Comparative Analysis of Urban Design and Criminal Behavior: A Study of New Urbanism and Defensible Space as they Pertain to Crime

Afton Enger
Minnesota State University, Mankato

Follow this and additional works at: https://cornerstone.lib.mnsu.edu/jur

Part of the Criminology Commons, and the Urban Studies and Planning Commons

Comparative Analysis of Urban Design and Criminal Behavior: A Study of New Urbanism and Defensible Space as They Pertain to Crime

Afton Enger (Urban and Regional Studies)
Dr. Anthony Filipovitch, Faculty Mentor (Urban and Regional Studies)

Abstract

This research evaluates the correlation between urban design and criminal behavior. Environmental designs observed are New Urbanism, also known as Traditional Neighborhood Design (TND) and Neo-Traditional Neighborhood Design; and Defensible Space, otherwise known as Crime Prevention through Environmental Design (CPTED) or Secure by Design (SBD). This study analyzes and compares crime rates in Minnesota cities and neighborhoods which have characteristics of one of these urban designs or a 3rd, Vernacular Design. Similar research has been done in a 2004 thesis by Marie E. Hafey titled *New Urbanism Versus Defensible Space: Design Philosophies Related to Neighborhood Satisfaction and Perceived Crime*, which addressed the correlation between urban design and perceived crime. A recent Operation Scorpion web posting also claimed New Urbanism is crimogenic. There is little research to either support this argument or refute it. This research aims to find whether or not either of the two urban designs, Defensible Space or New Urbanism, is conducive to criminal behavior.

Introduction

This study analyzed two urban design characteristics, New Urbanism and Defensible Space. Data were collected on crime rates and design characteristics in Minnesota cities that have had rapid growth between 1990 and 2000. Crime rates and urban designs of each city were compared to find if crime had increased, decreased, or remained consistent in correlation to the rise in population. The cities were categorized as having characteristics appropriate to New Urbanism, Defensible Space, or a third design that is referred to as Vernacular Design. The Vernacular Design is a standard design typically seen that does not share characteristics of the aforementioned designs. The 3 possible research findings to be found were as follows: that New Urbanism has higher crime rates than Defensible Space, Defensible Space has higher crime rates than New Urbanist design, or that crime rates are similar with both New Urbanism and Defensible Space – higher, lower, or similar to that of the Vernacular Design. The significance of this research pertains to the rising use of New Urbanism as an urban design among city planners.

Overview of the Literature

There is little research that has been done on this topic in the past. Previous research on this topic includes: a dissertation by Ronal W. Serpas (1998), a thesis by Marie E. Hafey (2004), and a National Institute of Justice Report by Jeremy Travis and Richard Titus (1996). In the dissertation Serpas (1998) argued that Defensible Space is crimogenic (the design actually caused crime). Through a time series regression analysis at two apartment complexes in New Orleans, Louisiana he found that criminals could easily climb over fences, and that the fences hindered police patrol and response. The fences also inhibited police officers' ability to conduct routine checks of pedestrians. The fence was supposed to increase perceptions of safety and deter criminal behavior, but only provided more opportunities for illegal activity without detection. According to this study, Defensible Space focuses its aim at the physical environment and concerns itself with *offense* areas, which contrasts to sociological theories of crime which focus on *offender* areas.

Hafey (2004), however, used 1997 American Housing Survey nationally representative data and found that perceived crime is higher in areas with New Urbanism. Hafey claimed that perceived crime rose with increased density of nearby housing and proximity of commercial areas. She also argued that housing type and context impact residents' neighborhood satisfaction and perceived crime. Residents with large-lot single-family homes had the highest neighborhood satisfaction and lowest perceived crime rate. Single-family attached housing with nearby low-rise housing and commercial areas had much lower neighborhood satisfaction and much higher perceived crime. The third study came to the conclusion that the physical environment features alone do not have singular effects on crime (Taylor and Harrell, 1996). This 1996 National Institute of Justice Report stated that other features, such as social, cultural and organizational dynamics, also contribute to crime.

This current study expands such research because there are only limited studies that evaluate crime and New Urbanist design, and the study that evaluates both focuses on perceived crime. This study tested the relationship between criminal behavior and

New Urbanism with criminal behavior and Defensible Space, comparing them to the Vernacular Design.

Research Design

Crime rates and characteristics of urban design were collected on rapidly growing cities in Minnesota (1990-2000) during the past year. Information was gathered on these cities through government web sites and telephone surveys to planning departments. After obtaining rates on crimes against property and crimes against persons in 1990 and 2000 on each city, these rates were compared using their increase in population and their urban design.

Hypothesis

Not all cities are designed with Defensible Space or New Urbanism in mind. There is a "background level" of crime inherent in each of these cities. Therefore, three hypotheses are possible:

1. New Urbanism has higher crime than Defensible Space
2. Defensible Space has higher crime than New Urbanism
3. Crime rates are similar with both New Urbanism and Defensible Space – higher, lower, or similar to that of the Vernacular Design

However, since there was no pure form of Defensible Space in this study, these are the hypotheses:

1. New Urbanism has higher crime rates than the Vernacular Design
    a. New Urbanism and Defensible Space have higher crime rates than the Vernacular Design
2. New Urbanism has similar crime rates to the Vernacular design
    a. New Urbanism and Defensible Space have similar crime rates to the Vernacular Design
3. New Urbanism has lower crime rates than the Vernacular Design
    a. New Urbanism and Defensible Space have lower crime rates than the Vernacular Design

Research Limitations

- No neighborhood crime statistics
- Do not know when designs were implemented
- Small sample size

Data Collection and Variables

Background Information

An urban design which has been gaining more and more acceptance over the past few years is New Urbanism, also known as Traditional Neighborhood Design (TND) and Neo-Traditional Neighborhood Design. New Urbanism encourages landscaping, alleys, and on-street parking (*Engineering News Record*, 1994). Garages are hidden behind houses and porches are located in the front to promote neighbor-to-neighbor interaction. Tree-lined narrow streets, wide sidewalks, and accessibility of commercial to residential areas make walking easier and much more pleasant, according to R. Suarez (2000). Diverse housing types, sizes, and ranges of income levels and types of families also make up this design. It consists of a grid street design with no cul-de-sacs and with close proximity to public transportation. Most streets are no wider than two lanes plus parking

and have pedestrian level lighting (Carlile and Macy, 2001). The Congress for the New Urbanism (CNU) states that New Urbanist designs have mixed land use, a clear neighborhood center, and that the true test of a New Urbanist design is whether an eight-year-old can bike to a store, buy a popsicle, and make it back home safely without having to battle through freeways or busy traffic (cnu.org, n.d.).

Defensible Space is also referred to as Crime Prevention through Environmental Design (CPTED) or Secure by Design (SBD). This design emphasizes safety and environmental control through clearly defined personal spaces and territories to make it easier for residents to spot intruders. Defensible Space provides physical features which visually guide people through spaces by fences, gates, signage, landscaping, and lighting (Broward). The National Crime Prevention Council (2004) claims the use of landscaping and lighting also support natural surveillance of an area. Another technique of Defensible Space according to Timothy Crowe (2000) is to place safe activities in unsafe areas to control behavior, and unsafe activities in safe locations to put vulnerable activities in good natural surveillance. Crowe states "the proper design and effective use of the built environment can lead to a reduction in the fear of crime, and the incidence of crime, and to an improvement in the quality of life" (Crowe, 2000, p. 1).

Data Collection

Data collection on Minnesota cities with the highest population growth between 1990 and 2000 were taken from a League of Minnesota Cities report. Crime rates on these cities were taken from the Land Management Information Center website. Population data were collected from the US Census. To determine what design each city had, city planners were contacted, each was given the same criteria for the urban designs and asked which, if any, design the city has.

Selection Criteria

Cities selected for this study were the 34 fastest growing cities in the state of Minnesota between the years of 1990-2000. These cities were then narrowed down to those cities that had crime data available, and from which city planners responded, and came down to a total of 15 cities.

Design Criteria
New Urbanism

- Provides a range of housing choices, from apartments over storefronts to single-family homes with yards.
- Close proximity to public transportation
- Pedestrian friendly with tree-lined streets, wide sidewalks, pedestrian level lighting, and accessibility of commercial to residential areas making walking easier and much more pleasant, most daily needs are within a 5-minute walk of the neighborhood
- Encourages landscaping, alleys, and on-street parking
- Garages are hidden behind houses and porches are located in the front to promote neighbor-to-neighbor interaction
- Clear neighborhood center

Defensible Space
- Emphasizes safety and environmental control through clearly defined personal spaces and territories to make it easier for residents to spot intruders
- Physical features visually guide people through spaces by fences, gates, signage, landscaping, and lighting
- Provides access control, which increases the effort needed for offenders to commit crimes
- Another technique: to place safe activities in unsafe areas to control behavior, and unsafe activities in safe locations to put vulnerable activities in good natural surveillance.

Dependent Variables
Crime against property
Crime against persons
Independent Variables
City design

Analysis and Results

Methods of Analysis
- The data were compared using analysis of variance with SPSS to determine whether there is sufficient evidence to base a claim that either design is crimogenic
- The analysis measured the relationship between the growth rates and crime rates of the three groups (New Urbanism, Defensible Space, and the Vernacular Design), and the differences between the groups on those measures.

Results

It is found that there are no significant differences for the crimes against persons in 1990 or 2000 in comparing the results of the analysis of variance for the rates of crime against persons in 1990 and 2000 for each of the urban designs (refer to Table 2). However, the results of the analysis variance for crimes against property in 1990 and 2000 for each urban design (refer to Table 1) indicate a significant difference in crimes against property in 1990 for New Urbanist design. The results for property crime in 2000 also approach significance, but do not meet the statistical criterion of .05 or less.

Table 1. Crimes against Property

	Property 1990	Property 2000	Property Change	N
Vernacular Design	2.86	1.72	1.15	5
Defensible Space/New Urbanism	2.16	1.42	0.74	3
New Urbanism	2.32	1.67	1.21	9
ANOVA	0.036	0.090	0.812	

Table 2. Crimes against Persons

	Person 1990	Person 2000	Person Change	N
Vernacular Design	9.36	7.9	1.46	5
Defensible Space/New Urbanism	4.97	5.0	0.03	3
New Urbanism	5.10	5.27	1.58	6
ANOVA	0.084	0.673	0.726	

Discussion

This research suggests that New Urbanism is able to keep people from stealing; not from fighting. There were fewer incidents of crime against property, though there were not fewer incidents of crimes against persons. This study is not definitive, it appears that New Urbanism is more effective in deterring crime than Defensible Space, but at this stage more research needs to be done to base a claim that either urban design is crimogenic. Further research in this area could be done using a larger sample, getting crime statistics on specific geographic areas such as neighborhoods, and/or using different locations.

Conclusions

New Urbanism is a quickly growing urban design among city planners and architects. Few studies have focused on New Urbanist design regarding crime; meanwhile, Defensible Space is an urban design which directly aims at preventing crime. This study has examined both New Urbanism and Defensible Space to find if there were any differences in crime rates between the two. Further research needs to be done to base a claim that either design actually causes crime.

Example of Defensible Space (Chaska, MN)

Example of New Urbanism (Chaska, MN)

Example of Defensible Space (St. Peter, MN)

Example of Defensible Space
<http://portbight.portlandbight.com/modules.php?&name=Ccam&file=community&op=modload&comm=14>

REFERENCES

Basics of CPTED. (2004). National Crime Prevention Council. Retrieved June 9, 2004 from
        http://www.ncpc.org/ncpc/ncpc?pg=5882-2006-2486-2566

Carlile/Macy. (2001). Traditional Neighborhood Design. In Design Dispatch. Retrieved June 9, 2004
        from www.carlilemacy.com

Congress for the New Urbanism. (n.d.). Retrieved July 14, 2004, from
        http://www.cnu.org/about/index.cfm?formaction=tour&CFID=7103389&CFTOK
        EN=15120024

Crime Prevention Through Environmental Design (CPTED). (n.d.). Retrieved
        June 9, 2004, from http://www.co.broward.fl.us/mpi00100.htm

Crowe, Timothy D. (2000). *Crime Prevention Through Environmental Design*

Hafey , M.E.(2004). *New Urbanism Versus Defensible Space: Design Philosophies*
        Related to Neighborhood Satisfaction and Perceived Crime

Knowles, P. (2003). *Designing Out Crime: The Cost of Policing New Urbanism*
        National Crime Prevention Council. (n.d.). *Basics of CPTED.* Retrieved June 9, 2004, from
        http://www.ncpc.org/ncpc/ncpc?pg=882-2006-2486-2566

Newman, O. (1996). *Creating Defensible Space*. Retrieved July 11, 2004, from
        http://www.huduser.org/Publications/pdf/def.pdf

Schneider, K. (1996). *Peter Katz Promotes New Urbanism*. Retrieved July 13, 2004, from
        www.mlui.org/print.asp?fileid=3837

Serpas, R.W. (1998). *Common-Sense Approaches with Contradictory Results: Does*
        Defensible Space Curb Crime?

Suarez, R. (2000). *A New Urbanism Conversation.* Retrieved July 13, 2004, from
        http://www.pbs.org/newshour/newurbanism/plater-zyberk.html

Taylor, Ralph B. & Harrell, Adele V. (1996). Physical Environment and Crime. Retrieved June 14, 2004
        from http://www.ncjrs.org/txtfiles/physenv.txt

U.S. Census Bureau. (1990, 2000). Retrieved February 10, 2005 from http://www.census.gov/

Author Biography:

Afton Enger is a senior currently enrolled at Minnesota State University, Mankato pursuing a double major in Interior Design and Urban and Regional Studies. She graduated from New Ulm Senior High School in New Ulm, Minnesota. Enger is in the Ronald E. McNair Postbaccalaureate Achievement Program at MSU, from which she was awarded McNair Scholar of the Year for 2004-2005. Her research interests include topics in the academic discipline of Urban and Regional Studies such as community development, the social implications of urban design, and social issues in impoverished areas. In the following year Enger will continue conducting research on urban design and criminal behavior with Dr. Tony Filipovitch. Upon graduation she plans to attend graduate school where she will study community development.

Faculty Mentor Biography:

Anthony J. Filipovitch ("Tony," as he is generally known) holds a PhD in Urban Studies from Portland State University, an MA in Phenomenological Psychology from Duquesne University, and a BA in Psychology (with a teaching minor in French) from the University of Michigan. He has also taught in the Urban Studies program at the University of Tulsa and in Social Sciences at the Homewood Brushton Adult Education Center of the Allegheny County Community College in Pittsburgh, PA, and has served for 5 years as Dean of Graduate Studies & Research at MSU. His areas of teaching include (among others) analytical methods, nonprofit management, and planning process, and he has taught the AICP Exam review course for the MN Chapter of the APA for a number of years. He has published research on children in the city, community collaboration, healthy communities, computer-assisted analysis, and nonprofit organizations, and is the author of *Introduction to the City*. He is a past director of the Urban Affairs Association, President of the Mankato Area Foundation, and a member of the Mankato Planning Commission. He has received a Bush Fellowship, MSU's Douglas R. Moore lectureship, and the College's Frontiers Forum lectureship.