may be uniformly related to each other by using essentially the same horizontal forms of transportation networks and building layouts. An example would be a neighborhood with a grid pattern or another form in which all streets are curved. Another form which has been more popular recently is the cul-de-sac used for all neighborhood streets joined by a collector street.

Clarence Perry developed the neighborhood unit concept which regulated the area, location and distribution of land used and the physical criteria.[55] His attempt was to allow for physical development which would maximize family and community life. Some social scientists have since criticized him for attempting to provide a panacea for urban ills through the neighborhood.[56]

The social neighborhood territory is malleable and is subject to definitional change, but major streets help one to identify a geographical area as neighborhood. People tend to define their territories by some form of marker, and a street which does not lend itself to neighboring due to traffic loads helps exemplify a no man's land. Social

interaction at the neighborhood level is somewhat strained, for face to face contact is quite slight, making it difficult to form a social bond. However, Bossard notes the importance of the neighborhood territory to the child in that for many children this area is practically their whole world in imagery and ideation.[57] For social interaction to occur at this level, there is a need for a more definitive purpose for being brought together as a socially grounded group. Such purpose has usually been a joint effort to protect against some local governing body which intends to instigate some form of change which affects the defined neighborhood. An example would be the request of a developer to build a shopping center adjacent to a neighborhood which desires to stop such a future change.

Interaction at the neighborhood level is aided by the use of the telephone. While the area might not be conducive to walking a few blocks to see a friend, one can maintain partial contact through the telephone. It must be noted that the phone is not really wholly a neighborhood communication device, for the telephone helps one support many extended relationships beyond the household.

When relating to a person on another block in the neighborhood, a neighbor does not usually have as ready access to that person's personal ownership space compared to that of a person living on his block. However, many people do have access to his neighborhood territory. As with the block level, the use of the street or other people's space does not greatly bother the neighbor, because he is not directly responsible for it. He is even less concerned about the street a block away. Gans states that neighbors see other blocks as out-groups.[58]

Consistency of architectural space at the neighborhood level is

partially determined by the similar economic value of housing within an area. Residential subdivision development is normally done with lots being of some fairly uniform size which also controls the use of space.

Some new residential developments now have controlled entrance and exit areas for security purposes. These new neighborhood types have a conflicting character in their function. The ornamental fencing and entrance points give one an impression of elitist space. It is as if one is living on a private estate and displaying his economic freedom to have such a choice. In contrast, the neighborhood could be viewed as having a garrison character in the architectural definition of space. People have imprisoned themselves in a restricted environment which might be seen as a gilded cage.

Neighborhoods which are single family housing developments now may receive commercial imagery to define their architectural character. The neighborhood may have a symbol or logo to identify it. The labels attached to these new man-made environments attempt to make these spaces more than they actually are. Such names as "Rolling Woods," "Riverbend," "Smokerise" and "Indian Hills" attempt to add fantasy beyond the area's spatial reality. One's desire for such architectural definition of space is an attempt to raise one's social status without any individual effort.

The enclosure and labeling of neighborhoods had been done quite often in the past for upper income areas such as River Oaks in Houston, Texas, and Shaker Heights in Cleveland, Ohio. Only recently have such practices been done prolifically. This is the result of commercial promotion which indicates the accelerated growth of the advertising industry and the developer's use of new techniques to sell his residential

homes.

The majority of American suburban neighborhoods do not fall in this new era of residential promotion. Instead, most neighborhoods are the architectural products of many developers who are fairly uniform in their approach in defining architectural spaces. This is done by the use of stock house plans which tend to give an overwhelming visual uniformity to a neighborhood.

Summary

Accessibility to architectural territories within the neighborhood forms a two dimensional pyramid in regard to the household. Social accessibility at the room level is quite limited, and there is an increase of familiarity at the house territorial level. The highest level of social accessibility occurs with the combination of the house and lot, because this area defines the complete personal property ownership. Social access decreases at the block level due to the introduction of community property and other personal ownership. The neighborhood level has a lower social access due to a greater ambivalence of social grounding caused by more community and other owned territories.

This territorial intensification pattern is unlike that of personal space. As a person has more intense familiarity with another individual in personal space, the social access to a smaller area of body space is increased. This pattern is somewhat linear with no mid-peak of social access as seen in architectural territory. The peak of personal space would be at the intimate scale. Such a peak of social space would be the act of husband and wife making love. From this discussion it is not possible to equate similar patterns of personal space and architectural

territory. Figure 2 illustrates these variations. The pattern may be subject to change. Arguments with family members and neighbors may temporarily affect the pattern of personal space. A change in pattern for architectural territory would be seen with neighbors protesting against apartment zoning or Negroes moving into the neighborhood.

The definition of the situation has much to do with the social control of emphasizing particular elements of space. The range of element domination is seen when one is grabbed by the arm and is held very firm to the point of realizing pain. On another spectrum one may be thinking about the image of his neighborhood in relation to the remaining community. The scale of space, the degree of social interaction, and one's position in relation to others have changed. The individual experiences a range of spaces which are determined by the socio-physical conditions of personal space and architectural territory.

While the senses have been discussed separately, these elements cannot be considered to act independently from each other. There is always the case where a person's senses may be limited by blindness, deafness or some dead nerve endings, but the remaining senses are still related to each other and even accentuated. The greatest variation of the senses is found in the private setting of the home and more constrained as the situation is increasingly public within the neighborhood. Children generally have less constraint with their senses unless they are shy. As socialization of the children increases over time, they restrain their senses to a greater degree. The holistic comments here are highly related to the discussion of personal space functions of the individual.

In summary of architectural space the social meaning of the space

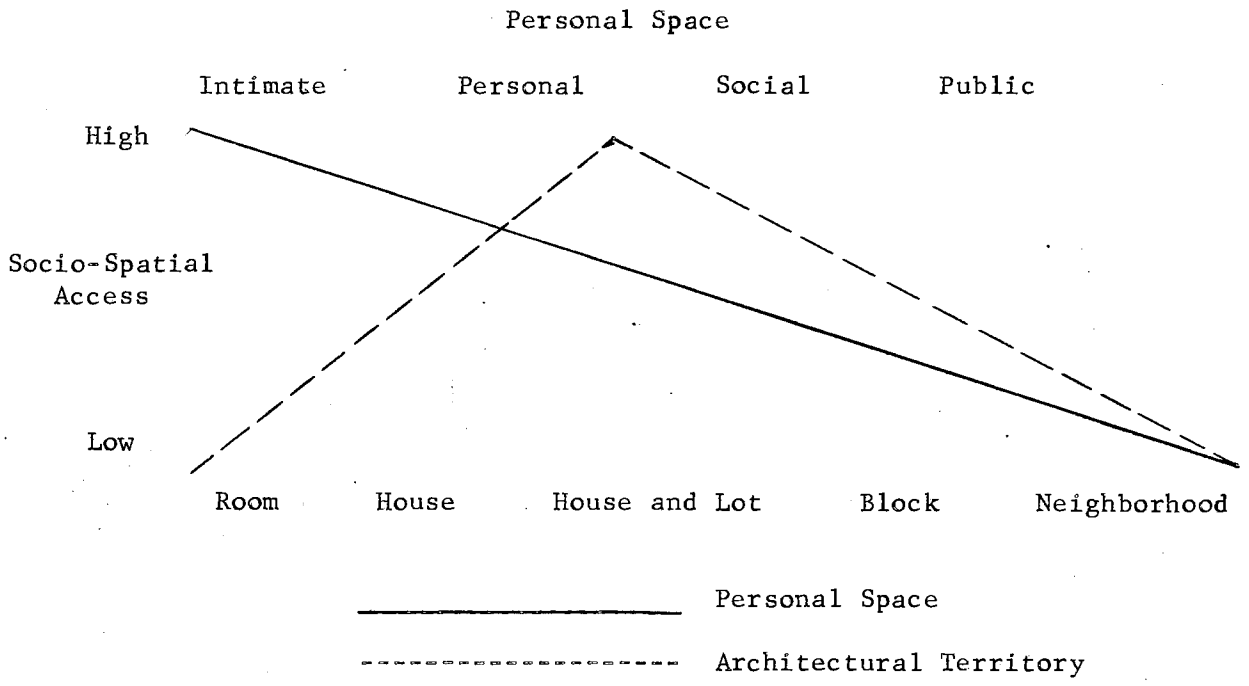

Figure 2. Variations Between Personal Space and Architectural Territory

is more in form rather than social behavioral process. Architectural space allows for social interaction, but this form is the result of cultural values. Architecture is best seen as material culture with the aesthetic qualities exemplifying that culture. Architectural space is manipulated to fit the needs of territorial space in a social setting. This is not to say that architecture is only frills, because the function of art forms is to illustrate values of a social grouping and to be substituted as the actual values in process. Thus, architecture allows cultural imagery, but such imagery cannot take the place of territory used in actual social process.

The discussion of space has been divided into social and physical types with subdivisions of these categories. Such division does not occur in social reality. However, the investigation of various aspects of space can be constructively understood by rational separation. The various qualities of space which have been identified do exist but not wholly alone.

FOOTNOTES

[1]Erving Goffman, Relations in Public (New York, 1971), p. 283.

[2]Edward T. Hall, The Hidden Dimension (New York, 1969), p. 115.

[3]Ibid., p. 117.

[4]Ibid., p. 118.

[5]Ibid., pp. 119-120.

[6]Ibid., p. 121.

[7]Ibid., p. 122.

[8]Ibid., p. 123.

[9]Ibid., p. 127.

[10]J. R. Seeley, R. A. Sims, and E. W. Loosley, Crestwood Heights (New York, 1956), p. 50.

[11]Ibid., p. 45.

[12]Jurgen Ruesch and Weldon Kees, Nonverbal Communication (Berkeley, California, 1966), p. 132.

[13]Ibid., p. 137.

[14]Ibid., p. 128.

[15]Edward T. Hall, The Silent Language (Greenwich, Connecticut, 1959), p. 148.

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CHAPTER IV

DESIGN CONTROL

While an individual may have various degrees of social organization and uses of space, not all socio-physical aspects of a person are controlled by himself. Social organization may shape space, but not all forms of organization control the same space nor the same people. The control and responsibilities of physical areas are diffused leading to various values toward a neighborhood. The previous discussions have been oriented to one's conceptualization and use of space. The statements here are oriented to the limitations of spatial use, the associated values with controlling the space, and the process and structure of design control with and outside of the neighborhood.

The physical form of the neighborhood is the design product of an ongoing desire for change and control through the various checks and balances of interested role groups. The actors in the design process are the change agents of form-giving, decision-making and enforcing. This classification only indicates the function of an actor, not the role and group he represents for controlling the design of the residential community. These are: (1) private development; (2) public; (3) neighborhood; and (4) outside influence.

To gain control for design, all agents must ultimately use similar control mechanisms. Opinions and feelings of such control may vary between role groups and agents which represent these earlier entities, but

a common ground for rational decision making has been established. These mechanisms are structured by law, approved by the community and society, used to implement values for good design, and provide for ecological requirements of the land to be used for change. Agents may use irrational and rational means to gain power outside the sanctioned control mechanisms and may dominate any community-approved change procedures and methods.

The following thoughts on design control are to show how various agents influence change of physical form in the neighborhood. Also, the degree of compatibility and conflict of these agents are accounted for between and within role groups. Many of the statements here are derived from the professional experience of this researcher in planning and architecture.

Form-Giving Agent

The form-giving agents are the initial manipulators of future space for human interaction and occupancy. These agents have the innovative ideas to conceive of the future physical environment. Their aggressive attitudes are the starting force which provides the architectural material culture that society lives with.

Form-Giving Agent--Private Development Role

The instigators of change for physical development are the investors who intend to make a profit in a single family development. However, their only concrete contribution to new form is the desire for such form to be created and for purchasing land properties which give the whole design project an exterior limit. This property limit may

have odd configurations which may influence the potential design.[1] The investor is more concerned with site location than configuration in that he is attempting to form a market place of dwellings. The site of a development will be limited by an investor's interpretation of a reasonable market and by his ability to finance projects.[2]

The functional manipulators of land form in the private development role are the professional form givers. The layout of streets and housing clusters are usually part of an overall plan to allow for physical efficiency, aesthetic acceptability and economic feasibility. Professional form givers are essentially of two types, the design oriented and the construction oriented. The design type includes those professionals identified as architects, urban designers and urban planners. The construction oriented type is more commonly known as a professional civil engineer or residential developer. These construction types sometimes fill the role of the aesthetic designer. However, this is usually done at a lower level of aesthetic quality. The designer type rarely attempts to also accomplish the construction role of determining engineering street details, soil bearing, structural capabilities of material and other similar engineering oriented activities.

The designer's duty not only includes the physical workability but also the successful manipulation of space which will allow a social community to interact and be pleased with its man-made manipulation. Engineering allows a function to work without particular regard to its acceptability to cultural values. This is not to say construction oriented types are not interested in pleasing the public, but their emphasis is on the functioning of things, not people. The designer on the other hand must take cultural values into account for the formation of

a meaningful socio-architectural space related to the existing landscape.

For the designer there is always the ever-present conflict of matching the demands of a social community with the capabilities of the physical environment. It is rather difficult to create a successful New England colonial effect in the desert cities of Arizona or to put a grid street pattern on the side of a mountain. If the designer ignores the capabilities of the physical landscape, eventually the social community suffers. Residential homes sliding down the hillsides in southern California is a result of man's rational desire for an environment not complying with the physical requirements.

It is common for the designer to use a concept which visually ties and relates the various functions and forms of a neighborhood type development.

A typical example would be for single family homes to be located on streets with limited access. These streets are then connected to a collector street which allows automobile circulation out of the neighborhood. Community functions, such as a park and school, are centrally located with the provision of pedestrian movement to dwellings separate from car traffic. Various physical elements are used to tie homes together; this physical unity is interpreted falsely many times as a social unity. A physical organization of form cannot be fully transcribed as community organization. Gutman makes this point clear as he states:

> . . . it is probably wrong to assume that a relevant criteria for evaluating the form a building is whether or not it contributes to community spirit, for the simple reason that building form is not something that is capable of determining a complex social interaction of this kind immediately and directly.[3]

Clusters of housing units and street forms sometimes allow the designer to use these as art forms and not necessarily for utilitarian functions. A portion of the aesthetic of functional forms has little or nothing to do with man's ability to operate in a neighboring setting. The designer many times divorces himself from the function of solving social needs. He is involved with the balance and form of his manipulations for the sake of good form. The act of sculpturing is occurring when one is concerned with the aesthetic quality of the form and not the primary function of directing form for human physical needs. Figures 3 and 4 illustrate this circumstance. Many sociologists have missed this point of the designer in his role of providing plans for neighborhoods. A plan may become reality due to its pleasant form and not necessarily for the needed utilitarian aspects. Therefore, the neighborhood form is partially artistic in nature and not completely the result of human function. Robert Goodman has addressed this issue as he states:

> The once-removed quality of the architects from their clients and the visual nature of the professional reward system have induced architects to develop a theory of design for their clients concerned with the way a building ought to be seen; architecture becomes a 'look at' experience rather than a 'live in' one. The result is to remove further the process of architure from the ken of ordinary mortals who must live in the architects' buildings. By focusing on the visual aspects of building design as a cultural phenomenon to be understood by people who visit art museums or read architecture books, architects proceed to deal with the architecture in aesthetic terms rather than in terms of human use. It is uncouth to speak about how a building 'feels' - one must rationalize the enjoyment of a building in terms of its mass, its proportions, its composition, the clarity of the plan, its significance for our time, much as you would a painting.[4]

The full dimensional qualities of space are often not considered in the residential design plan. Much of subdivision and architectural design is done at the two dimensional level versus a more thorough three

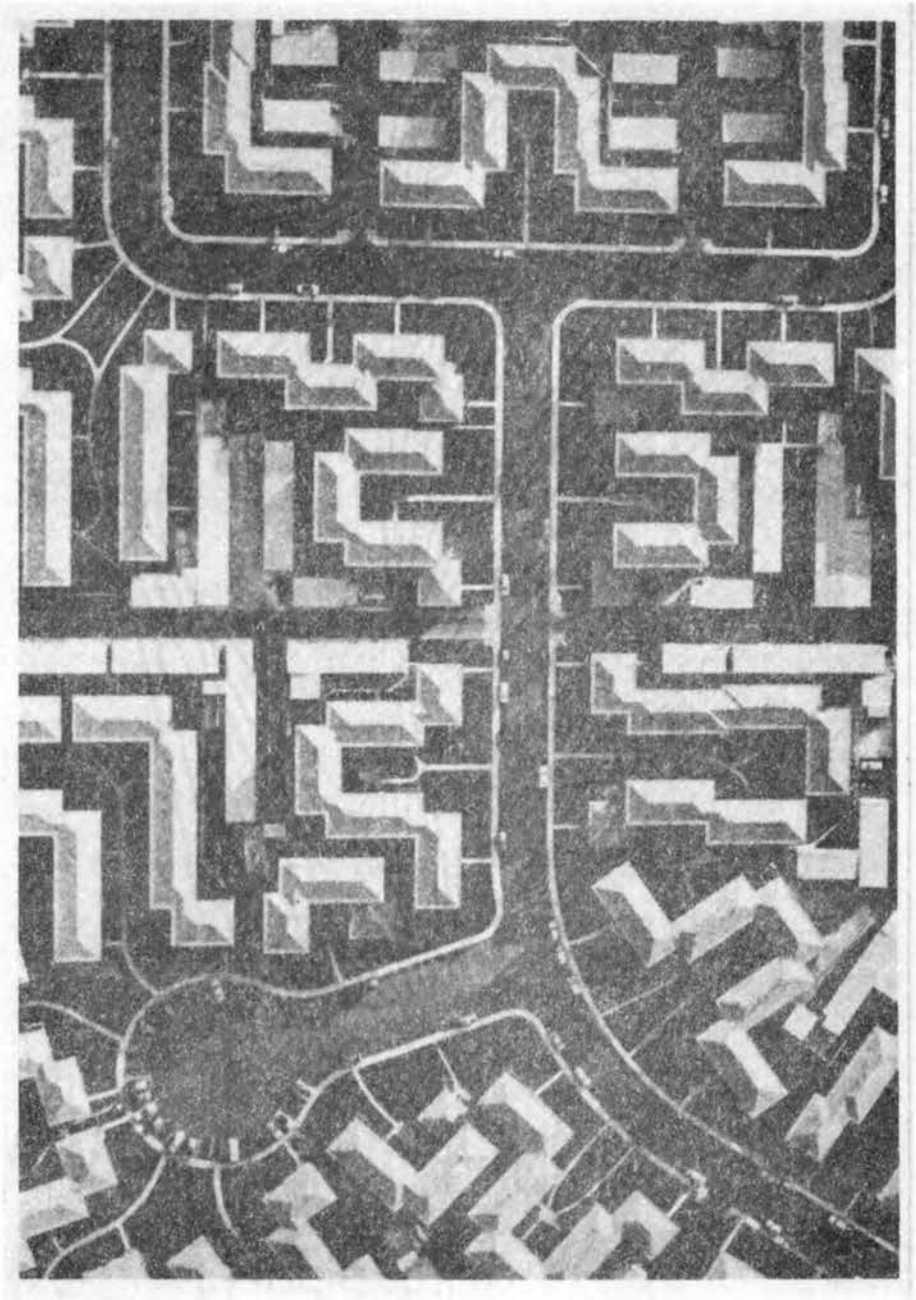

Figure 3. Artistic Use of Residential Subdivision Space With Linear Forms[5]

Figure 4. Artistic Use of Residential Subdivision Space With Curvilinear Forms[6]

dimensional level. The third dimension is considered usually only in terms of topography for water and sewer uses and rarely in terms of human social spaces. Concern for potential vertical qualities of space is ignored partially due to the nature of residential economics and customer demand. Single family homes are designed usually for one story in that a two story home is more expensive and more physically inconvenient. The continued low profile of suburbia over time is an indication of possible designer neglect but also satisfaction of the home dwellers.

It is the responsibility of the designer to interpret social needs and values into a physical form which is compatible with the natural environment. In practice, the designer is unable to completely accomplish this task. His individual interpretation will always be a personal statement, and such a physically manifested comment cannot represent the whole values of the client community that he has been asked to serve.

The construction oriented form giver type in private development largely has the responsibility of manipulating form for the physical safety and protection of the public. The typical example of this type is the professional civil engineer. When he is engineering physical forms such as streets, his emphasis is placed on structural soundness, necessary dimensions for carrying traffic and material economy. The desire for producing a good aesthetic design is less than the want for the most economical and safe structure.

The engineering approach for the construction oriented form giver is highly controlled through the specifications and standards of materials. These honored rules form the limits within which he operates.

The limitations are definitely necessary for survival's sake, but many times the manipulation of these limits are ends within themselves. A civil engineer with a structural background may be more proud of arriving at the most economic approach to using reinforcing steel in street structures than with the form of the street which would satisfy potential users.

The conflicts between the professional designer and the engineer are accepted as a part of professional life in the construction industry. A personal experience typifies this conflict. A landscape architect designing a residential development was placing great emphasis on the curvature of roads in his design. His concern was with experiencing various spaces in sequence as controlled by the vertical and horizontal movement of the automotive street. The path of movement regulated speed to allow one to experience designated spaces for a desired length of time. Psychological elements of surprise, anticipation and aesthetic continuity were implied, and the designer was attempting to emphasize these factors in physical form. After arriving at a design plan which he considered acceptable to himself, he turned in the plan to the engineering section of the consulting firm. The engineers were not fully aware of the landscape architect's attempts. Jokes were made that all the designers ever did was to put frills on the necessities. In converting the design plan into construction drawings, the engineers simplified curves and straightened streets in that the engineering calculations were most efficient and simple to do. Eventually the designer realized what had transpired and became quite upset. The engineers were perturbed, because they felt undue engineering work and inefficiency were being demanded of them.

The engineers emphasized the economics and work efficiency but were not sensitive to social needs beyond survival necessities and to the ecology of the land. The engineer's aesthetic neglect negates consideration of the physical nature of the land. Straight streets may be efficient in relation to engineering technology, but these methods may be rationally inflated above the requirements and character of the natural setting of the land. The tools of engineering may become more important to him than the actual engineering needed for construction. Shepard states a vision of "improved" nature is a common feature in powerful, autonomous engineering cultures, and such a direction of development is seen as part of nature hating.[7] In summary, the engineer is largely an economic, efficiency-motivated form giver.

Another construction oriented form giver in the private development role is the residential developer. His relationship to the designer is somewhat ambivalent as compared to the engineer. The developer is concerned with constructing a well-built product which will meet safety standards, but he is also concerned with marketing a home which is pleasing to potential buyers.[8] The majority of his efforts are directed to supervision and contact with contractors for various building elements, such as electrical and plumbing work, acquiring bank loans for continued building and the presentation of homes for sale. Due to his multi-function role as a form giver, he is not only construction oriented but also design oriented. Many times he selects floor plans, exterior materials for decorative effect, and even the color of a bathroom lavatory. He is the contemporary master builder in that his work involves all the elements of form manipulation.

In recent years the residential developer has become more

sophisticated and successful on a larger scale by being involved with the financial and speculative aspects of development.[9] Within his organization there are other hired personnel who are in charge of construction and design. While the developer has seemingly escaped the dirty work of constructing form, such as a carpenter or plumber, he is still responsible for causing such form to come into existence.

The form givers in the private development role, are the formulators of new dreams and approaches who bring forth the rational means for changes to come into existence. The power of the professional, the architect or engineer, lies in recommending changes which demonstrate innovation of approach and whose form is able to solve the situational problems. The residential developer who may or may not use professional services carries many roles, but the developer or construction manager in a large development corporation makes decisions about the use of materials for giving structures form at both small and large scales.

Form-Giving Agent--Public Role

The form-giving agents in the public role function to review and make recommendations regarding the desire for private development to build architectural and engineering structures. This public role takes place at the city and county levels of government, and the form givers within these agencies are largely professionals, such as city planners, engineers and sometimes urban designers and architects. Public agencies occasionally become involved in generating residential projects, but the emphasis is on public housing in multi-family structures rather than on suburban single family homes.

The public form givers play an important role in design though not

initially forming spaces. Instead they recommend that certain portions of a private development plan be reworked to facilitate a better design and to conform with local regulations and the community plan.[10] A designer for private development may prepare a residential layout for suburbia with which his client is perfectly happy. However, the client's satisfaction cannot be equated with community agreement with such an approach. The public form givers will manipulate these forms until an acceptable plan results with the approval of both public and private agents.

The conflict between design-oriented and construction-oriented professionals in the private development role also occurs in the public roles, but the intensity and character of differences vary. The city planners and other public designers are not as involved in the form giving process as those who formulated the design concepts in the private development role. The design concepts are not initiated and do not belong to the public form giver. Also, the public design-oriented agent must review many plans, and any strong attachment to a particular project is usually not possible due to his other design reviews and duties. The designer in private development may have more than one project, but his efforts are limited to only a few. The public agent has a larger scale of area to concern himself with while the private designer is usually more limited in scale.

This situation between design-oriented form givers in private development and public roles also applies to the construction-oriented form givers. City engineers have the responsibility of an entire community and cannot focus intense feelings on one part for a great amount of time.

City engineers are often responsible for engineering local streets, which gives them a greater thrust as form givers than the public design-oriented agent. A city planner and city engineer may conflict on general design approaches, such as how sidewalks should be placed in relation to the street and home. However, a general understanding of what is to be done about such issues is resolved through mutual cooperation from project to project. They subdue their differences realizing that a decision must be made in a short period of time.

The planner as a public form-giving agent has one unique power which is absent among the other professional agents. Other form givers may argue and agree over the manipulation of physical forms on a particular site, but the city planner has the authority to recommend to the public decision makers that the proposed private development plan not be approved. For single family residential development and rezoning he rarely exercises the rejection of such a residential plan. However, other land use activities surrounding a residential area which could change the physical dimension of a neighborhood may be prevented.

The form-giving public agents may be more accurately described as reshapers of potential residential forms rather than the initial space definers. Their role includes review and recommendation of neighborhood forms normally through subdivision plats. Emphasis is placed on the conformance to local ordinances to assure the health, safety and welfare of the public. These public professionals usually develop ordinances which work as legal design controls on private development. Beyond the stipulated authority granted in these ordinances, the public form-giving agents attempt to personally influence private development agents with their beliefs in good neighborhood forms. The city

planner's potential threat of not approving a residential subdivision plat which may completely conform to the local ordinances is his power to assert personal design beliefs. The private development agents do not wish to be turned down by the decision makers for a poorly designed plan which might affect a zoning request. These public agents have power in their recommendations to the extent that all agents realize the degree of acceptance by the decision making agents.

Form-Giving Agent--Neighborhood Role

The form-giving agents in the neighborhood role are overwhelmingly the neighbors themselves. Simmel has given a theoretical statement that one becomes more and less an individual when he enters a group.[11] The same theory applies to the neighbor in regard to the other form-giving role agents. An individual has more and less control of form when he comes to dwell in a neighborhood. The aforementioned statements concerning private development and public form-giving agents illustrate that a potential neighbor has been highly restricted in relation to existing design controls. The streets, green areas, and his future home have been designed normally before his arrival into the area. It is as if one is directed into an environment, and an individual is told to choose one of many holes already dug. His real choice is which cubby hole to live in. Very little control is allowed for the neighbor except whether or not he wishes to live in a particular neighborhood. Kaiser and Weiss note that in the residential mobility process the household has only the decisions to move and to select a residence.[12] The initial effect of one entering a neighborhood is that he has no control over the design of his spatial environment.

The degree of control approved and implemented by private development and public decision making agents is always present due to property boundaries and public streets. Over time, the neighbor gains more control and power through the space manipulation of his own private home and lot. A neighbor will landscape, paint, expand the size of the home, add outdoor furniture, and produce other small details which represent the values of the household. Other neighbors will do the same, and eventually the spatial character of a residential area can drastically change.[13]

In Levittown, New York, after the initial construction of neighborhood areas, the architectural character was soldier-like and bland in appearance. Each house looked much the same, and the structures were spaced equally apart generally. Variation of space and color were absent. As individual households began to make physical adjustments to their homes, a more heterogeneous visual character began to emerge. Houses were painted various colors, and trees along with shrubbery visually broke up the mechanically laid out residential lots.[14]

The actions taken by these neighbors may have been community efforts to improve the look of the neighborhood. More feasible is that the result was a group of similar individual efforts to improve their homes visually through different choices of design media. An example would be that all neighbors decided individually their yards needed trees, and one neighbor may choose an elm tree while another decides to grow a maple. The separate efforts produce a grove of trees on one block which are probably asymmetrically placed. The individual tree plantings visually may seem the result of a group decision, but the decision is more likely located within the family of the household.

Even though the decision may be localized in the home, a contagious effect of neighborhood tree planting might initiate the desire for adding to one's personal landscape.

Group design elements for neighborhoods are rare, but such activity can be seen in the design and maintenance of common areas, such as the planted circle of a cul-de-sac or the landscaped median strip of a boulevard. In Country Club, Missouri, a very exclusive suburban community of Kansas City, some residential streets have sculpture and ornamental vases on the corners of the block to designate an entrance into the neighborhood. Such examples are not the results of home developers who build brick entrances to residential areas with an austere name. The example for this Missouri upper income community is not typical. However, it represents a pride in design by those living on such streets.

The neighborhood form-giving agents control the design of their environment at a small scale; whereas, they have been controlled by the private development and public form-giving agents. The cumulative effect of individual design efforts in the neighborhood brings forth a change in imagery. This change seems to be as forceful a statement as those who formed their space initially. The neighbor's efforts are mainly limited to his own ownership.

Form-Giving Agent--Outside Influence Role

The outside form-giving agents do not usually participate in the design or analysis of any particular residential project within the community. These agents are involved with the development of ideal type of pacesetter designs. Also, they attempt to analyze our failures and

shortcomings and identify means for redirecting them. One type of outside agent is the influential designer. Probably no one man has recently changed the concept of residential architecture as much as Frank Lloyd Wright. From other architects to housewives, people have been strongly affected by his thoughts and the visual results. Such a designer reaches nearly the entire spectrum of persons who may become involved with design in a given society. This type of designer must be considered a master form giver, a teacher for others. The organic architecture philosophy by Wright is seen in the work of other architects, residential developers and households. Frank Lloyd Wright's effect on American architecture is unusual in that he was so popular with many diverse groups of people.

There is also another influential designer type who affects design and form, and this form giver of ideal types causes fellow professionals to change but does not necessarily affect the general public. Clarence Perry, who developed the neighborhood unit concept plan in the New York City Plan in 1929, has influenced other fellow planners and designers in residential development.[15] The public may see such a residential design approach in their community and may assume such work comes from professionals.

Hardly anyone would know the final product was the result of the design model developed by Mr. Perry. This ignorance of the man may be found with the actual project designers, but his thoughts remain even though his known personality does not. The configuration and manipulation of form in a neighborhood may be the indirect influence of these designers who have organized a new approach. The change that these outside form-giving agents cause is monumental in that their ideas are

passed to a large multitude of form givers.

An indirect form-giving agent in an outside role is the design-oriented journalist. There are essentially two types who function for different audiences: (1) professional-directed; and (2) public-directed. The professional-oriented are those individuals who write for the professional form giver such as the architect and city planner. A writer may include other nondesign-oriented disciplines in his writings due to the nature of his subject. Jane Jacobs and Lewis Mumford have affected the works of designers, but their works include more than form itself. Sociology, economics, geography and other social sciences are included. Writers who more directly affect form develop their comments in design-oriented, professional monthly journals and books. Techniques and new forms of recent design projects are presented to forward new ideas to designers. The journalist exercises one main function for a professional; he is responsible for bringing new design forms into publication so that a larger audience of designers may become familiar with the design approaches. It is particularly true that architects spend little time reading a journal, but they will search the publication for illustrations which will provide a new visual form or concept which may be applicable to their own works. Designers are not only form givers but also form seekers, and the journalist allows him a readily available tool to search with.

The general public-oriented journalist must present information to the masses which is less technical and philosophical. An American magazine, Better Homes and Gardens, is typical of the journalism oriented to helping an individual to improve the design of his dwelling.

The majority of such writings and illustrations have been oriented

to suburban single family homes, but a quick look at the newsstand will indicate more publications concerning apartments. Such printed material allows the household to readily obtain new ideas for changing form in their ownership. The explanations are oriented to the laymen; whereas the professional design journals are more philosophic and theoretical in regard to discussions of space.

Influential writers and designers may come and go along with their works, but there remains a stable foundation for such individuals to practice and continue the art of design. This firm grounding is identified as the professional design institution. An organization such as the American Institute of Architects supports and assures the continuation of professional schools, legal assistance, individual certification and the general perpetuation of architecture as an art and science. Professional sanctioning of good design work tends to bring such approaches to a larger audience; therefore, the chance of those designs being used increases. Professional institutes as organizations do not directly influence neighborhood form. However, these groups support their member's endeavors to enact positive change by maintaining design quality through academic training, professional sanctioning and research.

Decision-Making Agent

The decision-making agents for design are ultimately responsible determinants in the approval of form-giving plans. As with the form-giving agents, there are the same four roles in the decision making network-private development, public, neighborhood and outside influences. Two levels of decisions are made in regard to these roles. A decision

making agent may make a judgment regarding design control within his role group. Secondly, he may use his role as a mechanism to make a decision outside of his representative group.

A decision maker may make general policies and other decision-making formats within his role group anticipating specific requests for judgments concerning form manipulation. Conflict and agreement will occur along with ambivalent positions concerning unresolved areas of spatial interpretation. When the different role groups confront each other in a variety of combinations, decisions will be made by dictate and/or cooperation. The distinguishing characteristic is that in such a cumulative body, the decisions are beyond the confines of the single role.

The decision makers may work with form-giving agents in the rational manipulation and control of space, but such configurations are on paper and in the minds of men. It is not until a judgment to implement these ideas is made that the realization of these potential forms can be seen as the beginning of physical reality. The form givers largely develop the design; whereas the decision makers allow such concepts to become physical reality.

Decision-Making Agent--Private Development Role

The private development decision-making agents have one specific qualification which distinguishes them from other agents in private development. This aspect is the control of the economic condition. The manipulation and building of form which may affect social behavior requires monetary resources from those actors willing to give for design endeavors. These agents are largely identified as executives with a

development corporation, private investors, stockholders, and money lending institutions.

These interested parties work together in attempting to develop a product marketable for profit. The concern for quality design is determined mainly by the type of market to be established and by the desire to produce a good design for quality control. A corporation whose role is developing single family residential areas will choose those design forms which are considered the most salable which have an acceptable margin of profit. The dollar-oriented developer places a great effort on adequate returns of an investment. In the eyes of the general public this developer type receives a great amount of adverse criticism, but he does have his counterpart in the residential developer who believes that the physical result of his work does mean more than a realized economic gain.[16] The small company may take great pride in the quality of the designs that it produces for potential residential buyers, realizing quantity of development is not necessarily a measure of worth. Some corporations are willing to take a smaller profit if they feel they are doing quality work and their customer is truly satisfied.

Larger development corporations now attempt to market for residential living an entire community, rather than simply the confines of a home. Such efforts have come about for two reasons: (1) the need to be more competitive in a buyer's market; and (2) the overall planning of large land packets resulting in unitary designs which are more attractive and acceptable to the social community after the corporation is gone. The quality of his works will follow him even after the last home of a development is sold. Gans expressed the serious concern of William Levitt as to the image of his Levittown communities.[17]

Decision makers in money lending institutions have a limited concern of design quality when a residential developer requests a loan. The lender is interested in design to the extent that he feels that such a product is marketable and to the ability of the potential borrower to pay his debt. If the residential development proposal is dramatically different and possibly better than present choices on the housing market, he may very easily turn down a loan request in that he questions the ability of the project to generate a profit.[18] When such lending institutions do make a loan decision in favor of such development, they display to the public their desire to build a better community. Such statements may be true, but there seems to be an air of promotionalism rather than true intent. The lender is largely concerned with the financial abilities of his contracted debtor to repay his loan. To the extent the lending institutions are willing to release monies for development, these agents control the growth and eventually the form of the community.

The private development decision-making agent may become involved with the quality of form and capabilities of such forms to come into existence, but the overriding concern of his role is the generation of a profit. He must do so. For this agent to survive in his function, he must realize an economic gain to sustain his position as a decision maker in the free enterprise system among other decision roles.

Decision-Making Agent--Public Role

The public decision-making agent includes two types, the appointed official and the elected official. An appointed official has been selected for his stature in the community or his select knowledge on

subject matter related to his position.[19] In residential development the group of appointed officials which are most involved in the decision-making process is a planning commission. The task of this group is to make an independent decision concerning potential development with freedom from the community and special interests.[20] This group's judgment is a decision for recommendation to a higher elected body.

The role of such a group is advisory in nature. The free flow of thought is considered to be present since the members are not subject to removal by the public. The intent of decision making for community development is that a group of individuals can come forth with a rational decision of all members of the community without partiality to particular interests. However, in practice such impartial quality decision making has not historically taken place.[21] Persons who are knowledgeable about physical development are normally selected for such positions. This knowledge is usually gained by doing business in development within the community. Miller's research indicates that ". . . business men are overrepresented among 'key influentials' and dominate community policy-making in most communities."[22] It is not unusual to find a real estate agent or developer on such a local panel.[23] One cannot escape a private role completely and replace it with a public role.[24] Due to the make-up of such a commission, these groups tend to be more development-oriented than an elected body. A person who does business every day for the promotion of physical development, such as a real estate agent, will normally maintain such personal beliefs, even though he is a member of this commission which supposedly does not serve special interest groups.

In a positive respect a planning commission does serve

constructively by making development projects to comply with the community plan. It recommends to developers changes that should be done to meet the requirements of this community document. However, a developer only has to comply with ordinances and not requests, since the body only has an advisory capacity. Other groups, such as the board of adjustment, have a role in the manipulation of physical form through the variance of local controls, but their function is quite minor as compared to other public decision groups.[25]

The largest area of confrontation that a planning commission has in regard to the neighborhood is rezoning requests by developers which may or may not be in compliance with the desires of the members of a neighborhood. The importance of such action is that while an initial design for an area has been implemented, the character of that area may be changed due to a newly introduced design which is different. Traditionally one can see such anxiety of neighbors with a proposal of a shopping center in close proximity to their homes. The commission may receive adverse comments on both sides of the fence, but it is largely immune to criticism.

Another decision area in relation to neighborhood form which receives little or no attention is the review of residential subdivision plats for single family development. The recommended approval of such form manipulation is important in that it is rare when an elected city council reverses the decision of such a document. The planning commission has been informally granted the power of final comment on the manipulation of streets and lot configurations in this phase of suburban development.

The next level of decision making in relation to design control

lies with the elected public official. This holds true especially for physical development when requests for rezoning are made. If no such action is needed for the use of land, the private development decision-making agent is the ultimate voice. In the development of single family neighborhoods, conflict is small among the elected officials, because the single family home is traditionally considered the most protected and highest land use in zoning.[26] Neighbors are happy in that such residential building assures them of protection from other undesirable land use development. Historically, the neighbor's overprotectiveness of residential districts has been referred to as "snob zoning."[27]

The final approval of subdivision plats by an elected city council is important to neighborhood form in that it is a positive grant for the manipulation of land for actual residential spaces. This residential space in the neighborhood is dramatically absent of conflict, but areas surrounding the occupied development do not have such tranquil acceptance.

Rezoning requests by developers which conflict with the desires of the neighbors are the final responsibility of an elected city or county council. The birth or death of potential design form resides in the decisions of such boards. When a city manager is present in a community, he has some power to affect council decisions. Since he is at the center of events where all communications converge, the councilmen must depend on the city manager for their information. Whether this appointed professional likes it or not, this containment of information gives him control over the council.[28] A sharp difference in the atmosphere of decision making occurs with the elected officials and their appointed counterparts. An inverse relationship between the elected and the

appointed officials resides with authority and independence. The elected officials will normally be less independent in their comments and decisions than the appointed officials. However, they have more decision authority and responsibility.

As found by Altshuler in his study of the municipal structures of Minneapolis and St. Paul, Minnesota, elected officials tend to be more in servitude to the community interests rather than being leaders in directive thought.[29] If conflicts can be resolved outside formal approval, the elected officials will use these resolutions as the basis for a decision. When conflicts cannot be resolved, a judgment must be made which is eventually favorable to one party and unfavorable to the other. Decisions which involve single family areas are usually made in favor of the residents. The decision is political in nature and does not necessarily represent a logical result of thought concerning a change in physical design. The residents represent potential supporters or opponents of an official reseeking office. Sometimes decisions are made for political survival rather than on the merits of a rezoning request. Some officials do feel that the residents who reside adjacent to the area in question should have a determining voice in physical change. Babcock remarks that under a ward system an entire city council will abdicate neighborhood decision-making results in favor of the desire of the neighborhood's legislative representative through the doctrine of "aldermanic courtesy."[30]

The highest level of public decision making for design control resides within the various judicial courts, including municipal, county, state and Federal courts. A private development agent may not only disagree with the decision of local elected officials, but he may also

believe that such a judgment is not within the limits of the law. At this point the potential shape of urban and suburban forms leaves the realm of community control. Any form of local influence on the judicial representative for such civil cases, especially at the state and Federal level, is highly removed. A realistic transference of decision from community to society is apparent here. These decision makers have a distinct transference of commitment in their particular judgments. While a city or county commissioner will abide with the law in local ordinances, such as rezoning, he will attempt to somewhat fulfill the desires of his community. A judge has an emphasis on commitment to the law rather than to the community involved. Webster notes that such agencies, as the courts, assume no initiative. They serve as restraining forces when various interests threaten to disturb the stability of the existing order; this places such groups in an umpire role.[31]

Residential forms from these commitments are then not always dependent on local community influence but ultimately on the laws of society at large. The first landmark instance of neighborhood form being affected by zoning at such a level was the Ambler Realty Company versus the Village of Euclid, Ohio, case as reviewed by the U. S. Supreme Court in 1926.[32]

The public decision-making agents generally are seen as serving the community above special interests. In cases of rezoning the appointed and especially elected officials are more greatly exposed to the public. Such decisions have a great effect on the urban form of the city which in turn will eventually affect the various residential neighborhoods. The approval of new single family development plans is essential to residential form, but these sanctions by public officials go largely

unnoticed due to single family residential development receiving the least demanded restrictions by the community. The judicial system can influence suburban forms beyond local control, so ultimately control lies within society and not the community.

Decision-Making Agent--Neighborhood Role

The neighborhood decision-making agent for design control is largely seen as the neighbor himself. His realm of decision control is specifically his own personal property of house and lot. If a man decides to landscape his backyard, no one will normally bother him in his endeavor. The extent of decision making for design control on his own property does not include those changes which legally include health, safety and public welfare. A neighbor may desire and be able to afford an addition to his home, but he must receive a public building permit to do so. The extent to which an individual controls his residential environment is restricted to design features which will not critically affect adjacent neighbors and possible future occupants in his own dwelling.

One cannot assume that a person will never develop design features which may cause neighborhood discontent.[33] A street could contain homes which are all painted white except for one that is done in red. Only in exceptional cases, such as a historical district, could a neighbor make the individual paint his home differently. The individual can develop neighbor discontent, but usually he will attempt to be in conformance with his neighbors rather than cause local conflict.[34]

A neighbor does not always assert design control on an individual level. He may use group power to change another neighbor's use of

space.[35] The use of neighbor power can be seen with the arrival of a new neighbor. A fellow colleague moved on to a street where no fences for backyards were built. During the first week of the family's residence, adjacent neighbors came to the household to introduce themselves and welcome the new family. At the same time, these individuals asked whether or not the household was thinking about building a backyard fence. They hoped their new neighbors would not interrupt the existing open space. My colleague and his wife were put in a precarious position in that they wished not to offend anyone, but they quietly wanted a choice on the matter. The result has been that a fence has not been built to date. The importance of this decision is that the neighbors decided informally to have their residential block in a certain physical format. This judgment was forwarded to the new arrival with the ultimate choice being with the new neighbor. The effects of this neighborhood decision will be discussed later.

The neighbors may group together and decide to force a neighbor to remanipulate his space of personal ownership through local authorities. A typical example might be the storage of large articles or the housing of many animals. Informal neighborhood power may be used by the households on the street, but eventually legitimate means of complaint will be utilized if the informal approach does not bring about a significant change in spatial use.

In Arlington, Virginia, an architect designed a very contemporary home within a more traditional-oriented residential subdivision, and the neighbors felt the design of his home disrupted the spatial continuity of the block. The fight became so bitter that the matter was taken to the State Supreme Court. No clear precedent had been made in such a

situation, but the neighbors won the case. The house had to be torn down to satisfy the court judgment which also represented the desires of the adjacent neighbors.[36] While the neighbors did not have the legal decision power to change the situation, these households did make a group decision to attempt a desired change.

The importance of this example in reference to the use of public authority is that neighborhood representatives and selected consultants are used for decision making. A spokesman from the neighborhood may be chosen by his fellow neighbors to present their opinions, and legal counsel may be also hired by the neighborhood to present their case. Fellman addresses the complainant neighbor's need in the following:

> The complainants have little technical expertise, and they fear that the greater knowledge of the authorities will overwhelm them and that their doubt about what they are doing will be discovered by others and by themselves. Therefore, it is only reasonable for them to ask help from nongovernmental professionals who can aid them in evaluation, mediation and counterplans.[37]

While the architect's house presents an example of the control of internal neighborhood space, the more typical conflict is with the rezoning of properties. It is not common for neighbor to be against neighbor in these cases; the neighborhood is usually in conflict with an outside force, such as a developer asking for rezoning to build a shopping center or apartments.

The main factor in regard to the neighbor at the community level in decision making is not his ability to force a change, because he does have that authority. The main thrust is the neighbor's ability to decide to fight for change with the group. In such a situation Nutall, Schench and Gordon state that ". . . it will be primarily the actors without influence who will try to change the mode or structure of a

decision-making system."[38] For the individual on his personal property, the desire and ability to change without conflict with other neighbors largely lies within himself. Beyond his personal ownership, decision making is reduced to desire with no authority.

Decision-Making Agent--Outside Influence Role

The outside decision-making agent which affects the spatial form of the neighborhood is somewhat difficult to define. The judicial courts at the state and Federal levels could be seen as outside influences due to geographic location, but their public role is more definitive of their nature as a decision-making agent. The main distinction of the outside role is the lack of direct involvement in decision making at any level. However, the influence of such a role is felt by the neighborhood.

The support from other neighborhoods and special interest groups in local decision-making endeavors must be considered outside in character. A neighborhood may be attempting to prevent rezoning to commercial uses of certain properties in their residential areas. Other neighborhoods may support them in that they feel their area may be faced with the same situation in the future. A conservation group may be involved in that the rezoning may destroy natural amenities, or a cultural group may be concerned over the destruction of a historical building. Other interest groups may be involved which have reasons for deterring spatial change other than the ones of the neighbors directly concerned.

In opposition to the neighbors, adjacent landowners of undeveloped land may be highly interested in the possible success of the developer in his rezoning request. This predevelopment decision of the landowner

to hold or sell land depends upon the ability of the land to generate future profit above the existing market value.[39] Schmid notes that the landowner ". . . will fight any zoning or land use plan asking him to forego economic rent gains while his neighbors receive the benefits."[40] If such a redesignation of land occurs, not only potential spatial arrangements are changed on the land in question but also property values of nearby lands are automatically inflated, thus affecting the suburban form. These landowners usually support a developer to increase potential profits from land sales. Their role is largely subdued and sometimes difficult to identify, but their comments contend that building provides economic growth and a better community. In public meetings it is not unusual to find other developers supporting the developer making a zoning request. Each one realizes that when he asks for a land use change, he will want to be supported by his fellow developers.

Bankers and other loan businessmen are interested in higher land use which will generate more loan requests of a high expenditure type. Other businessmen may or may not wish for such change to occur. Their business markets may be increased or diluted depending on their ability to expand in such a proposed development. The institutionalized outside influences of business in development of commercial lands is the local chamber of commerce. The opinion of the business community concerning development of urban and suburban lands will be echoed through this private agency.

The outside decision-making agent does not have any direct role in affecting neighborhood spaces, but his decision can be seen as the desire to change rather than the authority for change. Personal power may be used to try to influence public decision makers. A conservation

group may use the power of a convincing presentation of data, whereas a large landowner may attempt to influence a commissioner if he is a personal friend. Nuttall, Schench and Gordon would identify the landowner as having manifest influence in that he has control of a resource which allows him to exert power as long as he holds the land.[41] The outside role may be in view of the general public or not at all. The determination to influence a legal decision may carry much power depending on the outsider's personal or group power.

Enforcing Agent

The enforcing agents, like the form-giving and decision-making actors, have the same four role types which influence design control. Where the other two agents have been directed more in the development of form, the enforcer is involved in the maintenance of design controls previously determined. His personal concern for spatial form in the aesthetic sense varies depending on the role he is in, because the major emphasis of the enforcing agent is the health, safety and welfare of the public he serves. When the enforcing agent comes into action, neighborhood form is in the process of being built or already in existence.

Enforcing Agent--Private Development Role

The private development enforcing agent of design control is first viewed in the building contractor and/or subcontractors who supervise the construction of the actual structures within the neighborhood. Bulldozer operators, carpenters, plumbers, street pavers, etc., actually build the specified shapes under the enforced supervision of the contractors. Single family residential unit areas rarely involve the

inspection of the contractor's work by a design-oriented professional, such as an architect, because residential developers are overwhelmingly responsible for house designs in U. S. suburbia.

The residential developer may carry the role of the contractor for construction. However, his enforcement quality as a developer is seen through the promotion campaign of selling new homes which were not sold in advance of construction. The promoter role sets a stage to enforce the qualities of the home. He will plant grass and shrubbery, use display furniture and give guided tours to make a favorable aesthetic impression on potential buyers. Goldman notes that the residential developer concentrates on displaying fully automated kitchens to encourage home sales; this technique is used to cover other lacking qualities of the structure.[42] The commercial show carries a joint air of falsehood and truth in regards to good design as the promoter explains and displays the controls he has used to build a quality home. He may exhibit the physical qualities of good design control, but he also attempts to sell the house as quality living which he is unable to guarantee. The same promotion act for displaying a used home may occur. However, the enthusiastic advertising is normally absent in that the real estate agent does not emphasize promotion as much as the residential developer who deals with new housing.

An indirect enforcing agent for private development is the money-lending institution. Home loans assure the building of dwelling space by the builder and the continued maintenance of the dwelling by the neighbor as long as loan agreements are honored. Insurance companies insuring homes for fire and vandalism enforce the continued existence of the home by assuring the neighbor protection of his dwelling space in

time of need. If the house is damaged, the insurance controls refurbish the home to the previous design spatial condition. The commonality of private development in relation to enforcing design control is that spatial quality is enforced, but at a price. Private enterprise must make a profit if it is to continue as an enforcing agent.

Enforcing Agent--Public Role

The public enforcing agent has essentially one task, to maintain the law which is devoted to the control of spaces. The public officials may care for good aesthetics, but their main responsibilities are in regard to health, safety and public welfare as defined or assumed within design controls stipulated in law. The public role in enforcement is limited by the legal aspect, but the individual actors use personal incentive along with a degree of community responsibility to make the controls more than mental manipulations.

Local government at the city or county level controls the actual physical limitations which are placed on the physical residential areas. In small communities no controls may exist, but those communities large enough to have suburbs, and thus usually defined as cities, include some organizational structure which is identified as a code enforcement function. The personnel are more commonly called a plumbing inspector, housing inspector, electrical inspector, fire inspector, etc. A city engineering department will usually furnish an inspector for streets under construction. These enforcing agents are highly concerned for safety of physical designs within the structures.[43] A more appropriate label for these actors might be survival enforcers in design control; the continuance of human life is much in the minds of these inspectors.

While the survival enforcers are concerned about the law for the preservation of life, they are not overly involved with one's rights within the law. The municipal attorney, elected officials and certain appointed officials, such as planning commissions, are highly active in determining an individual's right to use space. An inspector is concerned about a side yard for a single family home in relation to fire safety. A legal oriented enforcer is mainly wanting to know if the neighbor is obeying the law regardless of the neighbor's physical survival. The concern for aesthetics in regard to legal discussion is largely absent. The main legal agent, the city attorney, is totally involved with one's rights as applied to written law. Richard F. Babcock, a renowned planning lawyer, demonstrates this legal viewpoint in his criticisms of planners who emphasize design as he states:

> In their strident criticism of stifling impact of traditional districting on design, these brick worshipers forget that it is not districting that is important but what we believe to be the consequence of districting; certainty and objectivity in the legal rules which control the affairs of men.[44]

The appointed and elected officials may be attempting to protect residential spaces by a consistent zoning policy of preventing undesirable land uses from invading suburbia. While neighborhood spaces may not be under change at the present, the potential development of land uses adjacent to the residential area might affect the physical and social quality of life. When the public officials are concerned with individual rights, their decisions on design control are more community value-laden than those of the attorney. The survival enforcer, such as an inspector, and the legal enforcer, a city attorney, are somewhat polar in interpreting enforcement. Public officials usually combine the directive thoughts of both types.

Enforcing Agent--Neighborhood Role

As with the other two agent types the neighbor is mainly identified as the neighborhood enforcing agent for design control. As an individual enforcer he is directly concerned with his own ownership including the house and lot. Personal pride and desire for an aesthetically pleasing environment motivate a neighbor to maintain his personal domain. His enforcement of his realm helps in enforcing the quality of the neighborhood space. The works of his fellow neighbor somewhat encourage him to maintain at least an equal stance in the physical presentation of his property. A revolving contagious effect is somewhat in operation; one influences his neighbors and the neighbors influence him.[45] The degree that such an influence is taking place can be questioned, for there are always those deviates who decide that keeping the lawn neat and tidy is not very important no matter what the neighbors think.[46]

In discussing the neighborhood decision-making agent, the actual example was made of a group of neighbors deciding that it would be undesirable for the street to have backyard fences. After the consensus was stated, that judgment was placed before the new neighbor. The newcomer was placed in an uncomfortable position of saying "no thanks" if he decided that the family should have a backyard fence. Enforcement was brought about using informal power to continue informal mores. The power of neighbor design control is as strong as the willingness for the dweller to accept a physical limitation desired by the neighbor group. Whyte notes that such physical conformity occurs not from simple cowardice but out of a sense of brotherhood.[47] Sometimes public regulations

on design control are inadequately enforced due to lack of efficiency or economics. The neighbors may enforce such conditions if they find the situation favorable to their spatial environment. An example would be large trees and shrubbery which add to the local aesthetic. However, such natural growth may interfere with right-of-way areas designated for public use. Normally the neighbors will act to influence local government to carry out regulations so as to fully protect their residential area. A typical case is when the neighbors are upset with the building of a large dog kennel in the backyard of a neighborhood dog lover. The extreme dislike by residents of the contemporary home in Virginia mentioned previously as disturbing the traditional suburban setting also displays the neighbor's use of regulations to his advantage.

When neighborhood informal power does not acquire desired design controls, more organized attempts are made for change. Representatives may be selected to deal with matters in a public forum such as a rezoning case at a city or county commission meeting. If the group feels they are unable to be effective in their effort for design control, legal or design counsel may be hired to present their case in a more profound manner. Their actual reasons for design control may in fact be intellectually shallow, but a more elegant argumentation will be given covering the issue in greater sophistication. The particulars are only important to them to the extent that these arguments will allow the neighbors to receive a favorable decision on their original intent.

Enforcing Agent--Outside Influence Role

The outside enforcing agents are comprised of a variety of interests, but the unifying factor of all types is the attempt to set forth

standards which they do not enforce directly. Actual enforcement mechanisms which may or may not be law can dictate or influence local public enforcing agents. These outside enforcers are somewhat in the shadows of more visible controllers of enforcement, and with less exposure, these outside actors tend to be more independent.

Outsiders of a public type can be seen in personnel in state and Federal agencies. Funding of local community development by these functionaires usually requires a municipality to have design controls of a sufficient nature to adequately maintain physical facilities and occupants. For instance, water and sewer grants are not made without an acceptable community plan and implementation tools, such as a building code, zoning ordinance and subdivision regulations.

Highly specialized private interest groups which have particular perspectives to design control are institutionalized at local, state, regional and national levels. The Sierra Club is interested in the conservation and preservation of areas from intensive development to protect the beauty of the natural landscape.[48] National building code institutes attempt to evaluate materials and develop written standards to control the design use of such materials in construction.[49] Local organizations may be formed to promote development of parks, to regulate the location and types of schools and to review neighborhood services.

Media in the form of periodicals and film presentations by private enterprise provide information and new ideas to the public for having better design controls within the neighborhood. These sources act as enforcements in that they are constant in their efforts at causing the development of better controls. The magazine, The American Home, is continuously displaying to its audience ways to improve the design of

their home and maintain it in a more efficient manner. Other presentations may be more or less sophisticated, but the message is much the same--make your world a better place to live in by using advanced methods of physical design control.

Summary

In conclusion to the discussion of design control, one must realize that the division of agents and roles cannot be equated with a group or individual in all cases for a social setting. In fact, a person may have strictly a single role within one of the three agents defined, but an actor might also be multi-role and even multi-agent in the design control setting. An architect may be readily defined as being a form-giving agent with a private development role, but as a member of a professional organization he can be seen as an enforcing agent with an outside role. If he ran for public office, it is possible for him to be a decision-making agent with a public role. As one can see, the possible combinations are many. The identifications discussed must be seen mainly as ideal types; however, these types do allow one to rationally and conceptually understand the activities that people participate in during the design process.

The matrix of agent and role are not shoe box placements of human actors. Rather, it is a setting where individuals can be seen in life and choose their own activity and place. The description of agent can be viewed more clearly as process, in that form giving, decision making and enforcing are the vibrancy of social action and interaction. Role can be illustrated as being structure. The divisions of private development, public, neighborhood and outside are identified as status

and position. The role-agent relationship is the combination and interrelation of process and structure for a perspective of design control as it relates to the residential environment. The possible combinations of process and structure allow one to understand the identifiable social setting of design control as applied here.

FOOTNOTES

[1]William H. Whyte, Jr., The Last Landscape (Garden City, New York, 1970), pp. 280-281.

[2]Donald H. Webster, Urban Planning and Municipal Policy Making (New York, 1958), p. 472.

[3]Robert Gutman, "The Questions Architects Ask," in People and Buildings, ed. R. Gutman (New York, 1972), p. 358.

[4]Robert Goodman, After the Planners (New York, 1971), pp. 120-121.

[5]Nathaniel A. Owings, The American Aesthetic (New York, 1969), p. 106.

[6]Ibid., p. 107.

[7]Paul Shepard, Man in the Landscape (New York, 1967), p. 235.

[8]Edward J. Kaiser and Shirley F. Weiss, "Public Policy and the Residential Development Process," Journal of the American Institute of Planners, XXXVI (1970), p. 35.

[9]Richard F. Babcock, The Zoning Game (Madison, 1966), pp. 475-476.

[10]Webster, pp. 475-476.

[11]Don Martindale, The Nature and Types of Sociological Theory (Boston, 1969), p. 239.

[12]Kaiser and Weiss, p. 32.

[13]Herbert Gans, The Levittowners (New York, 1967), p. 178.

[14]Ibid., p. 184.

[15]Mel Scott, American City Planning (Berkeley, 1969), p. 644.

[16]Babcock, pp. 43-47.

[17]Gans, pp. 3-20.

[18]Whyte, p. 287.

[19]Webster, pp. 105-106.

[20]T. J. Kent, Jr., The Urban General Plan (San Francisco, 1964), p. 13.

[21]Robert A. Walker, The Planning Function in Government (Chicago, 1950), p. 155.

[22]Delbert Miller, "Democracy and Decision Making in the Community Power Structure," in Power and Democracy in America, ed. W. V. D' Antonio and H. J. Ehrlich (Notre Dame, Indiana, 1961), p. 61.

[23]Webster, pp. 105-106.

[24]Babcock, p. 40.

[25]Webster, p. 433.

[26]Babcock, pp. 3-6.

[27]Seymour I. Toll, Zoned American (New York, 1969), pp. 296-297.

[28]Edward C. Banfield and James Q. Wilson, City Politics (Cambridge, 1963), p. 175.

[29]Alan A. Altshuler, The City Planning Process: A Political Process (Ithaca, New York, 1965), p. 411.

[30]Babcock, p. 141.

[31]Webster, p. 12.

[32]Toll, pp. 229-253.

[33]William H. Whyte, Jr., The Organization Man (New York, 1956), p. 358.

[34]Ibid., pp. 361-365.

[35]Ibid., p. 359.

[36]John Neary, "A Cube House vs. the Squares," Life, LXVII (November 14, 1969), pp. 83-86.

[37]Gordon Fellman, "Neighborhood Protest of an Urban Highway," Journal of the American Institute of Planners, XXXV (1969), p. 121.

[38]Ronald L. Nuttall, Ervin K. Schench and Chad Gordon, "On the Structure of Influence," in Community Structure and Decision Making, ed. Terry N. Clark (San Francisco, 1968), p. 361.

[39]Kaiser and Weiss, p. 31.

[40]A. Allen Schmid, "Suburban Land Appreciation and Public Policy," Journal of the American Institute of Planners, XXXVI (1970), p. 41.

[41]Nuttall, Schench and Gordon, p. 364.

[42]Robert Goldman, Suburbia: Civic Denial (New York, 1970), p. 53.

[43]Webster, p. 293.

[44]Babcock, p. 63.

[45]Gans, p. 178.

[46]Whyte, p. 359.

[47]Ibid., p. 361.

[48]Charles E. Little and John G. Mitchell, Space for Survival (New York, 1971).

[49]Webster, pp. 294-295.

CHAPTER V

PHYSICAL DETERMINISM AND ITS IMPLICATIONS

Perspective

The previous chapters were an attempt by this researcher to account for: (1) definition of structure and process within the neighborhood; (2) an individual's personal holistic conceptualization with his gestalt neighborism; (3) identification of social organization in residential life; (4) the uses of personal space and architectural territory; and (5) design control of neighborhood space within and outside of the living area. Many topics have been discussed which are obviously beyond the dissertation topic of street forms. As discussed in Chapter II the researcher emphasized the attempt for a holistic understanding of process, structure and space within the single family home residential environment. The study of street forms must be placed in perspective with other influential spatial determinants so as to properly focus attention to the effect of street forms on the individual.

It would be simple to narrowly discuss street configurations singularly, but the subject would be isolated from other localized socio-spatial realities. The overtone of this dissertation is physical determinism as related to daily social life. Such an issue cannot be treated casually, especially if the thoughts of this document are ever utilized in the manipulation of residential space. The researcher has

shown how street forms might affect behavior, but in perspective these configurations are one of many influences which may direct social behavior. Not all social interaction is oriented to the street block level nor is social organization. The person is not totally dependent on the street for territorial direction, for he has personal spaces which operate apart from territorial areas. Since there is more than one architectural territory in the neighborhood, one could hardly believe that one territorial level wholly influences the individual to the exclusion of the other spatial types. Design control by organizations and influences outside of the neighborhood setting also make an effect on space. The street forms would have never occurred without the ideals of men or the social structure to implement such spatial arrangements.

The relationship between social organization and architectural territories is so intertwined that it is difficult to separate the joint effects. Various social groups instilled with values shape the space; and then the cultural space shapes one's understanding of his social situation. If social scientists are willing to accept the notion that social organization includes some social determinism which directs the individual, they must also concede that spatial arrangement includes physical determinism which also directs the individual. A whole reality includes both the social and physical realms of existence.

One's gestalt neighborism encompasses the physical reality as well as the social. Part of the formation of a personal reality is the recognition that one has limitations with his social and physical self in relation to his spatial environment. A child is not able to high jump seven feet because of the inability of his body to perform such a task, but the social actors may play a role in attempting to prevent him in

accomplishing such a feat. The child has been exposed to determinism at two different levels of reality, physical and social. While a person gains knowledge of such realities, some physical barriers will be overcome while some social limitations will not and vice versa. The individual gains the ability to direct much of his personal socio-spatial life but not all of it.

The entire discipline of sociology has emphasized social control through the study of social organization and this has not been done without justification. As man increases his understanding of technology, he is more able to manipulate his spatial environment. "Man over nature" is not a loose comment, for the formation of society and culture includes the task of conquering certain physical limitations. The invention of the airplane has created new social conditions which are beyond the realities of previous civilizations. While man may be able to manipulate social space to affect his environment, he cannot socially control all aspects of space. So when one speaks of determinism in suburbia, he cannot speak of total physical or social control. The social scientist must focus on various degrees of control of the physical and social conditions.

As American society advances in technology, physical determinism may play a lesser role. However, the separate single family home in suburbia has reached somewhat a final level of physical manipulation. Variations may occur in the future to greater or less density of development or new communication devices, but the traditional subdivision has been subjected to almost any possible combination of street arrangements. Any significant differences in manipulating the space of single family homes in new design approaches with street forms will be very

few in the future. Suggestions and examples of clustering homes have occurred, but in them the individual, spatially separate identity of the home has been greatly lost.[1] If the present form of residential development goes out of existence in favor of cluster forms due to economics and the saving of land, this researcher acknowledges that the main scientific thrust of this study may become a cultural relic. The reality of American preference and the technology of the building industry will largely prevent such a situation for many years to come. The relevancy of this study in relation to physical determinism is predicated on this condition within this society.

Trends

Within the sociological profession, changed attitudes toward physical determinism have occurred beginning with the late nineteen-forties to the present day opinions. Early research studies emphasized the affect of spatial arrangements on social behavior.[2] In the mid-nineteen-fifties Whyte developed his very candid participant observations of suburban space in Park Forest, Illinois.[3] Soon afterwards Jane Jacobs espoused her beliefs of physical determinism through streets and sidewalks in her book, The Death and Life of Great American Cities.[4] In 1963 Peter Willmott developed significant research which related to street forms in English group housing.[5]

The overtone of these studies gave an indication that physical determinism is an important factor in housing, but an undercurrent developed through the works of Herbert Gans, sociologist and city planner. In 1962 he made an outright attack on physical determinism in a review of Jacobs' aforementioned book.[6] In his participation observation

research of Levittown, New Jersey, he questioned the role of designers and builders as agents of change.[7] In relation to determinism and site planning, Gutman wrote a landmark article in this area which de-emphasized physical manipulation affecting social behavior.[8] More recently in his book, Man and His Urban Environment, Michelson has taken a similar position to Gutman.[9] Gans, Gutman and Michelson do not state that physical determinism is not an influence, but their comments convey the thought that this variable has been overrated. The noted studies here are not all that have been done in physical determinism, but these examples largely represent the most important works from the viewpoint of this researcher.

Roles of the Designer and Social Scientist

If physical determinism is conceded as affecting the social condition whether it be great or small, should designers be directed to creating particular environments? In his belief that physical environments affect behavior, Whyte notes the problem of such manipulation of space:

> The comparison of physical layout and neighborliness will show that it is possible deliberately to plan a layout which will produce a close-knit social group, but it also will show that there is much more of a price to be paid for this kind of neighborliness than is generally imagined.[10]

While the designer may question what directions he should take, he is forced to make a decision about choosing a physical arrangement to satisfy the architectural problem. Although the designer may be accused of being inconsiderate of the future social situation, he must be credited with the attempt to do the best he can with the knowledge at hand.

Perin notes that the designer will want to create an environment where interaction and social organization might flourish, but he may not be able to find fresh concepts and data concerning the subject.[11] The social scientist who blames the designer's work accomplishes little if he offers no alternatives to improve physical design.

The social scientist cannot abandon the victim of his criticism if positive results are to occur. While one may complain of the designer's manipulations, he will be forced to create with or without the help of the social scientist. A workable relationship between these two professionals should exist if a better relation of man and space are to occur. Such a contact is not improbable and informal delegation of responsibilities is possible. Michelson has specifically addressed the positive, possible, ongoing relationship between the social scientist and the designer as he states:

> Note that the social scientists are not determining the design or construction of homes, neighborhoods, or cities from their research. They are, rather, offering suggestions for optimal spatial arrangement with consideration for stated criteria of mental health, family and community organization, and the like. The physical designer, on his part, must now come forward with the most efficient physical means to produce the requisite spatial units. He is no longer required to play amateur sociologist, psychologist, or the like, but he is taxed with the challenge of creating a given spatial structure by means that he or his city can afford and which are politically acceptable. In making his role explicit, the division of labor I suggest puts a greater--not a lesser--burden of innovation on the designer than he has now.[12]

Micehlson's insight here is extremely profound, and the building art will be greatly improved if his suggestions are heeded. It must be noted that while the burden of the designer will increase for responsible works in physical determinism, the load will also be heavier for the social scientist. When his research is put to constant test through

building construction, he must refine his suggestions, notice oversights in his works and correct faulty conclusions. The designer should be willing to follow the advice of his fellow professional, and if research lags or proves to be incorrect, the designer will develop a harsh, justified criticism toward the social scientist. The works here are an attempt to carry the dual role which Michelson suggests. It is for this reason that the topic of street forms in relation to neighboring was chosen. As a social scientist one can seek understanding, but to also put such knowledge into practice will allow this researcher to be responsibly reflective.

Hypotheses

The holistic viewpoint has been made along with the study of the various aspects of the socio-spatial setting of the neighborhood and the accounting of street forms in relation to other forms. The researcher will now focus on the particular hypotheses that seem to be relevant in regard to street forms as related to neighboring. These null hypotheses are as follows:

H_1 : There is no significant difference in neighbor familiarity by:

- H_{1A} : street form types.
- H_{1B} : number of children living at home.
- H_{1C} : interaction between street form types and number of children living at home.

H_2 : There is no significant difference in neighborhood participation by:

- H_{2A} : street form types.
- H_{2B} : number of children living at home.
- H_{2C} : interaction between street form types and number of children living at home.

H_3 : There is no significant difference in neighbor familiarity by:

H_{3A} : street form types.
H_{3B} : length of residence.
H_{3C} : interaction between street form types and length of residence.

H_4 : There is no significant difference in neighborhood participation by:

H_{4A} : street form types.
H_{4B} : length of residence.
H_{4C} : interaction between street form types and length of residence.

H_5 : There is no significant difference in neighbor familiarity by:

H_{5A} : street form types.
H_{5B} : neighborhoods.
H_{5C} : interaction between street form types and neighborhoods.

H_6 : There is no significant difference in neighborhood participation by:

H_{6A} : street form types.
H_{6B} : neighborhoods.
H_{6C} : interaction between street form types and neighborhoods.

H_7 : There is no significant difference in neighbor familiarity by:

H_{7A} : street form types.
H_{7B} : marital status.
H_{7C} : interaction between street form types and marital status.

H_8 : There is no significant difference in neighborhood participation by:

H_{8A} : street form types.
H_{8B} : marital status.
H_{8C} : interaction between street form types and marital status.

H_9 : There is no significant difference in neighbor familiarity by:

H_{9A} : street form types.
H_{9B} : job status of the woman of the household.
H_{9C} : interaction between street form types and job status of the woman of the household.

H_{10}: There is no significant difference in neighborhood participation by:

- H_{10A}: street form types.
- H_{10B}: job status of the woman of the household.
- H_{10C}: interaction between street form types and job status of the woman of the household.

H_{11}: There is no significant difference in neighbor familiarity by:

- H_{11A}: street form types.
- H_{11B}: age of the head of the household.
- H_{11C}: interaction between street form types and age of the head of the household.

H_{12}: There is no significant difference in neighborhood participation by:

- H_{12A}: street form types.
- H_{12B}: age of the head of the household.
- H_{12C}: interaction between street form types and age of the head of the household.

H_{13}: There is no significant difference in neighbor familiarity by:

- H_{13A}: street form types.
- H_{13B}: occupational status of the head of the household.
- H_{13C}: interaction between street form types and occupational status of the head of household.

H_{14}: There is no significant difference in neighborhood participation by:

- H_{14A}: street form types.
- H_{14B}: occupational status of the head of the household.
- H_{14C}: interaction between street form types and occupational status of the head of the household.

H_{15}: There is no significant correlation between the percentage of households known on the street block and the total number of households existing on the street block.

H_{16}: There is no significant correlation between the neighborhood participation of each household on the street block and the total number of households existing on the street block.

FOOTNOTES

[1]William H. Whyte, Jr., "Cluster Development," in The Last Landscape (Garden City, New York, 1970), pp. 225-252.

[2]Theodore Caplow and Robert Forman, "Neighborhood Interaction in a Homogeneous Community," American Sociological Review, XV (1950), pp. 357-366; Morton Deutsch and Mary Collins, Inter-racial Housing: A Psychological Evaluation of a Social Experiment (Minneapolis, 1951); Leon Festinger, Stanley Schacter and Kurt Back, Social Pressures in Informal Groups (New York, 1950); Leo Kuper, et al., Living in Towns (London, 1951); Robert K. Merton, "The Social Psychology of Housing," in Current Trends in Social Psychology, ed. Wayne Dennis (Pittsburgh, 1948), pp. 163-217.

[3]William H. Whyte, Jr., "The Web of Friendship," The Organization Man (New York, 1956), pp. 330-349.

[4]Jane Jacobs, "The Uses of City Neighborhoods," The Death and Life of Great American Cities (New York, 1961), pp. 112-140.

[5]Peter Willmott, The Evolution of a Community (London, 1963).

[6]Herbert Gans, "City Planning and Urban Realities," Commentary, XXXIII (1962), pp. 170-175.

[7]Herbert Gans, The Levittowners (New York, 1967), p. 289.

[8]Robert Gutman, "Site Planning and Social Behavior," Journal of Social Issues, XXII (1966), pp. 103-115.

[9]William Michelson, "Determinism by the Urban Environment," Man and His Urban Environment (Reading, Massachusetts, 1970), pp. 168-190.

[10]Whyte, p. 335.

[11]Constance Perin, With Man in Mind: An Interdisciplinary Prospectus for Environmental Design (Cambridge, 1970), p. 23.

[12]Michelson, p. 203.

CHAPTER VI

RESEARCH METHODS AND FINDINGS

Relationship of Methodology to Theory

The theoretical essay has concentrated on the development of a holistic understanding of the socio-spatial schema of the suburban environment. The gestalt neighborism concept is the integration of neighborhood, neighboring and neighbor into a whole. This gestalt may be developed through an individual's experience with social organization, personal space, architectural territory and means for design control. Among these various sources for a gestalt, street form types are identified with the block level of architectural territory. The block level of space can be only one of many sources to form a holistic conception of reality. The methodology is only directed to the testing of one spatial scale, street forms at the block level. Other socio-spatial sources which influence a personal gestalt neighborism are not tested. However, the theoretical essay provides the conceptual framework for further organized study by this researcher.

Population and Survey

The population and survey were limited to single family residential areas in the southeastern portion of Tulsa, Oklahoma. Eight neighborhoods were selected that contained the three specified street form

types. These are: (1) linear; (2) curvilinear; and (3) cul-de-sac. The neighborhoods were defined by land sections which are bordered by major arterial streets. Street blocks were chosen which had been fully physically developed. All streets are classified as neighborhood streets. No collector or arterial streets were selected. All selected streets had an average housing unit cost from $15,000 to $40,000 as determined by U. S. Census block statistics.[1] This control was done to prevent very low or high income groups from being considered. From the number of qualifying street blocks selected in each neighborhood, one linear and curvilinear street type was separately and randomly selected when possible. Three qualifying cul-de-sac streets were randomly selected when possible. Since the average cul-de-sac street is shorter than the other two types, more streets were selected to balance the sample by street form types. After the street selection, all residents living on the block were included in the sample. A block is defined as including only those houses which face the street terminated by a dead-end or other streets.

Pretest and Structure of Questionnaire

A presample of the questionnaire was done to verify the research instrument. Questionnaires were personally distributed to selected female respondents. After the persons had individually completed the questionnaire, each was interviewed to identify poorly designed questions. The researcher reviewed the comments and questionnaires and made needed changes.

In order to gain some consistency in response, the woman of the household was requested to complete the questionnaire. This control was

made on the researcher's assumption that the woman would usually be the most informed on household activities. To acquire information on basic family characteristics, questions were asked that pertained to six control variables. These variables are: (1) marital status; (2) number of children of school age or younger living at home; (3) length of residence; (4) work status of the woman of the household; (5) age of the head of the household; (6) primary occupation of the head of the household. The scale for occupational status was taken from the scale established by Coleman and Neugarten.[2]

Neighbor familiarity was considered as a pertinent dependent variable. Each questionnaire contained a map of the particular block that the respondent resides on. A five level Likert scale was utilized to measure various intensities of familiarity. These levels were identified as: (1) do not know the household or nobody lives there; (2) know the household by name only; (3) know the household casually; (4) know the household well; (5) know the household very well. The respondent was requested to place an appropriate score in the particular house lot that identified her neighbor on the provided street block map. Another important dependent variable was identified as neighborhood participation. Nine questions were designed to identify this variable. A five level Likert scale was used to identify the degrees of participation. These levels were: (1) never; (2) rarely; (3) sometimes; (4) often; and (5) very often.

Collection Procedure for Questionnaires

This questionnaire was mailed with a prepaid return envelope to encourage the return of the data. A letter of explanation was included to

explain the nature of the research (see Appendix A). This letter was specifically directed to the woman of the household. If no woman resided at the household, the man of the household was requested to complete the forms. From two to three weeks after the initial mailing, a second questionnaire was sent. A different written reply was included to further encourage the completion and return of the questionnaire (see Appendix B). After this point, no further action was taken. From the mailouts, 301 acceptable questionnaires of a possible 519 respondents were received. This return accounted for 57.99% of the possible sample.

Statistical Methods

Analysis of variance with the utilization of an unbalanced cell size computer program was used. This method tests the significance of independent variables with the dependent variables, neighbor, familiarity and neighborhood participation. F tests were done to test main affect and interactions for significant differences. All levels of significance are set at $P = .05$. When a significant relationship occurred, within group means were ranked to check subjectively for substantial differences between means.

Analysis of variance was used as a testing method, because the researcher desired to test the street form types variable with other independent variables in the separate and joint effects on a dependent variable. This statistical approach is an efficient way to consistently use one independent variable with others to test with a dependent variable. Since a substantial number of independent variables were selected for testing, a two-way analysis of variance was used for consistent

treatment and efficiency.

The unbalanced cell size program of analysis of variance has some limitations which control the interpretation of test results. In order to balance the cell size of each cell formed by the internal limits of each independent variable, a harmonic mean was calculated to balance the effects of unequal cell size. This mean is calculated by dividing the total of number of cells by the reciprocal sum of cases in each cell. The harmonic mean is dependent on the construction of cells determined by two or more independent variables. The mean square of each independent variable is partially determined by the harmonic mean. The problem with the harmonic mean is that it is constructed by the divisions of more than one independent variable. Therefore, no independent variable is completely independent from another independent variable.

Pearson and Spearman correlations were used to test certain variables for significance for the whole sample with specific regard to street form types. Such testing was done for those variables which were susceptible to a correlation treatment. Pearson and Spearman correlation procedures were used to find the direction and strength of paired independent variables for a dependent variable. The Lorenz curve was used to illustrate the distribution of qualitative scores on neighbor familiarity and neighborhood participation for each street form type.

To determine a score for neighbor familiarity, a specific format was utilized. Not all scores designated by the respondents were used to determine a summarized score. Only those neighbors who live directly by the respondent were used. This method normally included neighbors on either side of the respondent's home on her side of the street. Also, the neighbor directly across the street with the two homes on either

side of this residence were included. Variations did occur such as a respondent living on the corner. All of the qualifiable scores were added together and then divided by the number of residences the result being identified as the neighbor familiarity score for the respondent. An individual could have a score in the range from zero to four.

In the questionnaire nine questions were designed in which the values for each question were to be added together. The sum total was then defined as the score for neighborhood participation. Before making a summary, an item analysis had to be executed to see if all questions were highly related. This test was done by correlating each question with every other question. The nine considered questions are listed in the questionnaire in Appendix C. The Pearson correlations of the questions were given in Table I.

With a sample size of 301 cases and a level of significance of .05, all correlations are significant. However, Question 16 has consistently lower correlations in relation to the other questions. In order to have a stronger definition of the variable, Question 16 was deleted. The respondent's scores for the eight remaining questions were totaled to provide an individual testing score for neighborhood participation. An individual could have a score within the range from eight to forty.

Analysis of the Data

The analysis of variance test is a two-way analysis. Two independent variables are tested with one dependent variable. In every A.O.V. test the independent variable, street form types, was used. Seven control variables were individually paired with street form types to generate A.O.V. tests with each dependent variable. Two dependent variables,

TABLE I

MATRIX OF PEARSON CORRELATIONS USED TO DEFINE NEIGHBORHOOD PARTICIPATION

Question	8	9	10	11	12	13	14	15	16
Question 8: Attend indoor informal gatherings	1.00	.60	.51	.53	.49	.54	.45	.59	.38
Question 9: Attend formal gatherings		1.00	.44	.49	.47	.49	.43	.49	.38
Question 10: Share mass media items			1.00	.50	.43	.51	.47	.52	.29
Question 11: Lend or borrow items				1.00	.60	.57	.54	.50	.33
Question 12: Give or receive items					1.00	.63	.55	.49	.33
Question 13: Talk on the telephone						1.00	.60	.57	.35
Question 14: Chat in the front or back yard							1.00	.49	.29
Question 15: Participate in joint outdoor activities								1.00	.45
Question 16: Participate in formal organizations									1.00

neighbor familiarity and neighborhood participation were analyzed separately. This procedure generated fourteen A.O.V. tests for street form types. All A.O.V. tables identify the mean squares (MS), degrees of freedom (d.f.), F-ratio (F) and the probability of falsely accepting the null hypothesis (p). In the A.O.V. tables an "asterisk" (*) indicates a significant or substantial relationship.

When a variable is referred to as being independent, the term, "independent," must be qualified. Independent variables are independent except for the dependent effect of the harmonic mean in the A.O.V. test. When an independent variable is found significant, the variable is only significant to the extent it is paired with the other independent variable in the test.

Some testing was done by Spearman correlations (Rs) to trace potential influence on the dependent variables. The final two hypotheses are tested by the use of Pearson correlations (Rp).

Street Form Types and Number of Children Living at Home

The hypotheses analyzing street form types and the number of children living at home for neighbor familiarity are as follows:

H_1 : There is no significant difference in neighbor familiarity by:

H_{1A}: street form types.
H_{1B}: number of children living at home.
H_{1C}: interaction between street form types and number of children living at home.

TABLE II

ANALYSIS OF VARIANCE FOR STREET FORM TYPES AND NUMBER OF CHILDREN LIVING AT HOME AFFECTING NEIGHBOR FAMILIARITY

Source	M.S.	d.f.	F	P
A. Street Forms	0.634	2	0.9427	0.6071
B. Number of Children	1.291	1	1.9193	0.1633
C. Interaction	0.321	2	0.4765	0.6274
Error	0.673	295		

The test results indicate that no significant differences were found for street form types, number of children or interaction. These paired variables independently and jointly do not seem to influence neighbor familiarity.

The hypotheses analyzing street form types and the number of children living at home for neighborhood participation are as follows:

H_2 : There is no significant difference in neighborhood participation by:

H_{2A}: street form types.
H_{2B}: number of children living at home.
H_{2C}: interaction between street form types and number of children living at home.

Street form types (paired with number of children living at home) and interaction between street form types and the number of children living at home were not found to be significant. The number of children living at home (paired with street form types) was found to be highly significant with P = 0.000. A comparison of means for children

indicates that those households with children ($\bar{X}$ = 20.7133) have greater neighborhood participation than those households with no children ($\bar{X}$ = 16.6837). It is important to note that while the variable of number of children living at home influences neighborhood participation, in the A.O.V. test the variable was not found to be significant for neighbor familiarity.

TABLE III

ANALYSIS OF VARIANCE FOR STREET FORM TYPES AND NUMBER OF CHILDREN LIVING AT HOME AFFECTING NEIGHBORHOOD PARTICIPATION

	Source	M.S.	d.f.	F	P
A.	Street Forms	38.043	2	1.0519	0.3515
B.	Number of Children	1107.441	1	30.6216	0.0000*
C.	Interaction	51.181	2	1.4152	0.2431
	Error	36.163	215		

*Significant

Street Form Types and Length of Residence

The hypotheses analyzing street form types and the length of residence for neighbor familiarity are as follows:

H_3 : There is no significant difference in neighbor familiarity by:

H_{3A}: street form types.
H_{3B}: length of residence.
H_{3C}: interaction between street form types and length of residence.

TABLE IV

ANALYSIS OF VARIANCE FOR STREET FORM TYPES AND LENGTH OF RESIDENCE AFFECTING NEIGHBOR FAMILIARITY

	Source	M.S.	d.f.	F	P
A.	Street Forms	1.185	2	2.1043	0.1216
B.	Length of Residence	21.516	2	38.1949	0.0000*
C.	Interaction	0.484	4	0.8596	0.5094
	Error	0.563	292		

*Significant

Street form types (paired with length of residence) and interaction between street form types and length of residence were found to be non-significant. Length of residence (paired with street form types) was found to be significant (P = 0.0000). A comparison of within group means shows that persons living at their residence two years of residence or less ($\bar{X}$ = 1.3387) have less familiarity than those persons having a length of residence of two to four years ($\bar{X}$ = 2.4195).

H_4 : There is no significant difference in neighborhood participation by:

H_{4A}: street form types.
H_{4B}: length of residence.
H_{4C}: interaction between street form types and length of residence.

TABLE V

ANALYSIS OF VARIANCE FOR STREET FORM TYPES AND LENGTH OF RESIDENCE AFFECTING NEIGHBORHOOD PARTICIPATION

	Source	M.S.	d.f.	F	P
A.	Street Forms	32.007	2	0.8192	0.5546
B.	Length of Residence	271.689	2	6.9539	0.0015*
AB.	Interaction	43.872	4	1.1229	0.3457
	Error	39.070	292		

*Significant

Street form types (paired with length of residence) and interaction between street form types and length of residence were found to be non-significant. Length of residence (paired with street form types) was found to be significant (P = 0.0015). A comparison of within group means indicates that persons living at their residence two years or less participate less in their neighborhood ($\bar{X}$ = 16.0792) than those persons having lived in their residence four years or more were found to have a slightly less level of neighborhood participation ($\bar{X}$ = 19.5335) than the two to four years in residence group. However, the difference between these means are nonsignificant.

Street Form Types and Neighborhoods

The hypotheses analyzing street form types and neighborhoods for neighbor familiarity are as follows:

H_5 : There is no significant difference in neighbor familiarity by:

H_{5A}: street form types.
H_{5B}: neighborhoods
H_{5C}: interaction between street form types and neighborhoods.

TABLE VI

ANALYSIS OF VARIANCE FOR STREET FORM TYPES AND NEIGHBORHOODS AFFECTING NEIGHBOR FAMILIARITY

	Source	M.S.	d.f.	F	P
A.	Street Forms	1.301	2	2.0167	0.1328
B.	Neighborhoods	1.648	7	2.5543	0.0145*
AB.	Interaction	0.640	14	0.9918	0.5378
	Error	0.645	277		

*Significant

Street form types (paired with neighborhoods) and interaction were found to be nonsignificant. Neighborhoods (paired with street form types) were found to be significant (P = 0.0145). The researcher attempted to trace the significance of neighborhoods with other control variables by using the Spearman correlation procedure. The means for

neighbor familiarity of each neighborhood were put in rank order. Neighborhood average for number of children living at home, length of residence, age of the head of the household and occupational status of the head of the household were ranked. Each of these variables were correlated with neighbor familiarity rank scores for neighborhoods. None of the correlations were found to be significant (see Appendix D).

The hypotheses analyzing street form types and neighborhoods for neighborhood participation are as follows:

H_6 : There is no significant difference in neighborhood participation by:

H_{6A}: street form types.
H_{6B}: neighborhoods.
H_{6C}: interaction between street form types and neighborhoods.

TABLE VII

ANALYSIS OF VARIANCE FOR STREET FORM TYPES AND NEIGHBORHOODS AFFECTING NEIGHBORHOOD PARTICIPATION

	Source	M.S.	d.f.	F	P
A.	Street Forms	53.280	2	1.4043	0.2459
B.	Neighborhoods	77.489	7	2.0423	0.0495*
AB.	Interaction	62.176	14	1.6387	0.0684
	Error	37.491	277		

*Significant

Street form types (paired with neighborhoods) and interaction between street form types and neighborhoods (paired with street form types) were not found to be significant for neighborhood participation. However, the interaction was very close to the .05 level with a probability of 0.0684. If the interaction was considered significant, the interpretation would be that street form types and neighborhoods do not vary together in affecting neighborhood participation. The variable of neighborhoods was found to be significant (P = 0.0595). Spearman correlations of ranked mean scores for neighborhoods were done with the same four control variables as identified for neighbor familiarity. None of the correlations were found to be significant (see Appendix D).

Street Form Types and Marital Status

The hypotheses analyzing street form types and marital status for neighbor familiarity are as follows:

H_7 : There is no significant difference in neighbor familiarity by:

H_{7A}: street form types.
H_{7B}: marital status.
H_{7C}: interaction between street form types and marital status.

Marital status (paired with street form types) was found to be non-significant for neighbor familiarity. Street form types (paired with marital status) was a significant variable. The significance of street form types is contradictory to previous A.O.V. tests. This result is due to the variation of the mean square caused by the calculation of the harmonic mean. Street form types is only significant for neighbor familiarity when paired with the independent variable, marital status. Curvilinear streets ($\bar{X}$ = 2.4386) were found to have greater familiarity

than cul-de-sac streets ($\bar{X}$ = 2.0976) and linear streets ($\bar{X}$ = 1.8453). The ranking of means for number of children living at home by street form types falls into the same order as the separate ranking of street types for neighbor familiarity. However, this comparison is not legitimate since the number of children affecting neighbor familiarity was found nonsignificant in an earlier test.

TABLE VIII

ANALYSIS OF VARIANCE FOR STREET FORM TYPES AND MARITAL STATUS AFFECTING NEIGHBOR FAMILIARITY

	Source	M.S.	d.f.	F	P
A.	Street Forms	2.504	2	3.8844	0.0211*
B.	Marital Status	1.435	1	2.2259	0.1328
AB.	Interaction	2.357	2	3.6561	0.0262*
	Error	0.645	289		

*Significant

Length of residence is comparative to the ranking of street form types for marital status. Curvilinear streets were found to have the greatest length of residence ($\bar{X}$ = 3.242) with cul-de-sac streets ($\bar{X}$ = 3.211) and linear streets ($\bar{X}$ = 3.089) following in consecutive order.

TABLE IX

RANKING OF INTERACTION MEANS BY STREET FORM TYPES AND MARITAL STATUS FOR NEIGHBOR FAMILIARITY

Street Form Type	Married	Nonmarried
Curvilinear	2.2591	2.6182*
Cul-de-sac	2.2752	1.9200
Linear	2.2377	1.4530

*Substantial

Interaction between street form types and marital status was found to be significant. This is interpreted that street form types and marital status were not found to vary together for neighbor familiarity. To locate the difference by interaction, street form types and marital status within group means were ranked for each variable. A significant mean is located by being substantially out of order with the other means of the two variables. The mean for nonmarried persons on curvilinear streets is out of order and substantially higher for neighbor familiarity.

The hypotheses analyzing street form types and marital status for neighborhood participation are as follows:

H_8 : There is no significant difference in neighborhood participation by:

H_{8A}: street form types.
H_{8B}: marital status.
H_{8C}: interaction between street form types and marital status.

TABLE X

ANALYSIS OF VARIANCE FOR STREET FORM TYPES AND MARITAL STATUS AFFECTING NEIGHBORHOOD PARTICIPATION

	Source	M.S.	d.f.	F	P
A.	Street Forms	129.674	2	3.2414	0.0393*
B.	Marital Status	124.250	1	3.1059	0.0753
AB.	Interaction	88.773	2	2.2190	0.1084
	Error	40.005			

*Significant

Marital status (paired with street form types) and interaction between marital status and street form types were found to be nonsignificant at the .05 level. However, marital status was close to a significance with P = 0.0733. If the variable was significant, a comparison of neighbor familiarity means show that married persons ($\bar{X}$ = 19.3550) have greater neighborhood participation than nonmarried persons ($\bar{X}$ = 16.9333).

Street form types (paired with marital status) was found to have a significant difference for F. Street form types are only considered significant for neighborhood participation when the variable is paired with marital status. Curvilinear streets have the greatest participation ($\bar{X}$ = 20.4177) with linear streets ($\bar{X}$ = 17.8523) and cul-de-sac streets ($\bar{X}$ = 16.1625) following consecutively. These mean scores are somewhat comparative to means for length of residence in each street

form type. Curvilinear streets were found to have the highest mean ($\bar{X}$ = 3.242) for length of residence followed by cul-de-sac streets ($\bar{X}$ = 3.211) and linear streets ($\bar{X}$ = 3.089). The cul-de-sac and linear street means are reversed in rank between neighborhood participation and neighbor familiarity.

For number of children living at home, curvilinear streets were found to have a substantially higher mean ($\bar{X}$ = 1.455) than cul-de-sac streets ($\bar{X}$ = 1.256) and linear streets ($\bar{X}$ = 1.250). For neighborhood participation, curvilinear streets also show an equally substantial mean ($\bar{X}$ = 20.4177), higher than linear streets ($\bar{X}$ = 17.8523) and cul-de-sac streets ($\bar{X}$ = 16.1625). The linear and cul-de-sac streets were found to have a reverse relationship for neighborhood participation and number of children. This test condition is especially true for the consistent high ranking of curvilinear streets. The reverse relationship for cul-de-sac and linear streets for the two control variables and neighborhood participation could be due to random error, because the mean scores in each comparison were very close in value.

Street Form Types and Job Status of the Woman of the Household

The hypotheses analyzing street form types and job status of the woman of the household for neighbor familiarity are as follows:

H_9 : There is no significant difference in neighbor familiarity by:

- H_{9A}: street form types.
- H_{9B}: job status of the woman of the household.
- H_{9C}: interaction between street form types and job status of the woman of the household.

TABLE XI

ANALYSIS OF VARIANCE FOR STREET FORM TYPES AND JOB STATUS OF THE WOMAN OF THE HOUSEHOLD AFFECTING NEIGHBOR FAMILIARITY

Source	M.S.	d.f.	F	P
A. Street Forms	0.744	2	1.1250	0.3263
B. Woman Job Status	0.887	2	1.3404	0.2623
AB. Interaction	0.350	4	0.5284	0.7182
Error	0.661	290		

Job status of woman of the household was defined as: (1) no paying job; (2) part-time paying job; and (3) full-time paying job. The test results show that there were no significant differences for street form types, woman job status or interaction. These paired variables independently or jointly were not found to influence neighbor familiarity.

The hypotheses analyzing street form types and job status of the woman of the household for neighborhood participation are as follows:

H_{10}: There is no significant difference in neighbor participation by:

H_{10A}: street form types.
H_{10B}: job status of the woman of the household.
H_{10C}: interaction between street form types and job status of the woman of the household.

The test results indicate that there were no significant differences by street form types, woman job status independently or by interaction. However, street form types (P = 0.0833) and job status of

TABLE XII

ANALYSIS OF VARIANCE FOR STREET FORM TYPES AND JOB STATUS OF THE WOMAN OF THE HOUSEHOLD AFFECTING NEIGHBORHOOD PARTICIPATION

Source	M.S.	d.f.	F	P
A. Street Forms	95.951	2	2.4823	0.0833
B. Woman Job Status	96.185	2	2.4883	0.0828
AB. Interaction	74.200	4	1.9195	0.1061
Error	38.655	290		

woman of the household (P = 0.0828) paired with each other are close to the accepted probability level (P = 0.0500). A comparison of within group means for street form type show that curvilinear streets ($\bar{X}$ = 20.0912) were found to have greater neighborhood participation than cul-de-sac streets ($\bar{X}$ = 18.7533) and linear streets ($\bar{X}$ = 17.6563). This rank order is congruent with the number of children living at home per household. Curvilinear streets ($\bar{X}$ = 1.455) were found to have the most children, with cul-de-sac streets ($\bar{X}$ = 1.256) and linear streets ($\bar{X}$ = 1.250) following in consecutive order. Length of residence is also similar in tested rank order. Curvilinear streets ($\bar{X}$ = 3.242) were found to have the greatest length of residence with cul-de-sac streets ($\bar{X}$ = 3.211) and linear streets ($\bar{X}$ = 3.089) consecutively having less time in residence. If street form types were to be considered significant in this test, the number of children living at home and length of residence would be considered the traced influence which made street form types significant. Of job status of the woman of the household (paired with street form types) a definite pattern appears to occur. Those women with no jobs ($\bar{X}$ = 20.0990) were found to have more neighborhood participation than those women with part-time jobs ($\bar{X}$ = 18.7394) or full-time jobs ($\bar{X}$ = 17.6625).

Street Form Types and Age of the Head of Household

The hypotheses analyzing street form types and age of the head of household for neighbor familiarity are as follows:

H_{11}: There is no significant difference in neighbor familiarity by:

H_{11A}: street form types.
H_{11B}: age of the head of the household.
H_{11C}: interaction between street form types and age of the head of the household.

TABLE XIII

ANALYSIS OF VARIANCE FOR STREET FORM TYPES AND AGE OF THE HEAD OF THE HOUSEHOLD FOR NEIGHBOR FAMILIARITY

	Source	M.S.	d.f.	F	P
A.	Street Forms	0.661	2	1.0014	0.3701
B.	Age of the Head of Household	2.998	3	4.5450	0.0043*
AB.	Interaction	0.592	6	0.8982	0.5023
	Error	0.660	288		

*Significant

Street form types (paired with age of the head of household) and interaction between street form types and age of the head of household were found to be nonsignificant. Age of the head of household (paired with street form types) was found to be significant with P = 0.0043. Age groupings were divided into the following categories: (1) twenty to twenty-nine years old; (2) thirty to thirty-nine years old; (3) forty to forty-nine years old; and (4) fifty years and older. A comparison of within group means indicates that the fifty and older age group ($\bar{X}$ = 2.3309) have greater neighbor familiarity than the forty year age group

($\bar{X}$ = 2.3178), thirty year age group ($\bar{X}$ = 2.1797) and the twenty year age group ($\bar{X}$ = 1.8608).

The forty year age group ($\bar{X}$ = 3.692) was found to have a greater length of residence than the fifty year and over age group ($\bar{X}$ = 3.594), the thirty year age group ($\bar{X}$ = 2.700), and the twenty year age group ($\bar{X}$ = 1.861). There was found a reverse ranking relationship between the fifty and over and forty year age groups for neighbor familiarity and length of residence. However, the difference between these means for each of the variables is very small.

The hypotheses analyzing street form types and age of the head of household for neighborhood participation are as follows:

H_{12}: There is no significant difference in neighborhood participation by:

H_{12A}: street form types.
H_{12B}: age of the head of household.
H_{12C}: interaction between street form types and age of the head of household.

Street form types (paired with age of the head of the household) and interaction between street form types and age of the head of household were not found to be significant. Age of the head of household (paired with street form types) was found to be significant for neighborhood participation with P = 0.0330. A comparison of means shows that the thirty year age group ($\bar{X}$ = 20.8616) has greater participation than the forty year age group ($\bar{X}$ = 19.7861), the twenty year age group ($\bar{X}$ = 18.6487), and the fifty and over age group ($\bar{X}$ = 17.7370) in consecutive order.

A comparison of between means for age group neighborhood participation and for number of children living at home by age groups indicates a substantial relationship. The thirty year age group ($\bar{X}$ = 2.063) was

found to have more children living at home than the forty year age group ($\bar{X}$ = 1.859), the twenty year age group ($\bar{X}$ = 1.306) and the fifty year and older age group ($\bar{X}$ = 0.377) in consecutive order. The order of means for neighborhood participation and number of children living at home for the different age groups were found to be exactly the same.

TABLE XIV

ANALYSIS OF VARIANCE FOR STREET FORM TYPES AND AGE OF THE HEAD OF HOUSEHOLD FOR NEIGHBORHOOD PARTICIPATION

Source	M.S.	d.f.	F	P
A. Street Forms	73.205	2	1.8576	0.15557
B. Age of the Head of Household	115.643	3	2.9345	0.0330*
AB. Interaction	18.716	6	0.4749	0.8279
Error	39.408	288		

*Significant

Street Form Types and Occupational Status of the Head of Household

The hypotheses analyzing street form types and occupational status of the head of household for neighbor familiarity are as follows:

H_{13}: There is no significant difference in neighbor familiarity by:

H_{13A}: street form types.
H_{13B}: occupational status of head of the household.
H_{13C}: interaction between street form types and occupational status of the head of the household.

TABLE XV

ANALYSIS OF VARIANCE FOR STREET FORM TYPES AND OCCUPATIONAL STATUS OF THE HEAD OF HOUSEHOLD FOR NEIGHBOR FAMILIARITY

	Source	M.S.	d.f.	F	P
A.	Street Forms	0.588	2	0.8727	0.5779
B.	Occupational Status	0.596	3	0.8853	0.5484
AB.	Interaction	0.412	6	0.6120	0.7229
	Error	0.674	254		

The occupational status scale was divided as follows: (1) professionals, technical and kindred; (2) proprietors, managers and officials; (3) clerical and kindred; (4) sales and kindred; (5) craftsmen, foremen and skilled workers; (6) operatives and semi-skilled workers; (7) public and private service workers; and (8) laborers and unskilled workers.[3] Street form types, occupational status of the head of household and interaction between these two paired variables were found to be non-significant.

The hypotheses analyzing street form types and occupational status for neighborhood participation are as follows:

H_{14}: There is no significant difference in neighborhood participation by:

H_{14A}: street form types.
H_{14B}: occupational status of the head of household.
H_{14C}: interaction between street form types and occupational status of the head of household.

TABLE XVI

ANALYSIS OF VARIANCE FOR STREET FORM TYPES AND OCCUPATIONAL STATUS OF THE HEAD OF HOUSEHOLD AFFECTING NEIGHBORHOOD PARTICIPATION

	Source	M.S.	d.f.	F	P
A.	Street Forms	36.824	2	0.8625	0.5736
B.	Occupational Status	20.992	3	0.4917	0.6927
AB.	Interaction	18.292	6	0.4285	0.8603
	Error	42.692	254		

Street form types, occupational status of the head of household and interaction between these two paired variables were found to be nonsignificant.

Street Form Types and Street Block Size

In previous discussions, it has been found that neighbor familiarity is highly influenced by length of residence. In this regard, neighbor familiarity has been defined as how intensely does a person know his neighbors. However, the actual number of people a neighbor may know is

different from the intensity of personal relationships. Within this context, neighbor familiarity was defined as the percentage of persons known on the block.

There appears to be a substantial difference in the number of existing households for the three street form types. Curvilinear streets ($\bar{X}$ = 21.00) were found to have the most dwelling units with linear streets ($\bar{X}$ = 19.87) and cul-de-sac streets ($\bar{X}$ = 7.87) following in consecutive order. The difference in block size for cul-de-sac streets is substantially smaller than the other two street form types. Due to this physical difference, the researcher investigated the notion that there might be a difference in the distribution of neighbor familiarity intensity scores. Figure 5 illustrates the distribution of these scores by the use of a Lorenz curve. The distributions for curvilinear and linear streets are highly similar. However, cul-de-sac street scores are distributed differently.

Cul-de-sac streets were found to be substantially lower in identifying neighbors as not known or known by name only. Persons living on cul-de-sac streets ($\bar{X}$ = 83.8%) were found to know a greater number of neighbors than do persons living on curvilinear streets ($\bar{X}$ = 50.6%) and linear streets ($\bar{X}$ = 46.0%). Since the cul-de-sac street is shorter, a person might assume that a neighbor will know a greater percentage of his neighbors. However, he does not necessarily know a greater number of people. To test this assumption the following null hypothesis was tested.

H_{15}: There is no significant correlation between the percentage of households known on the street block and the total number of households existing on the street block.

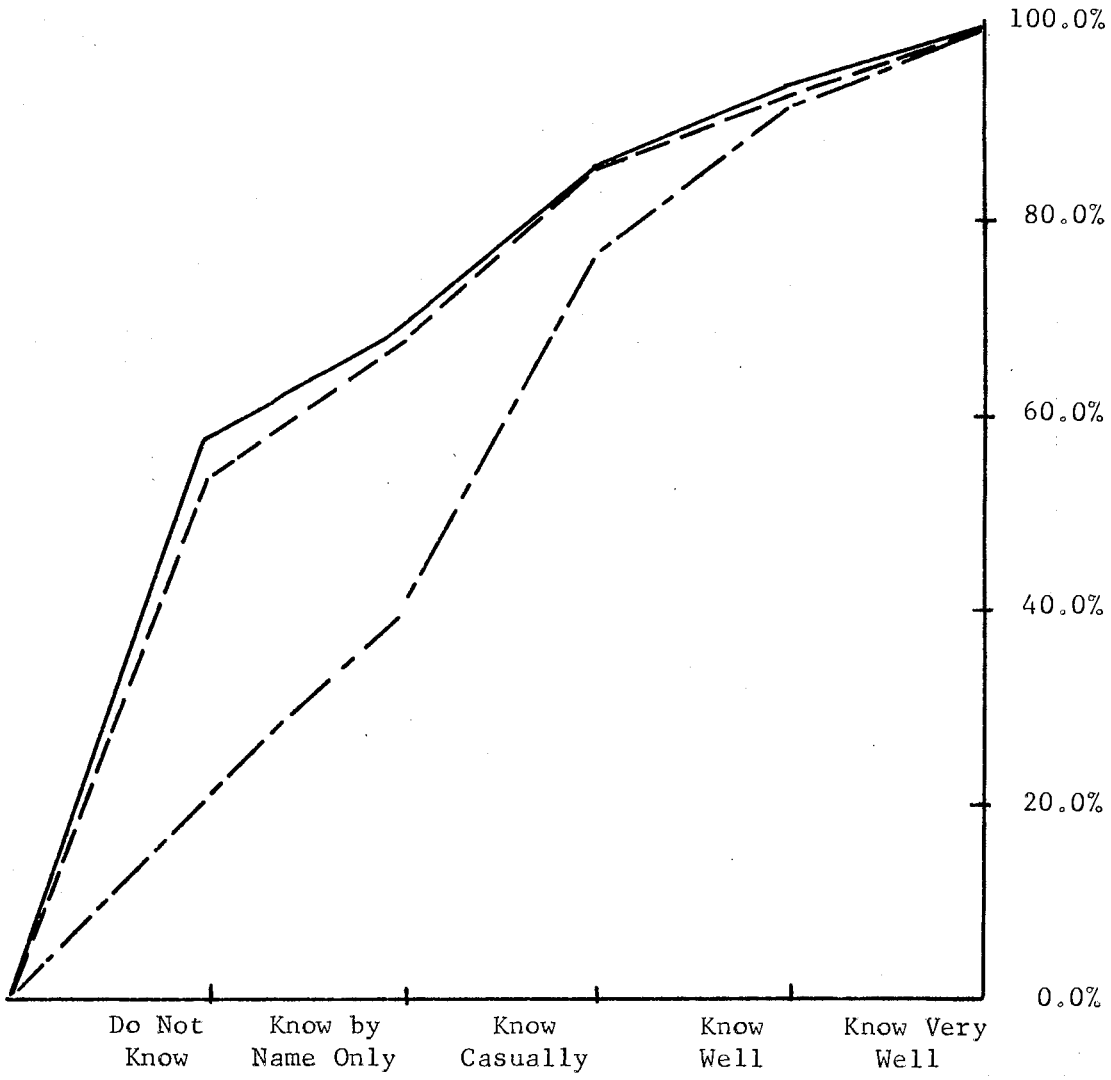

Figure 5. Percentage Distribution of Neighbor Familiarity Scores by Street Form Types

A significant correlation (Rp = -.35) was found between these two variables. The test result is interpreted that as a street contains fewer residences, a neighbor will tend to know a greater percentage of the households on his street block.

Since there seems to be a difference in neighbor familiarity by number of people known in relation to block size, a person might assume a difference in neighborhood participation. To test this assumption, the following null hypotheses was made:

H_{16}: There is no significant correlation between the neighborhood participation of each household and the total number of households existing on the street block.

A nonsignificant correlation (Rp = +.09) was found between the two variables. Figure 6 illustrates the distribution of participation scores in a Lorenz curve. The score distribution of all three street form types are highly similar. Also, the differences between means for neighborhood participation scores for linear streets ($\bar{X}$ = 19.636), curvilinear streets ($\bar{X}$ = 20.077) and cul-de-sac streets ($\bar{X}$ = 20.616) are nonsubstantial.

Summary of Findings

As hypothesized, street form types were consistently used as an independent variable affecting neighbor familiarity and neighborhood participation in all A.O.V. tests. Seven control variables were individually paired with street form types. Two hypotheses were directed to block size which has implied physical characteristics. These physical characteristics of size of the street block are related to the various street form types. The major findings with probability at the .05 level

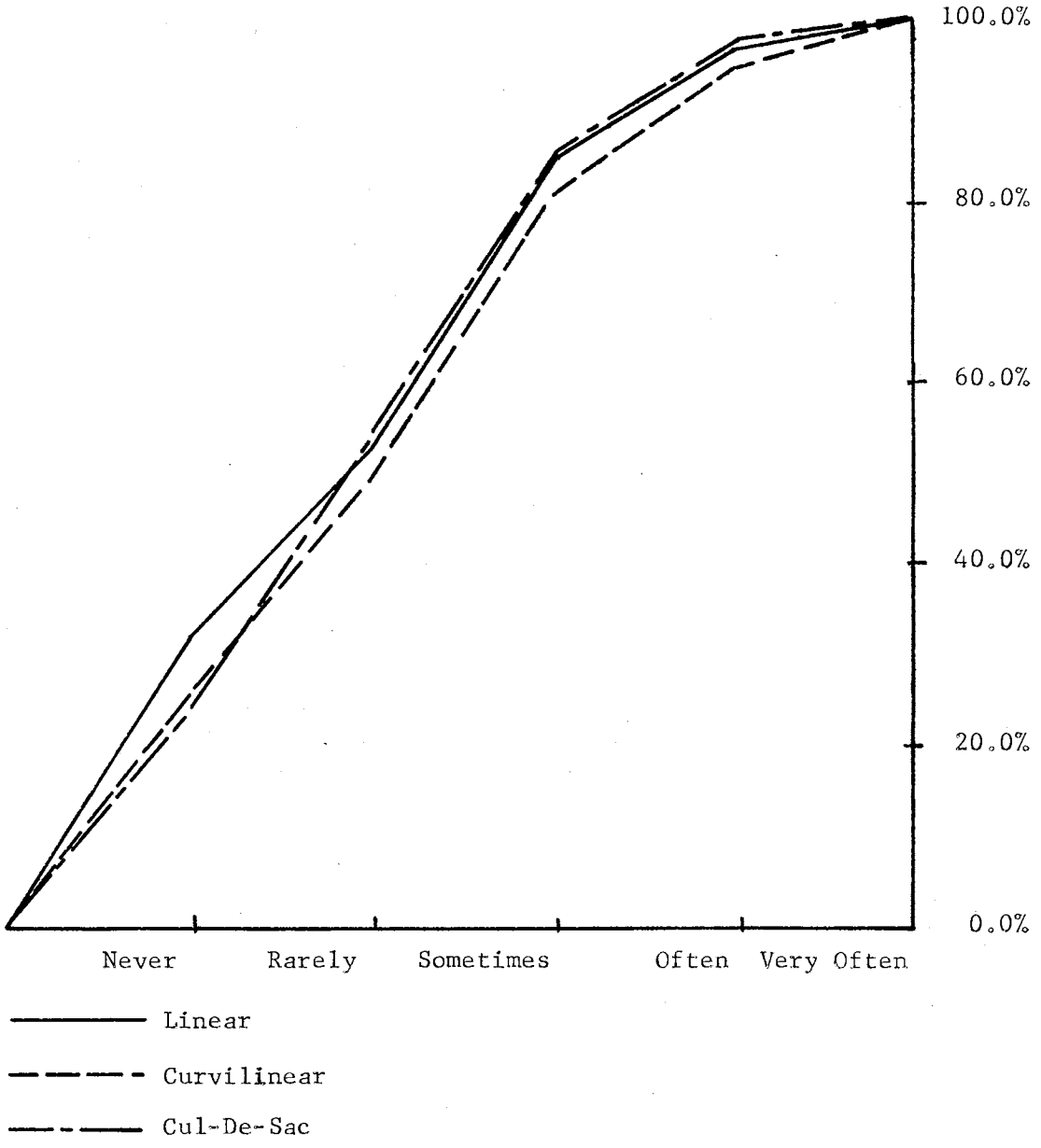

Figure 6. Percentage Distribution of Neighborhood Participation Scores by Street Form Types

are as follows:

1) Street form types were not found to be significant for neighbor familiarity when paired with the following independent variables: (1) number of children living at home; (2) length of residence; (3) neighborhoods; (4) job status of the woman of the household; (5) age of the head of the household; and (6) occupational status of the head of the household. When paired with marital status, street form types were found to be significant for neighborhood familiarity. This significance was traced to the influence from length of residence.
2) Street form types were not found to be significant for neighborhood participation when paired with the following independent variables: (1) number of children living at home; (2) length of residence; (3) neighborhoods; (4) job status of the woman of the household; (5) age of the head of the household; and (6) occupational status of the head of the household. When paired with marital status, street form types were found to be significant for neighborhood participation. This significance was traced to the influence of length of residence and the number of children living at home.
3) When paired with street form types, the number of children living at home was not found to be significant for neighbor familiarity. However, the same variable combination was found strongly significant for neighborhood participation.
4) When paired with street form types, length of residence was found to be strongly significant for neighbor familiarity and neighborhood participation.

5) When paired with street form types, neighborhoods were found to be significant for neighbor familiarity and neighborhood participation. However, the researcher was not able to trace the social influences which might support the effect.

6) When paired with street form types, marital status was not found to be significant for neighbor familiarity or neighborhood participation. However, street form types and marital status were found to interact significantly for neighbor familiarity. This is interpreted that marital status and street form types were not found to vary together for neighbor familiarity.

7) When paired with street form types, job status of the woman of the household was not found to be significant for neighbor familiarity or neighborhood participation.

8) When paired with street form types, age of the head of the household was found to be significant for neighbor familiarity; however, length of residence was found to be the source of influence to make age insignificant.

9) When paired with street form types, age of the head of the household was found to be significant for neighborhood participation; however, those age groups with more children living at home were also found to have greater participation.

10) When paired with street form types, occupational status of the head of the household was found not to be significant for neighbor familiarity or neighborhood participation.

11) A significant correlation was found between the percentage of households known on a block and the actual number of households

existing on the block. A person was found to know a greater percentage of households on a block when the block has fewer residences.

12) A nonsignificant correlation was found between the neighborhood participation of each household and the total number of households existing on the block. A person was found not to participate more or less in relation to the size of the block that he lives on.

The aforementioned findings assumed significance to be at the .05 level. However, there are some borderline cases where probability was greater than the .05 level but less than the .01 level. If this probability range were considered acceptable, the following findings could be defined as significant.

13) Street form types and neighborhoods were found to have significant interaction for neighborhood participation. This is interpreted that street form types and neighborhoods were not found to vary together for neighborhood participation.

14) When paired with street form types, marital status was found to be significant for neighborhood participation. It was found that married persons participated more than nonmarried persons.

15) When paired with job status of the woman of the household, street form types were found to be significant for neighborhood participation. However, the significance was traced to the influence of length of residence and the number of children living at home.

16) When paired with street form types, job status of the woman of the household was found to be significant for neighborhood participation. It was found that these women who spend more time at home have greater participation than those women working full-time.

FOOTNOTES

[1]U. S. Bureau of the Census, Census of Housing: 1970, Block Statistics, Final Report HC (3) -192, Tulsa, Oklahoma, Urbanized Area (Washington, D. C., 1971), pp. 31-66.

[2]Richard P. Coleman and Bernice L. Neugarten, Social Status of the City (San Francisco, 1971), p. 72.

[3]Ibid.

CHAPTER VII

CONCLUSIONS

Conclusions in Perspective

After the development of a holistic theoretical essay on the socio-spatial aspects of suburbia (Chapters II-V), the methodology was directed specifically and only to street form types. Implications and conclusions are concentrated on street form types in the perspective of the holistic conceptual framework of gestalt neighborism.

Limitations of the Study

It is important to note that the findings reached in this study are based upon certain limitations inherent in the methodologies. To make a study operational, certain assumptions and limits must be made.

The sample size of 301 responses is adequate, but a larger sample would make the findings stronger when assessing the results. Since the study was conducted in one city, regional variation or city size have not been considered here. The researcher thinks that these two variables are probably of little importance in relation to street form types. Inner-city variation in different areas of the community has not been accounted for. However, many neighborhoods could not be used since there were no cul-de-sac streets within many areas of Tulsa, Oklahoma. The findings are limited to the American suburban culture. Since other

cultures have not been included, comments on the study on a cross-cultural basis are greatly limited. American suburbia is highly identified as containing single family housing, and inferences to group housing configurations are not necessarily applicable. Single family suburbia includes private yard spaces and a vehicular movement area. Group housing usually contains community space with a very limited auto traffic flow. Also, there are usually differences in the ownership of property. The orientation of individual dwelling units is also different. Single family suburbia is mainly limited to one household per structure which is normally one or two stories in height. Group housing can contain many households within a structure and building height is usually greater and varied.

The selection of the woman of the household as the respondent to the questionnaire poses some limiting conditions. The woman was selected because she would be the most informed about household activities. However, the man of the household and the children can easily have different relationships in the neighborhood that the woman cannot account for. The woman may have answered with many personal biases, but she was requested to answer for the entire household. While this limitation exists, the researcher feels that the woman of the household will generally have more complete information about neighborhood activities.

The study was limited to active social behavior, and it did not deal with the psychological desires and choices. While cul-de-sac streets may not be significant for neighboring, the reasons for living on such a street may be very important. An individual may wish to live on a street which has little vehicular traffic and some privacy. The cul-de-sac street would be a logical choice. Also, the curvilinear

and linear streets might be considered desirable for other psychological reasons. Some persons selecting a home might not consider these aspects important. These issues could be significant, and the study has not included these psychological effects. However, the study has stressed individual performance which is more related to the neighboring act.

Traffic volume was controlled in the study by selecting only those blocks that were on neighborhood streets. High auto traffic volume streets were not considered. This variable was held constant, because research has shown that increased auto traffic flow reduces neighboring activity on the block.[1] If this variable had not been controlled, cul-de-sac streets may have been found significant for the neighboring variables, since this street form is a very low traffic volume street. If the traffic volume variable had not been held constant, significance due to street form types which orient the occupants to each other might not have been able to emerge. Traffic volume is not completely independent of street forms, and the variable must be considered. However, the majority of suburban neighborhood streets normally have low and similar traffic flow.

The construction of the neighbor familiarity variable is somewhat limited to variation. The respondent had to answer to a five level Likert scale for each neighbor on his block. Those neighbors living directly adjacent to him were the only persons included in the score. The numerical scores for these neighbors were averaged to obtain a single familiarity score. The reason for limited selection of neighbors was that if a real change in neighbor familiarity was to occur, that variation would be most significant with closely located neighbors. This limitation does not allow for individual independence such as knowing

a neighbor very well at a greater distance. Also, an average score is not as subject to variation as an additive score in a sample.

The variable, occupational status of the head of household, has some limitations which are due to inconsistency to job definition. The Coleman and Neugarten status ranking of occupation has eight levels.[2] Due to this simple breakdown of status, the definition of each level is somewhat general. Persons answering the questionnaire were asked to be specific in the position and type of job held. However, some respondents were general in nature. Also, job titles can give an inflated impression of the actual occupation. Due to the researcher having to interpret job titles with the generalized occupational scale, mistakes in interpretation have surely occurred.

The methodological approach of analysis of variance has limitations in regard to the treatment of independent variables. Since block size varies greatly, it is almost impossible to have a balanced cell size for the independent variables. An unbalanced cell size computer program which uses the harmonic mean for calculation was utilized to counteract the unbalanced situation. In using the harmonic mean, independent variables are not completely independent from each other. Overall each independent variable largely retains its independence. However, each independent variable is somewhat tainted by any other independent variables used in a test. As the imbalance of cases in each cell increases, the independent variables become more dependent on each other.

This situation can be avoided partially by using fewer independent variables in the A.O.V. test. Also, the attempt to balance internal divisions of each independent variable will increase independence. Two-way A.O.V. tests were utilized, and attempts to balance cells by

variable divisions were made. However, not all of the limitations were eliminated.

Due to the partial dependence of the two simultaneously tested independent variables, the significance of one of these variables cannot be interpreted separately from the other. Interpretations are forced to be highly qualified. Even though these conditions exist, the A.O.V. test is an efficient, effective approach to simultaneously test independent variables on a dependent variable.

Implications of the Study

The conclusions of this study will make an important assumption which differs from the findings. Independent variables were largely but not completely independent from each other with the use of the unbalanced cell size A.O.V. test. The conclusions will assume that these variables are independent from each other. These conclusions are as follows:

1) Street form types do not affect neighbor familiarity or neighbor participation.
2) The number of children living at home does not affect neighbor familiarity. However, the variable strongly influences neighborhood participation. Households with more children living at home will participate more in the neighborhood than those households with fewer children.
3) Length of residence strongly affects both neighbor familiarity and neighborhood participation. As a household lives longer on a block, the household will be more familiar and participate more with other households.

4) The neighborhood that a person lives in affects a neighbor familiarity and neighborhood participation. However, the researcher has not been able to trace the social influences which support the effect. It is concluded that some neighborhoods generate more familiarity and participation than others.

5) Marital status does not affect neighbor familiarity or neighborhood participation. Also, marital status and street form types do not vary together for neighbor familiarity.

6) The job status of the woman of the household does not affect neighbor familiarity or neighborhood participation.

7) Age of the head affects neighbor familiarity. However, length of residence was found to be the source of influence to make age significant. It is concluded that age of the head of the household and length of residence jointly affect neighbor familiarity. The longer a person lives at a household residence, he will have greater neighbor familiarity.

8) Age of the head of the household affects neighborhood participation. However, those age groups with more children living at home were also found to have greater participation. It is concluded that age of the head of the household and number of children living at home jointly affect neighborhood participation.

9) Occupational status of the head of the household does not affect neighbor familiarity or neighborhood participation.

10) A person tends to know a greater percentage of households on a street block when the street block has fewer household

residences. This condition can be generalized for all street form types. Even though a cul-de-sac street is usually smaller than the other street forms, a short curvilinear or linear street should show a greater percentage of persons known than longer curvilinear streets. However, since cul-de-sac streets are consistently shorter in single family subdivisions, it can be generalized that persons living on cul-de-sac streets will know a greater percentage of neighbors on their block than those individuals living on curvilinear or linear streets.

11) As a person tends to know a greater percentage of persons on a street block, he does not tend to participate more or less in his neighborhood.

It has been shown that street forms were not found significant for neighboring behavior. Length of residence and number of children living at home appear to be the major influences for neighboring. These findings discount some of the present beliefs that manipulation of streets can provide a better social atmosphere within single family suburbia. The emphasis on cul-de-sac streets by Clarence Perry in his neighborhood unit theory may be justified for controlled traffic movements but not necessarily for manipulating neighboring behavior. Many new residential subdivisions have increasingly used the cul-de-sac street instead of the traditional curvilinear and linear forms. This increased usage is not necessarily invalid. However, some of the ideologies supporting the design concept are no longer valid if this study is accepted.

It appears that the designer cannot directly influence behavior but only provide a set of choices for the home buyer. The recent surge of

the cul-de-sac has come because the street form has been largely neglected in the past. An overemphasis will not be effective. For new development, linear and curvilinear forms should not be eliminated. If the designer is to maximize individual choice, all street forms should be provided without emphasizing one particular form. The linear street is very susceptible to being deleted from use in the future, for the form appears nondescript in comparison to the cul-de-sac and curvilinear configurations. Also, the grid system of linear streets has been found to be an inefficient traffic system and use of land. This inefficiency was caused by overemphasis of one form. The same inefficiency would occur if the other two street forms were used exclusively within a residential subdivision design.

The configuration of the land lends itself to a multi-approach in the use of street forms. To ecologically honor the demands of the topography, all street forms should be used to meet the physical requirements. The singlular use of any one street form will eventually neglect the physical requirements of the land.

Neighboring behavior appears to be highly influenced by length of residence and number of children living at home. Neighbor familiarity is affected by length of residence. In comparison, neighborhood participation is not only affected by length of residence but also the number of children living at home. Familiarity and participation are not necessarily congruent due to the children. Neighboring behavior is more controlled by social determinism rather than physical determinism. However, physical determinism is not eliminated, because a home buyer has limited choices due to a preplanned environment. It appears that

Gans, Gutman and Michelson are essentially correct when they state that physical determinism has been overemphasized.[3]

This study has discounted the design ideology that street manipulation will affect social behavior in the single family neighborhood. While these findings may not surprise sociologists, the results are in opposition to the beliefs of practicing designers who are in the day to day process of site planning in American suburbia. The existence of this situation brings forth a more critical implication to scientific research. Many spatial studies are at the macro-scale while less study has been done at the micro-level. The designer is constantly manipulating space at the micro-scale, and his design tools need more research study. Street form types are designer tools which allow the architect developer and planner to formulate designs. A more concentrated effect by social scientists should be directed to the study of the effects of the designer's tools.

The cumulation of physical design errors at the micro-level eventually lead to an overwhelming problem at the macro-level. Many of the design problems in American cities are not due to massive design projects. Instead, the consistent continuation of misconceived use of designer tools at the micro-level, such as street forms, additionally created those physical problems of the urban environment. As the designer is informed of the effects of his tools, he can be more responsive and corrective in his design concepts for the community. The social scientist can affect the designed urban environment. He is able to inform and check the validity of the designer's conceptual tools which are used to manipulate the socio-spatial environment. To the extent the social scientist and designer are concerned with these issues,

the planning of a more profound socio-spatial environment will occur. The theoretical essay of this study provides this researcher the conceptual guideline for further scientific work dealing with the designer's conceptual tools.

FOOTNOTES

[1]Donald Appleyard and Mark Lintell, "The Environmental Quality of City Streets: The Resident's Viewpoint," Journal of the American Institute of Planners, XXXVIII (1972), pp. 84-101.

[2]Richard P. Coleman and Bernice L. Neugarten, Social Status in the City (San Francisco, 1971), p. 72.

[3]Herbert Gans, "City Planning and Urban Realities," Commentary, XXXIII (1962), pp. 170-175; Robert Gutman, "Site Planning and Social Behavior," Journal of Social Issues, XXII (1966), pp. 103-115; William Michelson, "Determinism of the Urban Environment," in Man and His Urban Environment (Reading, Massachusetts, 1970), pp. 168-190.

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APPENDIX A

COVER LETTER: ORIGINAL

OKLAHOMA STATE UNIVERSITY • STILLWATER

Department of Sociology
(405) 372-6211, Exts. 7020, 7021

74074

April 16, 1973

Dear Woman of the Household:

I am in the process of completing a doctoral dissertation in the study of neighboring patterns within American suburbia. The research is an attempt to understand the various levels of attitudes andlocal participation of neighbors in relation to their spatial arrangement of streets. I am asking you to take part in the completion of it. The questionnaire will not take much time and your answers will be absolutely confidential.

I would appreciate it if you would please fill out the included surveys and return them in the enclosed envelope. How do you feel about the items is more important than how you think, so do not take too much time in wondering what you should say.

Also, I ask that you do not discuss your answers with anyone until after you have mailed the questionnaire. We are particularly interested in your first impressions.

If you complete the requested material immediately after reading this letter, the chances are greater that you will be able to return this most important information.

Thank you for your cooperation, and I will look forward to hearing from you.

Sincerely,

Jim Mayo
Assistant Instructor

JM/jc

APPENDIX B

COVER LETTER: FOLLOW UP

OKLAHOMA STATE UNIVERSITY • STILLWATER

Department of Sociology
(405) 372-6211, Exts. 7020, 7021

May 3, 1973

Dear Woman of the Household:

Two or three weeks ago you received a questionnaire in the mail dealing with neighboring as related to street arrangements; however, we have not received this questionnaire from you. Your name was not necessary and will not be used in this study in any way other than for determining who returned questionnaires. The code number on the questionnaire was used only to enable me to send a follow-up request for response. Your questionnaire is very important; so I will ask you to return it to us as soon as you can.

I know that you are very busy, but perhaps you could spare a few minutes to help with this study so that social scientist can better understand neighboring patterns.

The other questionnaire may have become misplaced or my record keeping may have been in error. At any rate, I am enclosing another questionnaire for your convenience. If you have already filled out a questionnaire and returned it, please disregard this letter. If you have not already done so, please fill out and return the questionnaire in the enclosed prepaid envelope.

Again, remember that all of this information is CONFIDENTIAL. If you fill out the questionnaire while the questionnaire is in your hands, the chances are greater that you will return the information. Thank you for your cooperation. I will look forward to hearing from you.

Sincerely,

Jim Mayo
Assistant Instructor

JM/jc

APPENDIX C

QUESTIONNAIRE

QUESTIONNAIRE

This is to be completed by the woman of the household. If no woman occupies your house, the man of the household will please answer the questions. Please answer every question, filling all appropriate blanks or squares.

1. Marital Status

_____ Married
_____ Remarried
_____ Separated or Divorced
_____ Widowed
_____ Single

2. Number of children of school age or younger living at home.

_____ (Write number)

3. Length of residence in this home.

_____ One year or less
_____ Two to three years
_____ Three to four years
_____ Four years or more

4. What is your work status?

_____ No paying job
_____ Part time paying job
_____ Full time paying job

5. Age of head of the household.

_____ (Write age)

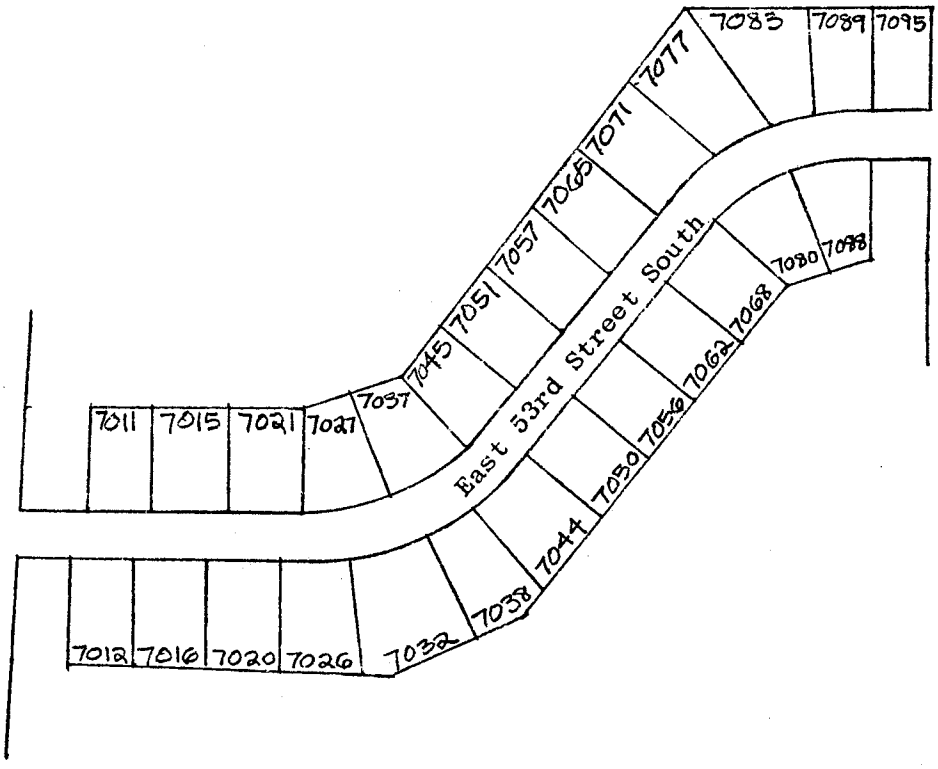
6. What is the primary occupation of the head of the household?

_____
(Please be specific)

7. Mark an "X" in the square which indicates your home. Put in each of the house lots representing your neighbors one of the following numbers:

4 - know the household very well
3 - know the household well
2 - know the household casually
1 - know the household by name only
- If you do not know the household or nobody lives there, leave the lot blank.

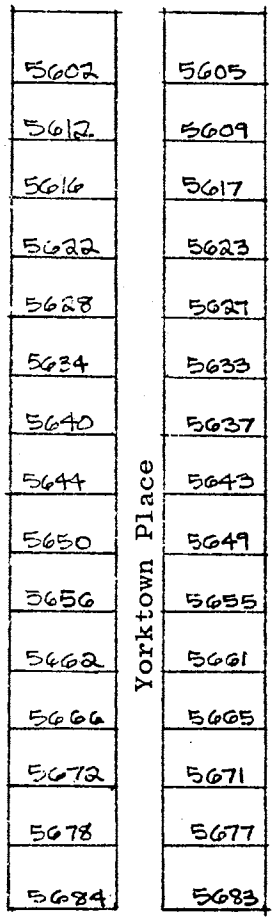
*Example: curvilinear street



7. Mark an "X" in the square which indicates your home. Put in each of the house lots representing your neighbors one of the following numbers:

4 - know the household very well
3 - know the household well
2 - know the household casually
1 - know the household by name only
- If you do not know the household or nobody lives there, leave the lot blank.

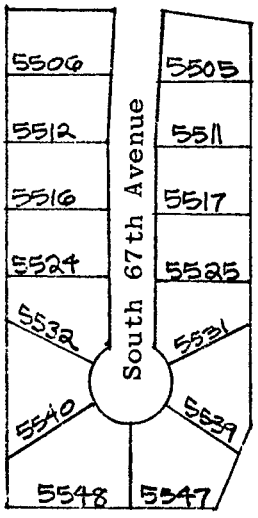
*Example: linear street



7. Mark an "X" in the square which indicates your home. Put in each of the house lots representing your neighbors one of the following numbers:

4 - know the household very well
3 - know the household well
2 - know the household casually
1 - know the household by name only
- If you do not know the household or nobody lives there, leave the lot blank.

*Example: cul-de-sac street



Rate the strength of your opinion to the following questions concerning the amount of participation of all your household members averaged together. Mark one appropriate blank.

8. How often do your household members attend indoor informal gatherings with neighbors living on your street? (examples: morning coffee, kids getting together for play or refreshments, evening or afternoon tea, cocktails, etc.)

_____ Never
_____ Rarely
_____ Sometimes
_____ Often
_____ Very often

9. How often do your household members attend formal gatherings with neighbors living on your street? (examples: birthday parties, dinner parties, anniversary parties, tupperware parties, etc.)

_____ Never
_____ Rarely
_____ Sometimes
_____ Often
_____ Very often

10. How often do your household members watch television, listen to the radio, share magazines, comic books, newspapers or other mass communication media with neighbors living on your street?

_____ Never
_____ Rarely
_____ Sometimes
_____ Often
_____ Very often

11. How often do your household members lend or borrow items from neighbors living on your street? (examples: cup of sugar, lawnmower, toy, etc.)

_____ Never
_____ Rarely
_____ Sometimes
_____ Often
_____ Very often

12. How often do your household members give or receive items with neighbors living on your street? (examples: flowers, food dish, outgrown children's clothes, special gifts, etc.)

_____ Never
_____ Rarely
_____ Sometimes
_____ Often
_____ Very often

13. How often do your household members talk on the telephone with neighbors living on your street?

_____ Never
_____ Rarely
_____ Sometimes
_____ Often
_____ Very often

14. How often do your household members have front yard or backyard chats with neighbors living on your street?

_____ Never
_____ Rarely
_____ Sometimes
_____ Often
_____ Very often

15. How often do your household members have joint outdoor activities with neighbors on your street? (examples: common gardening, morning or evening walks, bicycling, children's playing, hunting and fishing trips, football games, kids going to a movie together etc.)

_____ Never
_____ Rarely
_____ Sometimes
_____ Often
_____ Very often

16. How often do your household members participate in formal organizations with neighbors on your street? (examples: Girl Scouts, Boy Scouts, Garden clubs, Kiwanis Club, Masons, League of Women Voters, etc.)

_____ Never
_____ Rarely
_____ Sometimes
_____ Often
_____ Very often

PLEASE CHECK TO SEE IF YOU HAVE ANSWERED ALL QUESTIONS!

T H A N K Y O U!

APPENDIX D

SPEARMAN CORRELATIONS OF CONTROL VARIABLES WITH NEIGHBORHOODS

TABLE XVII

SPEARMAN CORRELATIONS OF CONTROL VARIABLES WITH NEIGHBORHOODS

Spearman Correlations of Rank Mean Scores of Neighborhoods for Neighbor Familiarity With:	
1. Number of Children Living at Home	Rs = +.79
2. Length of Residence	Rs = +.12
3. Head of Household Occupational Status	Rs = -.02
4. Age of the Head of Household	Rs = +.43
Spearman Correlations of Rank Mean Scores of Neighborhoods for Neighborhood Participation With:	
5. Number of Children Living at Home	Rs = +.79
6. Length of Residence	Rs = +.01
7. Head of Household Occupational Status	Rs = +.32
8. Age of the Head of Household	Rs = +.32

APPENDIX E

DISTRIBUTION OF NEIGHBOR FAMILIARITY SCORES BY STREET FORM TYPES

TABLE XVIII

DISTRIBUTION OF NEIGHBOR FAMILIARITY SCORES BY STREET FORM TYPES

	Do Not Know	Know by Name Only	Know Casually	Know Well	Know Very Well	Total
Linear	1132(57.4)	228(11.5)	331(16.8)	155(7.9)	126(6.4)	1972(100.0)
Curvilinear	1055(53.3)	274(13.8)	361(18.2)	145(7.3)	147(7.4)	1982(100.0)
Cul-De-Sac	183(20.4)	172(19.2)	329(36.7)	135(15.0)	78(8.7)	897(100.0)

*The number in parentheses is the percentage.

APPENDIX F

DISTRIBUTION OF NEIGHBORHOOD PARTICIPATION SCORES BY STREET FORM TYPES

TABLE XIX

DISTRIBUTION OF NEIGHBORHOOD PARTICIPATION SCORES BY STREET FORM TYPES

	Never	Rarely	Sometimes	Often	Very Often	Total
Linear	249(31.4)	168(21.2)	250(31.6)	97(12.3)	28(3.5)	692(100.0)
Curvilinear	181(25.1)	174(24.2)	223(31.0)	101(14.0)	41(5.7)	720(100.0)
Cul-De-Sac	263(29.4)	220(24.6)	275(30.8)	99(11.1)	37(4.1)	894(100.0)

*The number in parentheses is the percentage.

VITA

James Marvin Mayo, Jr.

Candidate for the Degree of

Doctor of Philosophy

Thesis: A STUDY OF SUBURBAN STREET FORMS IN RELATION TO SINGLE FAMILY NEIGHBORING: A GESTALT APPROACH

Major Field: Sociology

Biographical:

Personal Data: Born in Houston, Texas, March 20, 1943, the son of Marvin and Carrie Mayo.

Education: Graduated from Odessa High School, Odessa, Texas, in May, 1961; received the Bachelor of Architecture from Texas A & M University, College Station, Texas, in May, 1966; received the Master of Urban Planning from Texas A & M University in May, 1968; completed the requirements for the Doctor of Philosophy at Oklahoma State University in May, 1974.

Professional Experience: Graduate Assistant, College of Architecture Environmental Design, Texas A & M University, College Station, Texas, September, 1966, to January, 1968; Urban Planner, Georgia State Planning Bureau, Atlanta, Georgia, February, 1968, to March, 1969; Senior Project Planner, Mayes, Sudderth and Etheredge, Inc., Atlanta, Georgia, April, 1969, to August, 1970; Graduate Assistant, Department of Sociology, Oklahoma State University, January, 1971, to May, 1971; Assistant Instructor, Department of Sociology, Oklahoma State University, September, 1971, to May, 1973; Assistant Professor, School of Architecture and Urban Design, University of Kansas, September, 1973, to present.