ANALYSIS OF THE CONGRESS OF NEW URBANISM
LANDSCAPE DESIGN PRINCIPLES
AND SOCIAL INTERACTION

by

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ABSTRACT

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The Congress of New Urbanism (CNU) seeks to change the way cities and towns are built by creating compact neighborhoods that encourage pedestrian activity. This study was an exploration of the design principles of the Congress of New Urbanism (CNU) as they relate to contemporary neighborhood design research and how effective they are at stimulating social interaction through increased use of outdoor areas. The context of the study stems from the CNU implying that friendly sociable neighborhoods can be physically designed (Talen 2002). More specifically, the CNU states that the design characteristics promoted by the CNU foster social interaction within neighborhoods through increased use of the outdoor areas (Duany 2000).

The study reviewed research examining how to create urban neighborhoods that engender social interactions such as Lennard's (1987) research on social design principles and Hester's (1984) research on good neighborhood space. The research included a cross-sectional behavioral study collecting data on neighborhood use and social interaction from a new urbanism and single use residential neighborhood. The study offers insight into the correlations of CNU design principles and contemporary neighborhood research and concludes with a review of the effectiveness of the Congress of New Urbanism design principles as related to social interaction and neighborhood use.

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INTRODUCTION

1.1 Research Objectives

The Congress of New Urbanism suggests that new urbanism neighborhoods foster social interaction through an increase in the use of outdoor areas (Duany 2000). This study was an exploration of the design of a new urbanism neighborhood as it relates to stimulating social interaction through increased use of the outdoor areas. Additionally, the study compares the physical design characteristics of the CNU neighborhood with other research on good neighborhood design such as Lennard's (1987) research on social design principles and Hester's (1984) research on good neighborhood space.

1.2 Research Questions

The principal research questions raised in this paper are:

1. How do the Congress of New Urbanism principles correlate with existing research of urban space that supports social interaction?
2. Do the Congress of New Urban implications of higher levels of social interaction through increased use correlate with an actual new urbanism neighborhood?

1.3 Definition of Terms

Neighboring:

Neighboring is interaction that takes place between two or more neighbors living on the same floor, in the same building, or in the same neighborhood within a larger community (Festinger, 1950).

New Urbanism:

New Urbanism is the restoration of existing urban centers and towns within coherent metropolitan regions, the reconfiguration of sprawling suburbs into communities of easily defined neighborhoods and diverse districts, the conservation of natural environments, and the preservation of the built legacy (Barnett, 2000).

Social Interaction:

Social interaction is a social opportunity in which two or more residents attend to the quality of their relationships through formal and informal encounters in semi public or public places in the neighborhood and may include neighboring, casual encounters, community participation, and social support (Joongsub, 2001).

Neighborhood:

A neighborhood is a district or area with distinctive characteristics such as a neighborhood of fine homes or an ethnic neighborhood (Lynch and Bourassa, 1999).

Single Use Residential Neighborhood:

A residential area separated from commercial or industrial areas and devoted specifically to single family housing is a single use residential area (Duany 2000).

Infill Development

The redevelopment within an existing development which attempts to create new and usually higher density uses for the land is infill development (Meyer 2005).

Third Places

Third places are a generic designation for a great variety of public places that host the regular, voluntary, and informal gathering of individuals beyond the realms of home and work (Oldenburg 1999).

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The literature review begins with the origins of the Congress of New Urbanism (CNU), providing a brief history as well as defining the major principles that drive the movement. The review continues with an examination of neighborhood research pertinent to stimulating social interaction, neighborhood attachment and satisfaction.

2.2 Background of the Congress of New Urbanism

The New Urbanism movement was codified through the Congress for the New Urbanism (Leccese and McCormick 2000) founded in 1993 by a meeting of one hundred and seventy designers organized to compare works-in-progress and exchange ideas about urban and suburban places. Architects Peter Calthorpe, Andres Duany, Elizabeth Moule, Stefanos Polyzoides, Elizabeth Plater-Zyberk, and Daniel Solomon, along with organizer Peter Katz, developed the Congress for the New Urbanism (CNU) as a non-profit organization to promote and disseminate information about New Urbanism. The CNU Charter was developed between 1993 and 1996, when it was ratified at the fourth annual Congress in Charleston, South Carolina (Leccese and McCormick 2000). The charter consists of twenty principles that outline the goals and ideals of the New Urbanism (Bressi, 1996).

Currently, the CNU has over two thousand three hundred members in twenty countries and forty-nine states. Federal cabinet secretaries (such as former Secretary of Housing and Urban Development, Andrew Cuomo) and state governors (such as Maryland Governor Parris Glendening) are among members promoting policies geared to make cities and towns more livable in the sense of creating a better quality of life as experienced by the residents (Seymoar 2005). Over eleven hundred people attended the CNU IX in New York City in June of 2001.

The basic ideology of the CNU is to develop more dense metropolitan regions that are composed of well structured cities, towns, and neighborhoods that preserve farmland and environmentally sensitive areas, and that promote infill development with mixed use areas (Barnett 2000). The new urbanism movement has been the most widely accepted alternative to "sprawl" since the early nineteen nineties (Lehrer and Milgrom 1996). It is seen as the revival of neo-traditional neighborhood design and is concerned primarily with the promotion of mixed land uses and increased densities throughout the urban landscape. The goals of the principles presented through the CNU are to restore urban centers, reconfigure sprawling suburbs, conserve environmental assets, and preserve the built legacy.

2.3 Principles of the Congress of New Urbanism

The CNU design principles are broken down into three major scales. The largest scale is composed of regions. The middle scale is made up of neighborhood, districts, and corridors. The smallest scale is composed of block, streets, and buildings. These

principles are used to guide public policy, development practice, urban planning, and design.

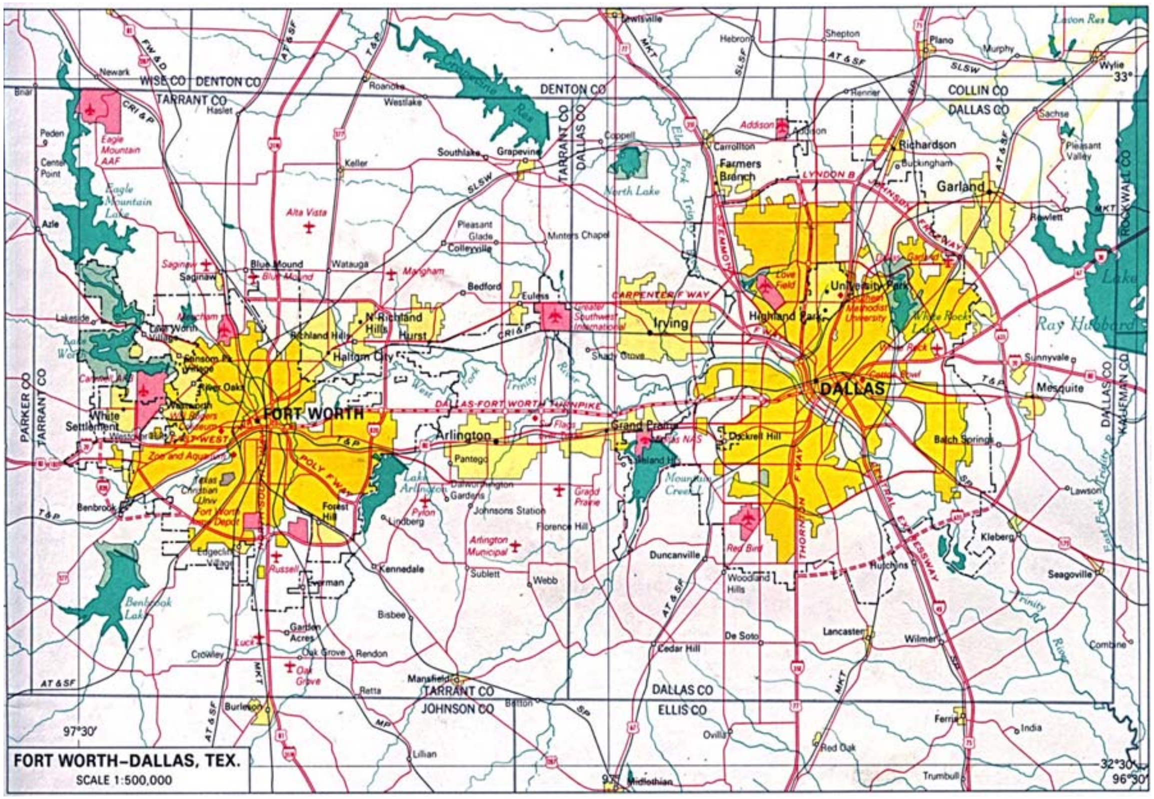

Figure 2.1 Region

The metropolitan region, the largest scale within the CNU, is considered to be the fundamental economic unit of the contemporary world (Calthorpe 2000). As a result of this view, government cooperation, public policy, physical planning, and economic strategies must reflect this new reality in dealing with the environment, infrastructure, social issues, and integration of economic equity opportunities. Calthorpe argues that urbanism should be defined by its diversity in use and population, scale that is inviting and accommodating to pedestrians, space that is used by the

general public, and structure that holds neighborhoods together. These concepts should be applied throughout a metropolitan region regardless of location, in suburbs and new growth areas, as well as within the city. A metropolitan region should, like a neighborhood, be structured by public space. Its circulation system and pedestrian support should be diverse providing a variety of options. These options must maintain a hierarchical structure in order to channel traffic efficiently while establishing discernible edges (Katz 1994). The Dallas Fort Worth metroplex in Figure 2.1 Region is a good example of what a region would entail both cities as well as the surrounding metropolitan area.

Within the Congress of the New Urbanism the middle scale is composed of neighborhoods, districts and corridors. Neighborhoods are defined as urbanized areas that have a balanced blend of human activity. Districts are marked by a dominant single activity. Corridors are the connectors and separators of neighborhoods and districts (Katz1994). As a result of these definitions, cities and towns are made up of many neighborhoods and districts, organized and linked through transportation corridors.

The neighborhood scale updates timeless principles in response to new challenges. These include introducing urbanism to the suburbs, both in building and rebuilding, while respecting the fabric of communities built before World War II. Another challenge is to resolve the conflict between the fine detail of traditional urban environments and the large-scale realities of contemporary institutions and technologies. This is the heart of the CNU: the reassertion of fundamental urban design

principles at the neighborhood scale and their unique accommodations to the contemporary world (Barnett 2000).

Figure 2.2 Mixed Use

These fundamental design principles include a balanced mix of uses within a neighborhood, including housing, retail, open space, civic buildings, and employment centers as demonstrated by Figure 2.2 Mixed Use of Addison Circle in Addison, Texas (Calthorpe 1989). Housing types are varied, and may include single detached units, semi-detached units, rowhouses and apartments. There are also hybrid types of housing, or example, apartments over retail or office space and residences over garages (Bressi 1994). Retail space may include corner stores, where daily needs can be met, or neighborhood shopping centers, which serves a wider area (Duany et al. 2000). Civic

buildings are often associated with open space, and can include a school, a place of worship, a community hall, a post office or another type of community building (Duany and Plater-Zyberk 1994). Employment centers should be included in the neighborhood, so that employment balances population (Duany 2000).

The principles of the CNU state that neighborhoods should be economically diverse in use and population. The communities should be designed for pedestrians and mass transit, as well as the car. Physically defined and universally accessible public spaces and community institutions should shape cities and towns. The urban places should be framed by architecture and landscape design that celebrates local history, climate, and ecology, as well as building practice (Polyzoides 2000).

The neighborhood as a component should have a center and a clearly defined edge. The combination of a focus and limit contribute to the social identity of the community. The center is typically a public space such as a square or an important intersection. The edges are often defined by boulevards or parkways, which may be lined by higher-density buildings. The optimum size of a neighborhood is a quarter mile from center to edge (Duany and Zyberk 1994). Additionally, the neighborhood has a balanced mix of activities such as shopping, work, schools, recreation, and a variety of housing types for a range of incomes. Neighborhood streets are scaled to provide equality for the pedestrian, the bicycle, and the automobile. Priority is given to the creation of public spaces and to the appropriate location of civic buildings (Katz 1994).

The Congress of New Urbanism's (CNU) ideals (walkable, pedestrian friendly communities organized around a main street with a range of mixed uses) are not new ideas. These ideals stem from design concepts of the nineteenth century, such as the City Beautiful movement, Ebenezer Howard's Garden Cities (Bookout 1992) and the ideas of Jane Jacobs (1993).

Figure 2.3 Paley Park

Blocks, streets, and buildings compose the smallest scale among the CNU's principles. The deliberate assembly of these parts realizes the form of New Urbanism. They are viewed as interdependent with each containing ingredients that influence the other (Moule and Polyzoides 1994). The New Urbanism view stresses the integration of all architectural, engineering and design disciplines, as well as the participation of the public. The street is to be seen as a series of communal rooms and passages. A street,

lane, boulevard, or parkway is not just a conduit for cars; but also a place for socializing, games, commerce, and civic art (Dover 2000). Within each block lobbies, major ground floor spaces are viewed as an extension of the public space of the city (Maule and Polyzoides 1994). Figure 3.4 Paley Park in New York is a good example of a street having a communal room. The space is located directly on the street so that people are attracted to look in and enter. There is a social dimension with food, as well as moveable chairs and tables that let people be comfortable and have some control over where they sit. A waterfall provides a dramatic focal point and a reason to enter the park and creates a sense of quiet and privacy amidst a busy street. Blocks are to provide a mutually beneficial relationship between people and vehicles, while buildings make up the final and most fundamental organisms in New Urbanism. The CNU stresses the following principles in regard to the street, block, and building. Individual architectural projects should be seamlessly linked to their surroundings in a manner that signifies continuity within the neighborhood. The architecture and landscape design should grow from local climate, topography, history, and building practice. Preservation and renewal of historic buildings, districts, and landscapes should affirm the continuity and evolution of urban society. Safety and security are considered essential for the revitalization of urban places. Streets and squares should be safe, comfortable in scale to pedestrians, as well as interesting. Addison Circle in Texas displays such characteristics providing comfortable sidewalks for pedestrians and a feeling of safety with open spaces and reduced automobile speeds. New Urbanism sites encourage walking and enable neighbors to know each other. These pedestrian friendly spaces

must adequately provide for automobiles in ways that respect the pedestrian and the form of public space. Additionally, street and building designs should reinforce safe environments, but not at the expense of accessibility and openness (Solomon 2001).

2.4 Congress of New Urbanism Project Types

The CNU ideals have been used to develop various project types. Among these are Greyfield Mall, Subsidized Housing, Suburban and Urban Infill, Traditional Neighborhood (TND), and Transit Oriented Design (TOD). The following is a brief description of each project type.

Greyfield Mall

Greyfield Malls are older economically obsolescent regional malls in the United States. These projects involve the construction of mixed-use commercial and residential projects on the Greyfield mall sites. They projects replace obsolete properties with urban synergies and increase households in trade areas (Global Strategies Real Estate Research Group 2001).

Subsidized Housing

Subsidized Housing within New Urbanism consists of either the development or redevelopment of affordable housing applying New Urbanism principles. Like regular market-rate housing, virtually all of the affordable housing that is developed today is privately built and owned either by non-profit organizations or private businesses and corporations (Los Angles Housing Development 2004). These organizations use a combination of public subsidies and bank loans

to construct new homes and apartments that are affordable to low- and moderate-income families. In part because modern affordable housing contains a significant amount of private financing, that comes with investor and lender oversight, the developments are professionally managed to ensure that the new housing retains its value and remains attractive and affordable (Los Angles Housing Development 2004).

Suburban and Urban Infill

Infill refers to the conscious placement of investment and economic activity on sites that the market has previously abandoned or given low valuation (Meyer 2005). Infill development is simply redevelopment within an existing development. Rather than starting with land in a relatively untouched area and building a residential subdivision or office park, like traditional development, New Urbanism infill attempts to create new and higher density uses for land within existing developments. Infill development is not, however, always a developer's first choice. Challenges associated with infill include the small, scattered nature of many infill parcels, complex title issues, outdated infrastructure serving the infill site, and environmental contamination. For these reasons, urban infill is often bypassed by developers for cheap, readily available suburban land (PolicyLink 2005).

Traditional Neighborhood Design (TND)

Traditional Neighborhood Design (TND) (also called "Neo-Traditional Neighborhood Design") is a town planning principle that has gained acceptance

in recent years as being one solution to a variety of problems in suburban communities throughout the country. Traditional neighborhoods are more compact communities designed to encourage bicycling and walking for short trips by providing destinations close to home and work, and by providing sidewalks and a pleasant environment for walking and biking. These neighborhoods are reminiscent of 18th and 19th century American and European towns, along with modern considerations for the automobile (Post 1994).

Transit Oriented Development

Transit-oriented development implements New Urbanism principles in an environment centered around a transit stop or station. The concept involves zoning the areas around transit stations for compact development that provides services for the neighborhood and commuters (Grimshaw 1999). The development supports pedestrian activities and transit use by providing for a mix of land uses (e.g. residential, retail, commercial, parking, etc.) in a safe, clean vibrant and active place. Transit-friendly planning can be a community's most effective tool to achieving a balance of land use, transportation, and open space interests in an environmentally sensitive manner, while managing growth and change.

2.5 Community and Social Interaction

References to community within the Charter of the New Urbanism promote the notion of strengthening civic bonds. For example the Charter states, “Streets and squares should be safe, comfortable, and interesting to the pedestrian. Properly

configured, they encourage walking and enable neighbors to know each other and protect their communities," (Duany 2000). The need is stressed for "forging bonds for community over the backyard fence or at the town hall…the feeling of neighborhood intimacy, a revival of interest in community on a smaller scale" (Duany and Zyberk 1992: pg 39). Additionally, others have stated that the CNU attempts to foster social interaction through pedestrian focused designs, increased amenities, parkland and community space (Talen 1999). The CNU suggests "a direct, structural relationship between social behavior and physical form...it posits that good design can have a measurable positive effect on sense of place and community" (Kelbaugh 1997: p 3).

Andres Duany one of the founders of the Congress of the New Urbanism contends that a small distance between houses, the mixing of house types, mixed uses, tightly clustered neighborhoods, front porches, sidewalks placed close to houses, narrow streets, and the provision of amenities (such as a variety of pedestrian routes, public spaces, and diverse community services) foster social interaction (Duany 2000). Additional claims state that a greater sense of community is fostered by the physical characteristics of neo-traditional development and facilitate residents' social interaction, getting to know one another, and feelings of belonging to a community (Langdon 1994).

Despite the references linking physical design to social interaction in the Charter, the text is limited to descriptive phrases and does not describe specific, social principles of community. There are instances in which notions of community and social interaction are used as descriptive material to support a given principle as seen in the

previous statements by Andres Duany. The Charter of the New Urbanism does not specifically state but rather seems to imply that friendly, sociable neighborhoods can be physically designed (Talen 2002).

2.6 Community: Social Component & Social Interaction

The promotion of social and civic bonds, found within the Charter of the New Urbanism, is mostly concerned with trying to foster or enable social interaction (Talen 2002). Social interaction is seen as the bridge or genesis of building "sense of community." As Zaff and Devlin (1998) state, "without these neighbor interactions a sense of community cannot exist." Doolittle and MacDonald (1978) also specify informal interactions as one of six factors associated with building a sense of community.

In addition to the link of social interaction to "sense of community," empirical research has demonstrated that physical factors can affect aspects of social interaction. Haggery's (2000) research of urban neighborhoods reveals that the environment can influence social interaction. The study investigates the extensiveness of neighboring as well as participation in and attachment to neighborhood. As the intensity of social contact increases, the relative importance of environmental differences diminishes, while socio-demographic characteristics of residents become more important. The results of his study conclude that the more casual the relationships among neighbors the greater the effects of the neighborhood environment. While the more personal the social relationships are, the more socio-demographic factors play a role in the relationship. His studies went on to show that casual forms of social interaction, like

waving and chatting are greater in dense areas than in sparse areas and that the environmental effects were evident for all socio-demographic groups studied. An extensive study of neighborhoods in Pittsburgh (Ahlbrandt 1984) showed that the use of neighborhood facilities (for shopping, worship, or recreation) was linked to higher levels of residential interaction.

A conference in October of 2000 at the University of California, Berkeley asked the question "Does Neighborhood Landscape Matter?" The conference discussed issues that were relevant to building community within neighborhoods through the use of landscape design. The first topic was neighborhood landscape democracy. Discussions advanced two premises. The first dealt with the concept that the landscape acts as a catalyst for increased neighborhood influence on the democratic process. Neighbors can work together to improve the local landscape. As a result of that social interaction, additional concerns can be voiced as a group, such as problems with schools, traffic, or other public affairs.

The second premise advanced the concept that neighborhood form is associated with the level of interaction among residents and, in turn, increases the likelihood of civic engagement among residents, thereby, strengthening communities. The benefits of shared space within neighborhoods are emphasized providing opportunities for neighbors to interact and build relationships, which in turn, develop strong communities (Greenbaum 1982). The CNU principles follow this line of thinking, attempting to foster social interaction through pedestrian focused designs with increased amenities, parkland, and community space (Talen 1999).

Frances Kuo (1998) from the University of Illinois in Champaign-Urbana noted that the progressive disappearance of these shared spaces within neighborhoods is a significant loss for the neighborhood and especially for children. Kuo (1998) advocates neighborhood landscapes that incorporate a variety of objects, plant forms, and spaces for children to explore, arguing that it fosters healthier patterns of childhood development such as more social play, more creative play, and an enhanced capacity to pay attention. Kuo (1998) suggests that the disappearance of shared neighborhood space containing these features, produces negative effects on generation after generation of children.

Additional research by Zaff and Devlin (1998) found that elderly residents of garden apartments had a significantly greater overall sense of community than those elderly living in high-rise apartments. In an earlier study with block residents in Nashville, Chavis and Wandersman (1990) found a high sense of community among residents resulted in neighborhood satisfaction. Studies by Glynn (1981) have shown that satisfaction with the neighborhood is one of the strongest predictors of sense of community.

Studies by Kuo and Sullivan on inner city neighborhoods suggest that the presence of shared green neighborhood open space attracts people outdoors, increasing interaction and social ties. Other observations noted that higher levels of green space increased informal surveillance by residents thus escalating the sense of safety and resulting in lower levels of crime and incivilities. One increasingly popular type of shared green space has been the community garden (Kuo, Sullivan, Coley, and Brunson

1998). The studies of community gardens by Anne Whiston Spirn of MIT revealed that these gardens become places where individuals not only gardened but participated in life processes. These life processes include sharing and trading, meeting and playing, making and building, dreaming and worship. They are scenes of cooperation and conflict. The mutual ownership of the gardens helps to overcome stereotype of class and ethnicity, and create a sense of connection within the neighborhood (Sullivan 2000).

The studies above have shown the benefits of interaction among neighbors resulting in strengthened communities. The CNU believes the decline of these benefits is a result of urban sprawl (Talen 2002). The Charter of the New Urbanism makes reference to the "loss of community" in the context of people needing to spend an inordinate amount of time in their cars due to misguided urban design practices. The principles of the CNU enable neighbors to know each other through an increase in social interactions accomplished through physical design and increased density.

2.7 Neighborhood Satisfaction

The study of the origin of neighborhood satisfaction has produced results that point toward the physical environment of neighborhoods. Studies from Marans and Rodgers, and Herting and Guest have shown that neighborhood satisfaction relates strongest to the upkeep of resident housing and to the actual neighbors themselves. Additionally, the studies completed by John and Clark found safety and security to be the highest contributing factor to satisfaction. This included aspects of physical safety,

neighborhood aesthetics, and relationships with neighbors (St. John, Austin, and Baba 1986).

Additional studies have shown that there is an imperfect match between physical characteristics of neighborhoods and residents' perceptions of neighborhood quality of life. Individual evaluation is subjective because each person belongs to social groups and these groups differ in their culture, experiences, and expectations. People judge objective characteristics according to what they perceive they deserve, expect, or may reasonably aspire to (St. John 1987; St. John & Bates 1990; St. John and Cosby 1995). For example, the same built environment is evaluated differently according to race, age, and stage in the life cycle. Negative subjective perception of the environment is positively correlated with individuals' thoughts of moving out of a neighborhood and other residential mobility behavior (Lee, Oropesa, and Kanan 1994).

Mesch and Manor (1998) reviewed many studies that have examined the components of residential satisfaction. The conclusion drawn from these studies is that residential satisfaction is a multidimensional concept. It encompasses a vast array of perceived quality attributes including physical, social, economic, political, and cultural characteristics. Satisfaction with the types of people in a neighborhood (social environment) and with the conditions of the physical dimensions of the environment were the specific attributes most strongly related to overall satisfaction with the local neighborhood (Fried 1982; Herting and Guest 1983).

A positive perception of the open space, built environment, and people living in the neighborhood are central components in the evaluation of the neighborhood and are

found to be related to feelings of neighborhood attachment (St. John et al. 1986; Ward, La Gory, and Sherman 1986).

2.8 Principles of a Neighborhood Design for Social Interaction

Lennard (1987) encapsulated theory on the design of urban residential space that supported social life. His summary compiles a list of seven basic design principles from urban design theory brought together from over one hundred presentations at the *17th International Making Cities Livable Conference* in Freiburg, Germany, September 1995. Lennard's (1987) list includes the following principles:

1. safe and comfortable pedestrian networks
2. a central neighborhood square
3. human scale for urban spaces
4. visual enclosures to foster a sense of belonging
5. natural elements to increase sensual enjoyment
6. intricate and personal areas adjacent to significant structures to contribute meaningful outdoor experiences
7. spatial definitions with appropriate seating locations and arrangements.

In a similar study Hester (1975) examined characteristics that were appropriate for social interaction within urban neighborhoods. The study resulted in a checklist of user needs for neighborhood design that was derived from a questionnaire of users rather than sociologists and designers. The concepts incorporate sociological findings and are readily transferable into design programs. Hester's checklist includes:

1. Physical spaces that are adapted to the desired activities of people, such as walking, sitting, or active play areas.
2. Appropriate activity settings such as a hierarchy of public outdoor spaces from large common gathering areas at public squares to the neighborhood centers defined by shared social activities, to the more intimate patio and porch layouts at individual building entries.
3. Relatedness through interaction with the natural environment.
4. Safety that allows individuals to enjoy the outdoor experience
5. Aesthetic appeal that adds interest and meaning
6. Convenience that meets the needs of a fast paced culture
7. Psychological comfort
8. Physical comfort
9. Symbolic ownership (Hester 1975).

The lists by Lennard (1987) and Hester (1975) are very similar. Both mention specifically the importance of safety, aesthetics, and interaction with nature.

Jan Gehl made observations of behavior in, and use of, outdoor spaces in the same manner as William H. Whyte (1980) to identify the underlying spatial-behavioral requirements of social interactions (Gehl 1987). His focus on the outdoor plazas and urban neighborhoods of Copenhagen demonstrated that well designed spaces, with ample opportunity for pedestrian activity, can contribute to greater social interaction. Gehl's research divided outdoor activities into three categories;

1. necessary (work, school, waiting for a bus)
2. optional (pursuit done only if there's a will to do it)
3. resultant (social activity dependent on presence of others).

Gehl (1987, 34-36) observed eight requirements, which promote social interaction and use of outdoor space. One of these requirements is good outdoor quality that invites people to stay. Gehl (1987) observed that improvements in the quality of outdoor spaces were followed by increased use, while deterioration in quality revealed a disproportionately severe negative effect on outdoor activities.

Observations of standing preferences revealed that edges are used first for standing and seating areas. The placement of seating areas affected where people sat. Seating with good views positioned along the main pathways is used more. Additionally, seating situated face to face, angled, or around a table increased social interaction.

The use of public space increased when outdoor space was in plain view of the surrounding area provided smooth transitional borders attained by short walking distances, low automobile speeds, single level edge buildings, and the absence of walls. Additionally, a destination place with something to do once there also attributed to the increased use of outdoor space (Gehl 1987, 64).

Safety also proved to be an important factor for pedestrian life. Slow vehicular traffic resulted in livelier cities, while the lack of protection from vehicular traffic affects both the scope and character of outdoor activities. Additionally, the erosion of street life is typically followed by increased crime.

Gehl's (1987, 139-144) observations of walking behavior revealed acceptable walking distances to be thirteen hundred to sixteen hundred feet. A critical factor in determining an acceptable distance in a given situation is not only the actual distance but also the experienced distance. Long routes broken up by networks with alternating street spaces and small squares encompassing different landscape elements such as pavement patterns, slight curves or landscape designs add visual interest and have a psychological effect of making distances seem shorter. These shorter distances are preferred over long unprotected straight routes. Additionally, people prefer more direct routes that include visual interest, especially when the destination is within sight. People avoid elevation change when given a choice tending toward horizontal traffic rather than vertical and prefer ramps to steps.

Gehl (1987, 186-187) also made observations with regard to the height of residential dwelling spaces as a key determinant in promoting the use of outdoor space. Easy access in and out of dwellings increased the amount of time spent outside, while the use of stairs and elevators, or the presence of middle corridors, reduced the number of outdoor visits. The presence of good resting areas at entrances also increased outdoor activity. Gehl (1987) observed that Buildings over five stories were observed to reduced the amount of interaction residents had with outdoor spaces.

Additional observations revealed that human activity is the greatest object of attention and interest. The integration of activities is shown to lead to lively outdoor spaces while the segregation of activities results in a monotonous environment. Gehl (1987, 31) also proposed that design principles that support outdoor stationary activities

at the residential level are applicable to a great number of other building arrangements and urban functions.

2.9 The Use of Neighborhood Space

The checklist of Hester (1984) and the principles of Lennard (1987) both suggest elements that make neighborhoods more conducive to social interaction, however the design of neighborhoods cannot be reduced to a simple formula or completion of a simple checklist. A study in 1983 by the Committee on Housing Research and Development at the University of Illinois at Urbana supports this idea. The study found that designs implemented for neighborhoods are not always being used as intended. The research also revealed failures on the parts of designers to work with communities in meeting the needs of the neighborhood (Hester 1984).

Additional studies on the use of neighborhood space have confirmed the difficulty of predicting the specific use of neighborhood space. A study conducted by Sanoff and Dickerson (1984) in a southern city observed a high level of activity in streets and sidewalks rather than in the open green space designated for recreation, festivals, concerts, sports, etc. The study divided activities into two types, group and individual. The group activities took place in cul-de-sacs and the individual activities occurred on the streets and sidewalks. The central playground, which was designated for activity represented less than three percent of all activity observed (Sanoff and Dickerson 1984).

Studies by the Department of Planning in Baltimore, Maryland indicated that the space around the home tended to be used more than spaces that did not maintain visual

access from homes (DHUD Baltimore 1972). This suggests the importance of open space that maintains a visual line of site to homes. A study by Bangs and Mahler (1970) confirmed the Department of Planning's report observing that the majority of people do not use open green space if it is located further than four hundred feet away from a residence. This study also revealed that the presence of good pedestrian and visual access increased activity. As an open space exceeded the distance of four hundred feet drop-off activity increased.

These studies build on the studies of Sanoff and Dickerson (1884) and offer insights into the use of neighborhood space by residents. Gehl (1987) sought to determine physical conditions that promote outdoor activity in designated areas. The resulting observations were compiled into what makes places good for walking, standing, sitting, seeing, hearing, and talking.

2.10 Summary

The literature review reveals correlations in design principles of the Congress of the New Urbanism with previous neighborhood research. The work of Lennard (1987) and Hester (1984) on design characteristics show numerous similarities with the neighborhood and street principles laid out by the CNU. The commonalities include a hierarchy of spaces from large to small areas, priority on safety, comfortable pedestrian networks, natural elements, visual interest, and a central public outdoor space (for example a central square). Additionally, there is a consensus with regards to enclosure and boundaries creating a sense of belonging and contributing to a perception of safety, in turn, increasing the likelihood of a space being used.

Hierarchy of space is mentioned by Hester (1984) citing appropriate activity settings such as an order of public outdoor spaces from large common gathering areas at public squares to the neighborhood centers defined by shared social activities, to the more intimate patio and porch layouts at individual building entries. The principles of the CNU are ordered in three distinct scales region, neighborhood, and block all of which fit together to form the whole of a community or region.

Previous research points out the importance of pedestrian networks. The Congress of New Urbanism stresses communal rooms as part of the network environment allowing for rooms along streets that human activity can take place in which Gehl (1987) cites as the greatest object of attention and interest. The CNU principles makes room for what Ray Oldenburg has coined "third places"—places other than home (the first place) or work (the second place) that provide an informal gathering spot in which boundaries such as professional disciplines, social standing, or corporate rank are not recognized, and informal networking and chance conversations among patrons can lead to exchanges of ideas (Oldenburg, 1999). The most animated and lively public streetscapes and plazas observed are inextricably tied to "third places", such as coffee shops, pubs, internet cafes, bookstores, ice cream stands, sidewalk cafes and beer gardens (Richards 2005.) The CNU allows for these third places to flow out into the streets as seen by the Paley Park example.

Hester (1984) and Gehl (1987) emphasize the importance of convenience and the integration of activities. This is not stated in the CNU, but is implied through the mixed-use environments that stress pedestrian options. Bangs and Mahler (1970) as

well as Gehl (1987) take the convenience factor a step further by stating specific pedestrian distances. They also stress the importance of maintaining visual access of shared spaces to the home in order to increase usage of outdoor spaces.

Hester (1984) expresses a need for symbolic ownership that is echoed by research complied by Sullivan and Kuo (1998) the CNU stresses the need for public participation in the design process the accomplishes a sense of ownership. The existence of neighborhood associations formed initially to address issues of landscape in neighborhoods, are shown to result in the formation of stronger relationships among residents. Additionally, Kuo (1989) stresses the need for shared space that encompasses a variety of uses that children can explore, thereby helping in their development. The CNU discusses the presence of shared space, but not to the extent of providing community gardens which work to build a sense of ownership increasing safety and even helping to reduce or overcome ethnic stereotypes as researched by Sullivan (2000). This research is of particular interest since part of the CNU movement is a push toward higher population densities with increased ethnic diversities.

Among the literature reviewed, there is an apparent consensus in regards to aesthetics, with the CNU emphasizing style. Hester (1984) and Lennard (1987) both list aesthetics as a necessary principle for neighborhood design. Gehl's (1987) research revealing the increased use of outdoor space when quality is improved, lends support this principle. However, both Hester (1984) and Lennard (1987) place more emphasis on aesthetics, as they relates to natural elements while new urbanism focuses more on

consistency through architectural styles in buildings and the landscape looking to form an overall continuity.

CHAPTER 3

RESEARCH METHODS

3.1 Introduction

The major goals of this chapter are to present the physical characteristics of the research sites and explain how the study was conducted. The study entails a survey of a new urbanism neighborhood and a single use residential neighborhood. The research design works to answer the two questions posed. Are outdoor areas used more in a new urbanism neighborhood or a single use residential neighborhood, and does a new urbanism neighborhood have more social interaction than a single use residential neighborhood. The relationship these questions seek to establish is that good neighborhood design increases the outdoor use and social interaction within a neighborhood. This is the general hypothesis that guided the research design. Good neighborhood design is based on the design characteristics discussed in the literature review with the correlation of new urbanism and previous research. The assumption made is that new urbanism represents good design.

Various research designs differ in the quality of evidence they provide for a cause-and-effect relationship between variables. Scholarly works comparing the amount of use and social interaction between new urbanism and single use residential neighborhoods are scarce and thus played a part in the research design. With no significant research data to work from a cross-sectional behavioral study was selected.

In cross-sectional studies variables of interest in a sample are examined once and the relationships between them are determined (Hopkins 2000). The cross-sectional study consists of a comparative study of the two neighborhood data sets collected by means of a neighborhood survey. The research works to clarify the patterns of relationship between each neighborhoods design and the amount of use and social interaction occurring. The research also examines the relationship between the resident's perception of the neighborhood design features in regard to use and social interaction. This is in response to Gehl's (1987) observations that a favorable perception of outdoor space increases use. The intent focuses on determining the presence of any relationship between the amount of use and social interaction within neighborhoods to resident's perceptions of neighborhood features.

3.2 Site Characteristics

Downtown Naperville Neighborhood

The downtown Naperville neighborhood was selected because it represents many of the design principles outlined by the CNU and previous neighborhood research. The neighborhood encompasses an open space area around municipal office buildings and a library situated along a river walk park as shown in Figure 3.1 Municipal around Open Space. The park contains linear trails linking it with natural open space and various recreation areas. Additionally, the Naperville neighborhood encompasses mixed-use areas consisting of buildings with retail, office, and residential space situated on a grid layout with small blocks creating good pedestrian walks. Residential buildings range from single family housing units of the traditional neighborhood style to row-houses,

apartments over retail, and low rise apartments ranging from two to six stories. Additionally Naperville provides numerous significant structures providing meaning and significance to the community.

Figure 3.1 Municipal around Open Space

The downtown Naperville neighborhood has distinct boundaries enclosed by a commuter rail track on the north, high traffic boulevards, Washington Street, to the east and, Ogden Road, to the south. The DuPage River borders the west edge turning to the east and running along the south side of the neighborhood. The river walk allows for a small area south of the river to be included in the neighborhood which extends to Ogden Road. This area consists of municipal offices and low rise apartments, both of which are located adjacent to the river walk park and maintain pedestrian access to the rest of the neighborhood through four pedestrian and two automobile bridges. The areas along

the river, as well as a central mixed-use area just north of the municipal offices, make up the central open space area. Building heights range from one story to six, creating a good pedestrian scale.

The neighborhood provides adequate pedestrian networks setup on a small grid system. Sidewalks outside of businesses and retail areas are ten feet wide and allow for good circulation as well as seating and standing areas for pedestrians to gather as shown in Figure 3.1 Street Walks with Seating. Seating is typically arranged with good views of surroundings and protection at the back. When more than one seating area is provided the benches are angled toward each other to facilitate interaction. Routes are direct following the grid pattern of the streets. The linear park along the river provides a more meandering and scenic walk as displayed in Figure 3.2 Pedestrian Trails and Aesthetics.

Figure 3.2 Pedestrian Trials and Aesthetics

In addition to the linear parks many different outdoor recreation activities are provided for as seen in Figure 3.3 Recreation Areas. A large swimming area created from an old quarry with a large beach area. Large open fields are available for sports as well as an outdoor amphitheater used for small concerts and festivals. A skate park meets the needs of the youth providing a great outlet for kids. In the summer a paddle-boats are also available for recreation in the small pond situated next to the municipal buildings off the downtown area. The only level changes present are located at the river

Figure 3.3 Recreation Areas

walk and consist of a lower level walk closer to the water. The size and distance of the neighborhood from east to west is about twenty three hundred feet from the center of the neighborhood to the edges and sixteen hundred feet north to south from the center to the edge.

Natural elements are provided through the river walk as in Figure 3.4 Aesthetics, Nature, and Structure, and along the streets, with planters and trees as in Figure 3.4 Street Planters. The landscaping, in conjunction with buildings, enhances the aesthetic appeal making the neighborhood pleasant to view. There is design continuity in the buildings and landscape that helps to create a consistent feel throughout the neighborhood. The neighborhood's mixed-use area adds convenience allowing for

Figure 3.4 Mixed Use

business, shopping, and recreation located within walking distance from a residence are shown in Figure 3.4 Mixed Use. The site also includes a commuter rail station located on the northeast boundary of the neighborhood providing convenient access to downtown Chicago. Symbolic ownership of parks and the neighborhood area is

accomplished through a donation program. Personalized bricks are purchased by residents and merchants to help fund additional neighborhood work.

Single family house still make up the majority of the housing provided but other options are available and more of these options are in the process of being built. The various housing types can be seen in Figure 3.5 Housing Types. The mixed use housing consists of apartments and condominiums located over retain in the downtown mixed use area as well as a six story condominium building situated along the river walk park.

Figure 3.5 Housing Types

The significant structures located within the neighborhood include items such as a large bell tower that chimes out the hours of the day. Artistic sculptures located throughout the neighborhood both big and small such as a young boy skateboarding. Additionally, there is an engraved map of the Naperville area on the sidewalk outside of

the library and a war memorial along the river walk outside the municipal buildings both adding to the history and heritage of the community. Figure 3.6 Significant Structures gives a visual representation of the previously mentioned items.

Figure 3.6 Significant Structures

The tabulated results reveal that the downtown Naperville neighborhood possesses all but four of the design characteristics described in the CNU and previous neighborhood research. The location of the main open space located around the municipal buildings is at the southern edge of the neighborhood and not at the center as specified by both the CNU and Hester and Lennard's research specify. The unbalanced open space reduces the number of residences that can be situated so as to be within sight of the open space. Other items included the presence of low rise apartments containing internal resident entries which according to Gehl's research reduces the frequency of

outdoor use. Additionally, level changes along the river walk are seen as inhibitors according to Gehl's studies.

Brighton Lakes Neighborhood

This study compares the downtown Naperville neighborhood with Brighton Lakes, a conventional suburban neighborhood a few miles away. Like many conventional suburban developments, Brighton Lakes, photographically depicted in Figure 3.7 Brighton Lakes, is characterized by a plan with wide, curvilinear streets and numerous cul-de-sacs. The boundaries of the neighborhood are not distinct; the neighborhood seamlessly blends in with adjacent neighborhoods. The houses are on larger lots than in Naperville and most are similar in style and type. Brighton Lakes includes no natural open space or local retail facilities, such as shops and restaurants; although it has a clubhouse and pool facilities with a park and picturesque water features. Blocks are long while houses are set back further from sidewalks.

Figure 3.7 Brighton Lakes

3.3 Survey Instrument

The survey was designed to asses the amount of use and social interaction occurring at each site as well as the role of physical characteristics. The questions were modeled after Kim's (2001) survey on sense of community in neo-traditional neighborhoods. To permit comparison between the two neighborhoods the same attributes were included in all surveys. The survey modeled after Kim (2001) included structured questions about the frequency of participating in specific activities within the neighborhood (e.g. walking, running, bicycling, visiting a park, shopping, eating outside, sitting outside as well as one open ended question to account for activities not listed) to account for the amount of outdoor activity. These were phrased in terms of hours spent ranging from "No Hours" to "10+ Hours."

The measure of socializing was also taken from Kim's (2001) survey model to determine the amount of social interaction within the two neighborhoods. The questions addressed how often neighbors meet each week which is measured with a 10-point scale with one being "not often" and ten being "very often." Additionally, questions on social interaction dealt with where do residents interact with neighbors the most in the neighborhood and are there planned neighborhood activities where within the neighborhood, measured with a yes or no, as well as space to fill in the type of activities that are planned.

The last section records resident's perceptions of the neighborhood design features as they relate to good design. The design features taken from the literature review include quality, attractiveness, maintenance, safety, appearance of buildings,

parks, walks, seating, landscaping, and convenience. These were phrased in terms of satisfaction and were rated on a scale from one to ten with one being 'Not Satisfied' and ten being 'Very Satisfied.' The major purpose of the survey were to provide a means to compare the two neighborhood types in terms the amount of outdoor use, the degree of social interaction occurring, and the perception of physical characteristics.

CHAPTER 4

RESEARCH RESULTS AND ANALYSIS

4.1 Introduction

The comparison of the two neighborhoods, downtown Naperville and Brighton Lakes, begins with an examination and analysis of the participants' responses to the questions related to the frequency of outdoor activities within the neighborhood or amount of neighborhood use (e.g. walking, running, bicycling, visiting a park, shopping, eating outside, sitting outside as well as one open ended question to account for activities not listed). The analysis proceeds on to questions related to social interaction. The first of these is a question about how often neighbors meet in the neighborhood each week. The second question inquired about the presence of planned neighborhood activities that included an open-ended section to describe the types of planned activities. The third question asked where residents interact with neighbors the most in the neighborhood. The final section addresses the perception of neighborhood characteristics (e.g., attractiveness, maintenance, safety, appearance of buildings, parks, walks, seating, landscaping, and convenience) and compares results with neighborhood use and social interaction at each site.

4.2 Amount of Neighborhood Use

The amount of neighborhood use is covered by seven activities: walking, running, biking, visiting a park, shopping, eating, sitting outside, and an 'other' category for any activity not listed. Table 4.1 Average Neighborhood Use provides a comparison of the responses by the residents from Naperville and Brighton Lakes on the amount of time spent in the neighborhood. Residents from the new urbanism

Table 4.1 Average Neighborhood Use

	Walking	Running	Biking	Visit Park	Shopping	Eating	Sitting	Other
Naperville Avg. Hrs/ Week	4.00	0.74	0.74	2.68	3.46	2.24	3.12	1.17
Brighton Lakes Avg. Hrs./Week	2.00	0.37	1.29	1.29	0.00	2.34	4.06	2.29

neighborhood in Naperville rated higher use in four of the eight activities while the Brighton Lakes neighborhood rated higher use in the remaining four activities. Initial results give the impression that the amount of neighborhood activity is about the same with each neighborhood claiming the highest rating on four of the eight activities. A closer look reveals that the four activities rated highest in the new urbanism neighborhood of Naperville (walking, running, visiting a park, and shopping) all recorded at least twice as much time as in Brighton Lakes. While of the four activities that rated highest in use at Brighton Lakes (biking, eating, sitting outside, and the 'other' category) none of the activities rated significantly higher than the Naperville neighborhood. The amount of time eating outside varied by a tenth of an hour each week and the amount of time sitting differed by just under an hour each week. Although the data reveals less time in these areas for Naperville it does not reveal a lack

of these activities. Rather the amount of time sitting in the Naperville neighborhood is higher than all other activities in Brighton Lakes. The total number of hours spent outside each week for each neighborhood revealed that on average the Naperville neighborhood residents spent 18.25 hours outside each week while the Brighton Lakes residents spent 13.64 hours outside each week. The results show that the residents of the new urbanism Naperville neighborhood spend on average 35% more time outside than residents in Brighton Lakes.

Pedestrian activity accounted for a largest amount of time spent in the neighborhood for Naperville residents. The amount of time residents spent walking and running was double that of Brighton Lakes residents. The design differences are evident between the two neighborhoods with Naperville set up on a grid system of small blocks characteristic of new urbanism designs. The small blocks work to prevent long unbroken sections that are discouraged by Gehl (1987) in his research observations. The layout provides pedestrians with many different options to get from one place to another. Additionally, Naperville provides multiple destinations such as the downtown area with retail and restaurants, an elementary and grade school, children's museum, post office, library, linear park consisting of open green space, a swimming area, skate park, and natural elements along winding trials all within walking distance. In contrast Brighton Lakes has only one small park and the clubhouse pool as destination points that are located along long unbroken sidewalks providing little visual interest to make distances seem shorter (Gehl 1987). The results support the implications of increased use of new urbanism neighborhoods made by the Congress of New Urbanism (CNU).

4.3 Neighborhood and Social Interaction

Social interaction covered three questions dealing with how often neighbors interact, where they typically interact, and the presence of planned neighborhood activities. The findings of the first question of how often neighbors interact was based on a scale from one to ten with one being 'Not Often' and ten being 'Very Often.' The results showed that residents of the Naperville neighborhood interacted more, with an average response of 5.95, than residents of the Brighton Lakes neighborhood with an average response of 4.77.

The second question addresses where residents interact the most within their neighborhood. In the Naperville neighborhood forty-four percent responded that interaction with neighbors most frequently occurred while walking. The two other most frequent places to interact occurred in the yard/porch, with a response of thirty-six percent, and downtown, with a twenty percent response. Results for the Brighton Lakes neighborhood revealed sixty-four percent interacted with others most frequently in the yard while thirty-six percent interacted with others more frequently at the neighborhood clubhouse. The results reveal that residents of the new urbanism neighborhood of Naperville are much more likely to interact with others out in the neighborhood showing that more public space resulted in public space interaction. In contrast the data from Brighton Lakes suggests the most common form of interaction appears to occur between next-door neighbors with interactions taking place most frequently in the yard revealing that more private space resulted in more private interaction.

The final question focuses on the presence and types of planned neighborhood activities. The question asked residents if there were planned neighborhood events and if so what types. The Brighton Lakes neighborhood responded with a higher awareness of planned neighborhood events with positive response of eighty-eight percent. The typical event occurring in Brighton Lakes are parties or socials at the neighborhood clubhouse. The Naperville residents respond with sixty-six percent aware of planned neighborhood activities. Typical events occurring within the Naperville neighborhood were associated with village events such as concerts, festivals, and fairs. The events differ between the two neighborhoods with Brighton Lake's events catering more exclusively to residents of the neighborhood while Naperville's events are open for all to attend. Although residents of the Brighton Lakes neighborhood reveal a higher awareness of planned neighborhood events it does not translate into higher interaction or greater use in the neighborhood. These results are curious in the light of Gehl's (1987) observations that human activity is the greatest object of attention and interest. The presence of the mixed use area in Naperville may provide the human activity Gehl (1987) describes reducing the role of planned activities. The results reveal that residents of Naperville's new urbanism neighborhood are more inclined to use the neighborhood and interact more without planned neighborhood activities suggesting the design features of the neighborhood play an important role in interaction.

The results of social interaction correspond with the neighborhood use results. Naperville residents recorded higher levels of neighborhood use which has translated into higher levels of social interaction. More specifically, Naperville residents reported

a high amount of time spent walking which correlates with results showing that social interaction occurs most while walking in the neighborhood. These results are consistent with Gehl's (1987) and Lennards (1987) research which encourages designs with ample opportunity for pedestrian activity which can contribute to greater social interaction.

4.4 Perception of Neighborhood Design Features

The last section records the resident's perceptions of the neighborhood design features. The design features taken from the literature review include quality, attractiveness, maintenance, safety, appearance of buildings, parks, walks, seating, landscaping, and convenience as shown in Table 4.2 Neighborhood Perception. The residents of the Naperville neighborhood rated all twelve design feature items higher than residents from Brighton Lakes. A calculation of

Table 4.2 Neighborhood Perception

Neighborhood	Quality	Aesthetics	Maintenance	Ownership	Safety	Building Appearance
Naperville	8.99	8.92	9.00	8.76	8.82	8.53
Brighton Lakes	7.60	7.31	7.60	7.31	7.74	7.94
	Parks	**Ped. Walks**	**Seating**	**Landscape**	**Convenience**	**Overall**
Naperville	8.99	8.92	8.13	8.82	9.11	8.83
Brighton Lakes	6.03	7.2	4.54	6.2	6.86	7.00

the mean response of all design features reveals an overall rating of 8.83 for Naperville's new urbanism neighborhood compared to an overall rating of 7.00 for Brighton Lakes. The results do not indicate any dissatisfaction with the design features in the Brighton Lakes neighborhood that would characterize it as a bad place to live. However, the results are consistent with Gehl's (1987) observations that a favorable perception of outdoor space increases use. This is evident in comparing the parks of Brighton Lakes and Naperville. Both neighborhoods offer shared green space which according to Greenbaum (1982) and Kuo (1998) provides opportunities for neighbors to interact and build relationships that can lead to stronger communities. The amount of time residents at Brighton Lakes spend in the park rates among the bottom three in their neighborhood use study. Additionally, the perception of the park with Brighton Lake's residents is among the two lowest rated features. In comparison the amount of use of the Naperville park was among the top three activities in regards to time spent and was rated among the top three features in satisfaction. The park comparison is an example that shows neighborhoods cannot be reduced to a simple formula or the completion of a checklist of features and stresses the important role a designer plays in meeting the needs of residents (Hester 1984).

An interesting observation is made between the amount of time Brighton Lakes residents record for sitting in the neighborhood, 4.06 hours per week, and the rating of 4.54 for the seating within the neighborhood. A possible reason for the discrepancy might be residents spend a lot of time sitting outside in their own yards but are not necessarily satisfied with the public seating provided within the neighborhood.

CHAPTER 5

CONCLUSION

Garreau's outlook puts the implications of research into perspective.

"The point of cities in the 21st century is going to be face-to-face contact, which is vastly more satisfying than any technology I have seen talked about in my lifetime. The places that are good places because you get face to face contact are the ones that are going to thrive: Is this going to be a good place for us to be old? Will this ever be a good place for my kids to be young? Is this going to be a good place to be in love? Is this ever going to be a good place to have a Fourth of July parade?

"The competition [between development paradigms] is going to be about these quality of life issues. You are naturally going to gravitate to places that have identity, community, a sense of civilization, a sense of home. The intangibles of urbanity: that is what you have to build into these things" (Garreau 1991, 461).

These are the types of communities new urbanism strives to create, with principles designed to create neighborhoods that strengthen civic bonds and create safe and interesting environments that enable neighbors to know one another. As Garreau (1991) so poignantly points out, these are the types of places people value and even seek out, places where face-to-face contact provides a higher quality of life. As cities compete with one another for tax dollars, designers such as landscape architects, urban planners, and architects would seem to be the catalyst that leads to urban revitalization with design principles that promote social interaction.

Existing research in regards to neighborhood design that supports social interaction correlates well with the principles espoused by the Congress of New Urbanism providing credence to the claims of higher social interaction through

increased neighborhood use. The principles of the CNU are worth reviewing to emphasize their importance.

Region:

Diverse in use

Designed in a scale that is inviting

Designed with open space

Structured by public space

Diverse circulation system with a variety of options

Neighborhood District Corridor:

Designed with a center and edge

Optimum size of a quarter mile from center to edge

Balanced mix of activities

Priority of public space

Varied housing types

Designed for the pedestrian, mass transit and automobile

Block Street Building

Designed with a compact grid system

Streets as communal rooms

Mixed use of streets for pedestrians and autos

Comfortable pedestrian scale

Designed for safety

Designed with visual interest

Landscape and architecture flow from local climate

Building ground floors designed as extensions of public space

In addition to the correlation with existing research supporting social interaction, the cross sectional analysis between a new urbanism and single use residential neighborhood lends support for the existence of a relationship between CNU design principles and higher levels of social interaction through increased use. The analysis furthers the body of research from indirect literature review to direct analysis. Results reveal residents of the new urbanism neighborhood were outside 35% more and interacted with others 25% more than residents of a single use residential neighborhood. In addition to the positive response of use and interaction, resident's perception of the new urbanism neighborhood was 26% higher than residents of the single use residential neighborhood which, according to Gehl, (1987) increases outdoor use.

Many design professionals play a role in shaping communities and neighborhoods. Landscape architects accept certain responsibilities related to the health, safety, and welfare of the public. In an environment of increasing health issues related to diabetes and obesity neighborhood design principles aimed at increasing activity will increase the welfare of the end users. So often the focus is on what is wanted by the client when little attention is given to what is needed by the residents. In the case of neighborhood design, the two issues can be addressed with good design that focuses on public use.

5.1 Limitations of the Study

The cross sectional research method provides good evidence for the presence or absence of a relationship. However, a stronger relationship could be established with an analysis of multiple new urbanism and single use residential neighborhoods. Limitations of time and resources prevented such a study in this case.

5.2 Implications for Further Study

Implications for further study are numerous. Studies of the same design conducted on different new urbanism and single use residential neighborhoods would help validate the findings of this study. Comparison of New Urbanism projects on use and interaction would also reveal strengths and weaknesses of different projects in regard to use and social interaction. Studies of CNU principles to determine the relative importance of each design feature in regard to stimulating use and interaction would help designers prioritize and spread resources accordingly in a design process frequently limited by time and monetary constraints. Observational studies of specific design features on an individual basis could also yield profitable results for neighborhood design.

An additional study focused primarily on children and young adults looking for different uses and interaction patterns within a new urbanism and single use residential neighborhood could also be done. Results could produce data to aid in neighborhood design that provides children with a better place to grow up in. These studies would progress the observational studies of Kuo and Sullivan to practical design principles of neighborhoods for children.

The implications of use and social interaction as related to the amount of public and private space available within neighborhoods are not fully understood. Further studies looking at private facilities as Brighton Lakes Clubhouse and Pool add a twist to the typical single use residential neighborhood. It would be interesting to compare a New Urbanism neighborhood to a truly single use residential neighborhood without any clubhouse and pool amenities. Additionally, that raises other questions such as, are single use residential neighborhoods that provide country club like amenities to residents more comparable to New Urbanism neighborhoods in regard use and social interaction.

APPENDIX A

NEIGHBORHOOD SURVEY

Neighborhood Design Research Project

Dear Research Participant:

I am a graduate student working on my MA in Landscape Architecture at The University of Texas at Arlington. As part of my course work I am required to complete a thesis project furthering the study of landscape architecture.

The enclosed questionnaire seeks information pertaining to your perceptions of the neighborhood in which you live as well as the amount of time you spend in it. Your participation in completing this questionnaire would be greatly appreciated and would provide a worthwhile source of information regarding the ways in which neighborhood design works to encourage social interaction.

Please follow instructions on the survey and return it in the self-addressed envelope enclosed.

If you have any questions in regard to the research being done or would like a copy of the results of this study you may contact me through the contact information listed below. If you have any questions or concerns you may contact the supervising professor of this research project, David Hopman, Assistant Professor of Landscape Architecture.

Principle Investigator:	David Bartz Graduate Student Landscape Architecture The University of Texas at Arlington bartzdavid@yahoo.com 817-703-3531
Supervising Professor:	David Hopman ASLA Assistant Prof. of Landscape Architecture The University of Texas at Arlington dhopman@uta.edu (817) 272-7277

Participation in this study is completely voluntary. Your anonymity is ensured.
Thank you for your prompt response and willingness to participate in this study.

Sincerely,

David Bartz
Graduate Student

Neighborhood Survey

Neighborhood Environment

Please circle one number on the following scales.

1. What is your perception of the physical quality of the area in which you live?

   Low Quality 1 2 3 4 5 6 7 8 9 10 *High Quality*

2. How much of your neighborhood is covered by trees, shrubs, grass / groundcovers (but not structures, pavement, or bare ground)?

   None 1 2 3 4 5 6 7 8 9 10 All

3. How attractive is your neighborhood?

   Not Attractive 1 2 3 4 5 6 7 8 9 10 Very Attractive

4. How well maintained is your neighborhood?

   Not Maintained 1 2 3 4 5 6 7 8 9 10 Very Well Maintained

5. How often do you meet neighbors in your neighborhood each week?

   Not Often 1 2 3 4 5 6 7 8 9 10 Very Often

6. Where do you interact with neighbors the most in your neighborhood?

   _____

7. Is there a public outdoor space within site from your residence? Y / N

8. Are there planned neighborhood activities where you live? Y / N

   If so what? _____

Neighborhood Satisfaction

Please circle one number on the following scales.

9. How good is your neighborhood as a place to live?

Very Bad 1 2 3 4 5 6 7 8 9 10 *Excellent*

10. How proud are you of your neighborhood?

Not Proud 1 2 3 4 5 6 7 8 9 10 *Very Proud*

11. Do you feel a strong sense of ownership toward your neighborhood?

Not Strong 1 2 3 4 5 6 7 8 9 10 Very Strong

12. How satisfied are you with each item in your neighborhood?

a. Safety in your neighborhood?

Not Satisfied 1 2 3 4 5 6 7 8 9 10 Very Satisfied

b. Cleanliness in your neighborhood?

Not Satisfied 1 2 3 4 5 6 7 8 9 10 *Very* Satisfied

c. Appearance of buildings in your neighborhood?

Not Satisfied 1 2 3 4 5 6 7 8 9 10 *Very* Satisfied

d. Parks in your neighborhood?

Not Satisfied 1 2 3 4 5 6 7 8 9 10 *Very* Satisfied

e. Pedestrian walks in your neighborhood?

Not Satisfied 1 2 3 4 5 6 7 8 9 10 *Very* Satisfied

f. The amount and quality of outdoor seating in your neighborhood?

Not Satisfied 1 2 3 4 5 6 7 8 9 10 *Very* Satisfied

g. Landscaping in your neighborhood?

Not Satisfied 1 2 3 4 5 6 7 8 9 10 *Very* Satisfied

h. Pedestrian convenience in your neighborhood?

Not Satisfied 1 2 3 4 5 6 7 8 9 10 *Very* Satisfied

13. Overall, how satisfied are you with your neighborhood?

Not Satisfied 1 2 3 4 5 6 7 8 9 10 *Very Satisfied*

Outdoor Activities
We would like to know about your involvement in some outdoor activities.

14. How many parks do you have in your neighborhood? _____

15. How many **hours** do you spend doing the following outdoor activities in your neighborhood **each week**? Please circle one number on the following scales.

a. Walking in your neighborhood each week?

No Hours 1 2 3 4 5 6 7 8 9 10+ *Hours*

b. Running / jogging in your neighborhood each week?

No Hours 1 2 3 4 5 6 7 8 9 10+ *Hours*

c. Bicycle riding in your neighborhood each week?

No Hours 1 2 3 4 5 6 7 8 9 10+ *Hours*

d. Visiting a park in your neighborhood each week?

No Hours 1 2 3 4 5 6 7 8 9 10+ *Hours*

e. Shopping in your neighborhood each week?

No Hours 1 2 3 4 5 6 7 8 9 10+ *Hours*

f. Eating outside in your neighborhood each week?

No Hours 1 2 3 4 5 6 7 8 9 10+ *Hours*

g. Sitting outside in your neighborhood each week?

No Hours 1 2 3 4 5 6 7 8 9 10+ *Hours*

h. Other outdoor activity in your neighborhood _____?

No Hours 1 2 3 4 5 6 7 8 9 10+ *Hours*

i. How much time do you spend outside in your neighborhood each week?

No Hours 1 2 3 4 5 6 7 8 9 10+ Hours

Background Information
This is a standard, but important part of the survey.

17. How long have you lived at your present home address? _____(yrs)

18. What floor level do you live on? 1 2 3 4 5 6 or higher _____

19. Do you own or rent your home? □ Own □ Rent □ Other

20. Please indicate your

a. Age: 18 to 29 30 to 39 40 to 49

50 to 59 60 to 69 70 and up

b. Gender : female/male
c. Ethnicity: African American Caucasian Hispanic Asian
Other_____

21. Education level completed :

□ Less than High School
□ High School / GED
□ College / Technical School
□ Graduate Degree
□ Doctoral Degree

22. Total annual income before taxes:

□ Less than $50,000
□ $50,001 – $80,000
□ $80,001 – $110,000
□ $110,001 – $130,000
□ $130,001 or Greater

REFERENCES

Ahlbrandt, Roger S. Jr., "Neighborhoods, People, and Community." New York: Plenum. (1984).

Alexander, Christopher. A Pattern Language. New York: Oxford UniversityPress, 1977.

Alexander, Christopher. The Timeless Way of Building. Berkeley: Christopher Alexander, 1979.

Bangs, Herbert P., Jr. and Mahler, Stuart, "Ushers of Local Parks," AIP Journal 36:330-334 (1970).

Barnett, Jonathan, "Ten." In The Charter of the New Urbanism, edited by Leccese, M., and McCormick, K., pp71-72. New York, NY: McGrawhill, (2000).

Bressi, Todd, New Urbanists Sign Charter, March Into the Future. Planning 62 (7):24-25, (1996)

Bressi, Todd, "Planning the American Dream." In The New Urbanism: Toward an Architecture of Community, edited by Peter Katz, pp. xxv-alii. New York, NY: McGrawhill (1994).

Bookout, Lloyd W., "Neotraditional Town Planning: A New Vision for the Suburbs" Urban Land, January:20-26, (1992).

Calthorpe, Peter, "One." In The Charter of the New Urbanism, edited by Leccese, M., and McCormick, K., pp15-21. New York, NY: McGrawhill, (2000).

Calthorpe, Peter, "The Region." In The New Urbanism: Toward an Architecture of Community, edited by Peter Katz, pp. xi-xvi. New York, NY: McGrawhill (1994).

Chavis, D.M., & Wandersman, A. "Sense of community in urban environment: A catalyst for participation and community development." American Journal of Community Psychology. Vol. 18(1), 55-82. (1990).

Congress for the New Urbanism, Charter of the New Urbanism. McGraw-Hill Co.: New York, (2000).

Department of Planning and Department of Housing and Urban Development. "Baltimore Community Renewal Program Interim Report: A Progress Report on the First Year of a two year Program Study." Baltimore, MD, 149, (1972).

Doolittle, R.J., & MacDonald, D. “Communication and sense of community in a metropolitan neighborhood: A factor analytic examination.” Communication Quarterly. Vol. 26. 2-7. 1978.

Dover, Victor, “Twenty three.” In The Charter of the New Urbanism, edited by Leccese, M., and McCormick, K., pp147-151. New York, NY: McGrawhill, (2000).

Duany, Andres, “The Transect,” Journal of Urban Design, Vol. 7, Issue 3, p251-261, (Oct. 2002).

Duany, Andres and Plater-Zybert, E., “The Second Coming of the American Small Town,” Wilson Quarterly, 16 (1), pp. 19-48, (1992).

Duany, Andres, and Plater-Zyberk, E. and Speck, J. “Suburban nation: The rise of sprawl and the decline of the American dream.” New York, NY: North Point Press, 2000.

Duany, Andres, and Plater-Zyberk, E., “The neighborhood, the district and the corridor.” In The New Urbanism: Toward an Architecture of Community, edited by Katz, P., pp. xvii-xx. New York, NY: McGrawhill, (1994).

Duany, Andres and Talen, Emily, “Transect Planning,” APA Journal, Vol. 68, No. 3, 245-266, (Summer 2002).

Duany, Andres and Talen, Emily, “Making The Good Easy: The Smart Code Alternative,” Fordham Urban Law Journal, Vol. 29, No. 4, 1445-1468, (2002).

Ellis, Cliff, “The New Urbanism: Critiques and Rebuttals,” Journal of Urban Design, Vol. 7, No. 3, 261-291, (2002).

Feldman, R., “Settlement-identity, psychological bonds with home places in a mobile society,” Environment and Behavior, 22(2), 183-229 (1990).

Festinger, L., Schacter, S. M., & Back, K. “Social pressures in informal groups.” Palo Alto, CA: Sanford University Press, (1950).

Fischer, C.S., Jackson, R.M., Gerson, C.A. Steve, K., Jones, L.M., Baldassare, M., “Networks and Places,” (New York: The Free Press, (1977).

Florida, Richard. The Rise of the Creative Class. New York: Basic Books, 2002.

Garreau, Joel, Edge City: Life of the New Frontier, New York: Anchor Books Doubleday, (1991).

Gehl, J., Life Between the Buildings, New York: Van Nostrand-Reinhold, (1987).

Global Strategic Real Estate Research Group, Greyfield Regional Mall Study, www.cnu.org/cnu_reports/Greyfield_Feb_01.pdf, (January 2001).

Glynn, T.J., "Psychological Sense of Community: Measurement and Application," Human Relations, Vol. 34, 780-818 (1981).

Greenbaum, S.D., "Bridging Ties at the Neighborhood Level," Social Networks 4:367-384 (1982).

Grimshaw, Jacky, "Four." In The Charter of the New Urbanism, edited by Leccese, M., and McCormick, K., pp36. New York, NY: McGrawhill, (2000).

Guest, A. M., and Lee, B. A., "Sentiment and evaluation as Ecological variables," Sociological Perspectives, 26, 159-184, (1983).

Haggerty, Lee. "Differential social Contact in Urban Neighborhoods: Environmental vs. Sociodemographic Explanations," The Sociological Quarterly. Vol. 23. No. 3 (2000).

Hardwired to Connect: The New Scientific Case for Authoritative Communities (Press Release, 2003).

Herting, Jerald R., and Guest, Avery, "Components of Satisfaction with Local Areas in the Metropolis," The Sociological Quarterly 26:99-115, (1983).

Hester, Randolph T. Jr., Neighborhood Space, Pennsylvania: Hutchingson and Ross, (1975).

Hester, Randolph To., Jr., Planning Neighborhood Space with People, 2nd Edition, New York: Van Nostrand Reinhold Co., (1984).

Hopkins, Will G., "Quantitative Research Design." Sportsscience Vol. 4 No. 1 (2000).

Hunter, A., "The Persistence Change of Chicago's Local Communities." (Chicago: University of Chicago, Press, Phoenix edition, 1982)

Jacobs, Jane, The Life and Death of Great American Cities, New York: Random House, (1993).

John, Craig and Clark, Frieda, "Racial differences in dimensions of neighborhood satisfaction," Social Indicators Research 15(1):43 60, (1984).

Joongsub, Kim, "Sense of community in neotraditional and conventional suburban developments: A comparative case study of Kentlands and Orchard Village." (Maryland). University of Michigan, 2001.

Katz, Peter, The New Urbanism Toward an Architecture of Community*:* New York: McGraw-Hill Co., (1994).

Kelbaugh, Douglas, The Pedestrian Pocket Book: A New Suburban Design Strategy, Princeton, NJ: Princeton Architectural Press, (1989).

Kelbaugh, Douglas, "Three Paradigms: New Urbanism, Everyday Urbanism, Post Urbanism—An Excerpt From The Essential Common Place." Bulletin of Science, Technology & Society. Vol. 20. No. 4. 2000.

Khermouch, G. "Third places." Brandweek, 36, 36-38, March 13, 1995.

Kim, Joongsub, "Sense of Community in Neotraditional and Conventional Suburban Developments: A Comparative Case Study of Kentlands and Orchard Village." Joongsub Kim (2001).

Kuo, Frances E., and Sullivan, William C., and Coley, Rebekah Levine, and Brunson, Liesette, "Fertile Ground for Community: Inner-City Neighborhood Common Spaces," American Journal of Community Psychology, 6:823-851 (1998).

Langdon, P., "A Better Place to Live: Reshaping the American Suburb," New York: HarperCollins (1994).

Leccese, Michael and McCormick, Kathleen, "Preamble." In The Charter of the New Urbanism, pp.v. New York, NY: McGrawhill, (2000).

Lee, Barrett A., Oropesa, R.S., and Kanan, James W. "Neighborhood context and residential mobility," Demography Vol. 31 No. 2: pp 249-270, (1994).

Lehre, U., Milgrom, R., "New (sub)urbanism: counter sprawl or repackaging the product?" Capitalism, Nature, Socialism. Vol. 7 No. 2: pp 49-64, (1996).

Lennard, S.C.H., Livable Cities: People Places: social design principles for the future of the city, New York: Gondolier Press, (1987).

Los Angles Housing Development, "Building Healthy Communities 101." http://www.lacity.org/lahd (2005).

Manor, Orit and Mesch, Gustavo S., "Social ties, environmental perception, and local attachment," Environmental Behavior, Vol. 30 No. 4: pp 504-516, (1989).

Marans, R..W. and Rodgers, W., Toward an Understanding of Community Satisfaction, in: Janowitz, M. and Suttles, G. (Eds.) Metropolitan American in Contemporary Perspective. New York: Sage Publications (1975).

Meyer, Peter B. "The Opportunities in Urban Infill as a Means of Balancing Developmental Needs and Environmental Quality Preservation." Kentucky Institute for the Environment and Sustainable Development.

Oldenburg, R., The great good place. New York: Marlowe & Co., (1989).

Person, Hollie. “Local Accessibility, pedestrian travel and neighboring: Testing the claims of New Urbanism.” http://www.asu.edu/caed/proceedings01/PERSON/person.htm. 2001. (2005).

PolicyLink, “Infill Incentives,” http://www.policylink.org/EDTK/Infill/

Pollard, Oliver A., III, Smart Growth: *The Promise, Politics, and Potential Pitfalls of Emerging Growth Management Strategies,* 19 VA. ENVTL. L.J. 247, 257 (2000).

Polyzoides, Stefanos. “Twenty” In The Charter of the New Urbanism. pp 127, New York, NY: McGrawhill (2000).

Post, Nadine M. “Putting the Brakes on suburban sprawl.” Engineering News Record, Vol. 232, No. 19, pg. 32, (May 1994).

Richards, James P., “Places to Flourish: Placemaking that Nurtures Ideas, Creativity and Commerce,” James P. Richards (2005).

Smith, Tara, Nelischer, Maurice, Perkins, Nathan, “Quality of an urban community: a framework for understanding the relationship between quality and physical form,: Journal of Landscape and Urban Planning, 39:229-241, (1997).

Sanoff, Henry and Dickerson, John, “Mapping Children’s Behavior in a Residential Setting,” Journal of Architecture Design 25 (4):103 (1971).

Seymoar, Nola-Kate and Timmer, Vanessa, “The Livable City.” The World Urban Forum 2006, edited by Peter Oberlander University of British Columbia, pp. iv. British Columbia (2006)

Solomon, Daniel, “Block, Street, and Building.” In The Charter of the New Urbanism, edited by Leccese, M., and McCormick, K., pp121-126. New York, NY: McGrawhill, (2000).

St. John, Craig, and Austin, D. Mark, and Baba, Yoko, “The Question of community Attachment Revisited,” Sociology Spectrum, 6:411-431, (1986).

Steuteville, Robert. “New Urbanism Review,” New Urban News, (July, 2004).

Sullivan, William C., “Does Neighborhood Landscape Matter?,” Landscape Journal, Vol. 20 No. 2: pp 198, (2000).

Talen, Emily. “The Social Goals of New Urbanism,” Housing Policy Debate, Vol. 13, No. 1: 165-187, (2002).

Talen, Emily. “Sense of Community and Neighborhood Form: An Assessment of the Social Doctrine of New Urbanism,” Urban Studies, Vol. 36, No. 8: 1361-1379, (1999).

Transect Applied to Regional Plans, New Urban News, Vol. V, No. V, (September, 2000).

Von Eckard, Wolf, Back to the Drawing Board: Planning Livable Cities, New York, Republic Books, (1978).

Whyte, William H., The Social Life of Small Urban Spaces, Washington D.C., Conservations Foundation, (1980).

Woolever, Cynthia. "A Contextual Approach to Neighborhood Attachment" Urban Studies Vol. 29, No. 1:99-116, (1992).

Zaff, J., & Devlin, A.S. "Sense of community in housing for the elderly." Journal of Community Psychology. Vol. 26 (4), 381-398. 1998.

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