Over the past decade, the revitalization of inner-city neighborhoods in post-industrial cities has become an important focus of investigation among social scientists and urban development professionals. Most of these studies have addressed specific factors contributing to or accompanying the revitalization process (Clay 1980; Hodge 1980; Laska and Spain 1980; Sternlieb and Ford 1979; Tobin and Judd 1982; Tournier 1980; Zukin 1985). Historically, the use of human ecological theory for analyzing the issues related to urban change has been limited to the employment of the "invasion-succession" model. A recent and purportedly novel application of human ecology is Hudson's (1984) study of the "invasion" of artists into Lower Manhattan, an area now known as SoHo. Based on his findings, Hudson suggests that the perspective of human ecology be expanded to include the deliberate and coercive actions of groups of individuals as a principle factor bringing about change and influencing residential succession. However, other scholars, notably Spain (1989) have questioned whether Hudson has succeeded in refining human ecological theory or has only rediscovered themes previously available in Duncan's (1959) POET model. Hudson's work can also be criticized empirically, as he raises the dubitable claim that the social and economic reconstruction of Lower Manhattan by artists, politicians, and developers adumbrates "some trend toward fundamental future alteration in the development of our older post-industrial cities" (Hudson 1987, p. 6).

The purpose of this study is to address a number of Hudson's assertions regarding the utility of the "invasion-succession" model for analyzing urban revitalization in post-industrial cities. We specifically focus on Hudson's theoretical approach, and the adequacy of his particular empirical analysis of SoHo, then demonstrate that his theoretical interpretation results in a...
Until recently, the invasion-succession model has been used primarily to analyze racially changing neighborhoods. These studies, including O. D. Duncan and B. Duncan’s (1957) classic work on residential succession in Chicago, invariably report racial minorities replacing higher-status groups. Hudson (1980, 1984) argues that this literature—by focusing only on specific types of change—obscured application of the invasion-succession concept for general analyses of social processes such as gentrification and neighborhood revitalization. In his study of the SoHo district of New York City (1984, 1987), Hudson employs the concepts of invasion, succession, and adaptation to describe the process by which a previously industrial area was transformed into a residential and artistic community. The social and economic restructuring of SoHo (Lower Manhattan), as Hudson explains, began when artists settled—at first illegally—into abandoned warehouses, and then converted these industrial vestiges into unique loft-style living and studio spaces. In the process of succession that followed, “the new population [of artists] altered the land use patterns and social fabric of the area in such a way as to open possibilities for subsequent succession and adaptation” (1987, p. 120). Eventually, an equilibrium was reached, characterized by a relatively symbiotic competition between those who live and work within the art community, the shops, restaurants and bars that thrive on affluent residents and tourist trade, and the neighborhood industrial firms that have occupied the area for years. Hudson emphasizes, however, that the deliberate and coercive actions of individual actors were crucial to the successful long-term integration of artists into Lower Manhattan. In his words, the artists developed “a sophisticated arsenal of political weapons” to protect their community from the rising costs of the environment and the lifestyle they themselves had created (Hudson 1987, p. 90). The study of loft conversions in Lower Manhattan thus demonstrates, according to Hudson, that, in contrast to the traditional ecological theory, the invasion-succession model should include these “conscious attempts . . . in its explanation of how social systems move toward equilibrium” (Hudson 1989, p. 121).

Based on his findings, Hudson makes a number of assertions which can be summarized as follows: First, the case of SoHo represents both a novel and unanticipated phenomenon since the initial pioneers (the artists) consciously resisted displacement as the area gained in popularity and became more gentrified. Secondly, the revitalization process, as it occurred in Lower Manhattan, is an exemplar that typifies likely contemporary and future trends in the redevelopment of older post-industrial cities. And finally, Hudson insists that the ecological invasion-succession model, as applied to SoHo, provides “an explanatory framework that is not only retrospectively descriptive, but has the potential for more accurate prediction” of the changes which are occurring in the urban environment (Hudson 1989, p. 140).

**The POETS Model: A Supplement to Invasion and Succession**

Despite the apparent utility in Hudson’s application of the invasion and succession concepts, we argue that these concepts are insufficiently rich to characterize contemporary urban development. Such dissatisfaction appears elsewhere in the literature. Henig and Gale (1987, p. 400), for example, state that the invasion-succession model is inadequate to describe “the intricacy and complexity of the links between political forces and demographic change.” As a supplement to the invasion succession model, we propose using Duncan’s (1959) POET model, the ecological system consists of four components: Population, Organization, Environment, and Technology. A fifth component, Sentiment-symbolism (Firey 1945), is added for this discussion, hence the acronym POETS. As applied to a general analysis of urban revitalization, the components of the POETS model encompass the range of activities occurring within an ecological area undergoing revitalization, and point to the interrelatedness of an area and its activities with the city as a whole. The population component centers on the demographic nature of a group and how they adjust to their environment. Organization refers primarily to the manner in which humans establish social, political and occupational interdependencies, and is a crucial component in the ecological complex, since it draws attention to how a particular ecology is embedded in the economic organization of the larger social system. Environment, as used here, denotes the location, natural boundaries, and the built or
landscape environment of the area. Technology includes techniques employed by a population to facilitate their organizational activities. The sentiment-symbolism variable pertains to collective cultural and social-psychological expressions and motivations, a component largely ignored by sociological human ecologists but often emphasized by cultural geographers studying urban development (See, e.g., Domosh 1988, 1990; Duncan 1973). A combination of the POETS concepts and the invasion-succession model will be used below to analyze SoHo and Minneapolis. We hope to show that this approach offers a better understanding of urban revitalization than does Hudson's simple use of invasion-succession.

METHODOLOGY

Data supporting our critique of Hudson's perspective were compiled from a case study conducted in the Minneapolis warehouse district. Data were gathered primarily through interviews and written correspondence with artists, city planning officials, and developers who have been involved in the area's rehabilitation. Additional data were obtained from a questionnaire mailed to Minneapolis artists and residents of the warehouse district during February of 1988, and a second survey of residents in August of 1988. Personal observations and information from secondary sources including unpublished studies conducted by the city and local arts organizations are also included.

THE MINNEAPOLIS WAREHOUSE DISTRICT

Historical Geography

The Minneapolis warehouse district (MWHD) is an area of approximately 50 square blocks which lies just northwest of the city's central business district (CBD). Bounded by the Mississippi River to the east and a freeway corridor to the west and southwest, it remains a distinct district in the urban landscape of Minneapolis. The MWHD evolved during the 1880s and 90s, when Minneapolis was the primary rail distribution center for the newly settled regions of northwestern Minnesota, the Dakotas and Montana. Wholesalers eager to take advantage of this geographic and economic opportunity invested heavily in warehouse facilities in the MWHD. They considered it a natural location for wholesale distribution given the low cost of land, direct access to a major railroad corridor, and close proximity to the CBD. Wholesaling in the MWHD reached its peak around 1916. Beginning in the 1920s, however, Minneapolis began to lose its dominant position in the warehouse industry, due in part to increased reliance on trucking over rail transport. New trucking distribution centers located in the suburbs eventually replaced the aging, railroad-dependant facilities of the MWHD.

From the late 19th century, when the MWHD was established as a wholesaling center, until the end of the 1960s, land use patterns remained relatively stable. Light manufacturing and wholesaling continued to be the mainstay of the area until after World War II. The MWHD failed to receive much attention from city planners until 1965, when a community analysis report was submitted to the city planning commission and the city council. The document described the warehouse district as suffering from aging and deteriorated structures, a lack of off-street loading facilities, and other problems related to small land parcels which made industry expansion difficult. Between 1940 and 1960 it had the greatest out-migration of firms to suburban areas of any industrial district in the city (Central Community Analysis and Action Recommendations 1965). By the late 1960s only a few distributors remained, those who required less space to maintain their operations remained. A local writer described the area during this period as "a quiet, mostly empty, almost foreboding section of the city" (Wieffering 1985).

Artists' Invasion of the MWHD

Beginning in the early to mid-1970s, the MWHD experienced a residential invasion and revitalization similar to what occurred in SoHo. As in Lower Manhattan, artists in Minneapolis were drawn to the abandoned and deteriorating inner-city warehouses by two key factors resulting from the prior exodus of wholesale and light manufacturing businesses—low rents and abundant available space. Artists also favored the location because of its access to material and cultural resources. The sturdy structures were originally designed to hold huge supplies of manufactured goods for short periods of time, a need that demanded high ceilings and few partitions. The artist pioneers perceived these facilities as ideal for the production of both visual and performing arts. They also found the MWHD attractive on a purely aesthetic basis. From the street, the buildings still looked much like they did at the turn of the century. Most are of handsome brick and masonry construction, four to five stories high and bear some elements of the Commercial Style architecture popular before the turn of the century: arched windows and entrances, decorative stone cornices and occasional flourishes of terra cotta ornament.

At the time of the artists’ initial move into the MWHD, many of the century-old buildings could be rented for as little as $200 a month (McGrath 1987, p. 1B). Landlords, reluctant to maintain the outdated structures, found that providing low-cost space to the artists was generally to their advantage. Since many of the artists lived in their lofts illegally, however, they were not in a position to make demands, yet they invested time and money into renovations needed to bring the structures up to residential standards. Along with the low rents, the warehouses appealed to artists because of its proximity to art supply stores, print shops, and other resources necessary for their work.

The artists’ world gained a new dimension as participants enjoyed the benefits of living and working among other artists as well as having the opportunity to interact with their supporters on a daily basis. One eight-year
resident of the area remarked, "when you are next door to 30 plus artists daily (as I am) there is a chance to be really 'vital' in every aspect of the day's business." Others have commented: "The benefit of the area is that we have artists cooperating together;" "the galleries in the warehouse district have provided interesting and diverse forums for art and expression;" "geographically it has given the Minneapolis artists an identifiable area or location for community participation--both among the artists themselves and with non-artists;" and, "the strong sense of community is important because it affects an individual's motivation, inspiration, and endurance--any lack of which can be devastation for the artists" (Survey data 1988).

While the artists' enclave in the MWHD was beginning to take on the positive characteristics of a community, it was also attracting critical attention from city authorities. The physical environment of the warehouses that so well suited the lifestyles of the artists did not conform to city residential building standards for ventilation, exits, and other safety measures. Although the building inspector for the warehouse area worked cooperatively with the artists to make sure that their conversions met code requirements, remedies to code problems were often beyond artists' means. "We tell them all the same thing," he explained, "we'll gladly work with you to begin with. But we really are behind the eight ball when it comes to somebody already living in a unit, we have to come in with a big stick and say get out" (Sample 1978, p. 1C). Many artists resorted to a "black curtain" technique to hide their presence during the night (Nelson 1980, p.8). They lived in fear of eviction, and as one artist noted, their illegal residences placed them in a politically compromised position: "Because you are living illegally, you are sacrificing all your normal rights....I want to be able to use my basic rights when I am being used as a tenant--whether it be health, the landlord, or whatever. As a resident of an illegal studio you don't have any rights because anything you do to solve the problem will lead to you getting kicked out." In 1980, Artspace Projects counted sixty artist units in the warehouse district, and of the sixty, only twelve had complied fully with building code requirements and obtained a certificate of occupancy (Nelson 1980).

The day to day frustrations of adapting loft space to satisfy city codes were, for the most part, individual burdens. In the greater social sphere of the city, however, the MWHD was gaining a romantic reputation as a place where people lived unusual and creative lives. Caught up in the spirit of the emerging community, one local writer describes the effects of the artist's presence in the MWHD:

In settling into the North Loop area, [they] have established their own distinctive community--an autonomous oasis of highly independent individuals sharing common bonds of creative talent, nonconformist living and economic hardship. At the same time, they have contributed more to the district than just paint, mortar and an unconventional set of values. They have become enthusiastic purveyors of culture and tenacious urban developers, resurrecting a neglected area into a highly attractive place to live, work, and visit (Berlowe 1980).

While artists were struggling to maintain their own work spaces, their simple presence in the area was catalytic, drawing other arts-related services and amenities into the area. Dance and theater companies rehearsed and held performances in the wide-open warehouse spaces; galleries and graphic design studios opened; architects and other businesses moved into the area; and sidewalk cafes frequented by artists and theater goers became the newest in "trendy" places to dine. The artists invasion thus began to give new life to a once desolated area of the city.

Developments in the MWHD Real Estate Market

At the same time that an arts community emerged in the MWHD, residential and commercial developers began to take an interest in the economic possibilities of the area. Their interest, however, was largely unrelated to the artists' recent invasion. The primary motive of the developers was to take advantage of the tax investment credits offered for historic rehabilitation projects. These credits became available to investors after the city of Minneapolis designated the area a "preservation district" in 1978.

While tax investment credits were clearly the key for most developers who invested in the warehouse district, the assurance of future amenities in the area also figured significantly into investment decisions. One developer/architect--who pioneered the renovation of MWHD structures for mixed commercial and residential use--went ahead with his plans only after the city of Minneapolis guaranteed certain municipal improvements affecting his buildings. The project involved restoration of the historic "Itasca" buildings with the aim of developing restaurants and office space on the lower floors of the buildings and loft-type condominium units above. For this developer, the key incentive was the city's promise to complete a park system long slated to run along the Mississippi River adjacent to the Itasca complex. Recognizing the significant social value given to waterfront recreation areas, he affirmed "that's what drew us down here, and that's why we bought the Itasca and developed that property--because it would be right on the park" (Interview data 1988). The "River Road Project"--which will eventually extend along the entire length of the Mississippi River through Minneapolis--thus became a critical element in the development of a residential community in the MWHD.

The atmosphere created by the river and the character of the old buildings also drew office and retail establishments into the MWHD. One of the largest property holders in the warehouse district estimated that by 1985 more than 200,000 square feet of their warehouse and manufacturing space had been converted into retail or office space. "What excites us most," the company's president states, "is that the warehouse district has come to life once again,
and when you couple that with the other exciting events of the growth of the city it means that the business people who want to locate downtown with their business--large or small--have lots of options from which to choose" (Sidney 1983). Developers and business owners, such as this company official, point to the revitalization of the MWHD as an important factor in the growth of the city at large. At the same time, they recognize that the cultural (arts related events) and social amenities (the River Front Project) are significant factors in that growth.

The Influx of Media-related Businesses into the MWHD

The revitalization of the MWHD has also been sustained by service-oriented businesses that need large, low cost production facilities within a short distance of the Minneapolis CBD. In particular, there are media-related businesses that draw on downtown corporations for their clientele. The coordinator of film, video, and recording for the city of Minneapolis is currently working with approximately 200 companies in the MWHD, of which the vast majority employ only 3-4 people. These small businesses locate in the warehouse district because, as he explained, "they want to be in the vicinity of downtown but can't afford downtown." He sees media-related businesses, such as recording companies, broadcast commercial producers, graphic artists, and commercial photographers, as part of a system that provides specialized production services to large corporations in the CBD. Such services are, he describes, part of a "mutually dependent network which evolved as a result of the development of high rise office buildings [in the downtown core]" (Interview data 1988). In this sense, the success of the MWHD has depended on another urban revitalization effort. Since the 1970s--when many CBDs lost corporate headquarters to the suburbs--several key Minneapolis businesses expanded their downtown facilities. With the completion of the IDS building in 1972 (the city's first major skyscraper) and the decision by Dayton Hudson Corporation (the city's largest retailer) to maintain their flagship store in downtown, the Minneapolis CBD began to flourish. By the 1980s, growth of the downtown was clearly affecting development in adjacent areas, especially the MWHD.

The character of the MWHD unquestionably has changed since the artists arrived twenty years ago. The presence of an upper class population, accompanied by increases in rents and other living expenses, has forced nearly all of the original pioneering artists to leave the area. Many have moved into more affordable warehouse structures in other parts of the Twin Cities (McGrath 1987; Weber 1985). Our 1988 survey shows only a small contingent of remaining MWHD residents who consider themselves full time artists. These persons, however, are not struggling artists cooking on hot plates and living in poverty. Five of the full time artists earn between $25,000 and $40,000 per year, and one generates an income of over $50,000. These individuals are among the minority of artists who can afford the current high cost of living in the MWHD. In an attempt to answer the question, "Where have all the artists gone?" one writer describes a changed and somewhat gentrified MWHD:

Contrary to the belief commonly held by the people who tour the galleries, dine in the fine restaurants, drink in its now crowded bars and work in its newly developed office space, Minneapolis' north loop, or warehouse district, is not the haven for struggling artists it once used to be. The reality of a bohemian enclave is gone, but the ambiance remains (Leinfelder 1987).

SOHO AND THE MWHD

The previous description of the history of the MWHD reveals three major events involved in the revitalization process that has occurred over the past twenty years: the artists' invasion of the MWHD, developments in the MWHD real estate market, and the influx of media-related businesses to the MWHD. The following compares each of these factors with events that occurred during the revitalization of Lower Manhattan. The analysis is set in the context of both the invasion-succession approach and the POETS model in an attempt to discover which best explains the process of urban revitalization.

Artists' Invasion of the MWHD

The principle factors that initially attracted artists to inner city warehouses in both Lower Manhattan and the MWHD were low rents and abundant available space. The prior exodus of wholesale and light manufacturing businesses essentially created a niche that was well-suited to the artists' occupational needs. Both visual and performing artists found the commercial style architecture--high ceilings, unobstructed sight lines, many windows, wide doorways, and freight elevators--an ideal environment for free artistic expression. Visual artists commented on the ease with which they could construct and transport large objects and supplies. A performing artist in the MWHD noted that, in addition to being a residence, her loft space served as "a dance studio, rehearsal and performance space combined" (Survey data 1988). In this respect, the built environment played a key role in the invasion of artists into Lower Manhattan and into the MWHD.

The artists' decision to settle into Lower Manhattan and into the MWHD also involved an important organizational component (occupation related activities) related to the environmental component (physical proximity to resources). In both places artists were provided with convenient access to material as well as social resources--both of which are essential to the production and to the distribution of art. The key difference between the two situations comes to light by figuring in the sentiment-symbolism of the artists' activities in relation to population (density), organization (orchestrating occupational necessities), and to the
environment (access to production facilities and resources). While there was little difference between the latter two components in each situation, artists residing in SoHo faced a much tighter housing market, which led them to compete more fiercely to defend their space. In addition, the sheer numbers of SoHo artists was conducive to stronger community bonds. Although data is not available to compare the actual numbers of artists residing in each area, presumably there is an enormous difference. SoHo artists number in the thousands, while estimates of artists in the MWHD have seldom reached over 350. In both SoHo and the MWHD, artists have encountered hardships related to increases in the cost of living and conflict stemming from their illegal living arrangements. Minneapolis artists have responded to these ongoing problems by moving out of the MWHD. They aim to find an area within the Twin Cities where studio and living spaces can be established and maintained without the threat of other groups eventually moving in and taking over their domain. The artists in SoHo, on the other hand, responded to the same pressures by developing a strong commitment to defend their occupational and personal goals. As Hudson (1987, p. 83) explains, "the constant stress of these conditions took its toll. But the stress itself generated a stubborn commitment to the goal of being able to live and work as one wanted, in a neighborhood that supported one's values, and with those who shared one's dreams."

The important point that can be gleaned from this comparison is that the actions taken by SoHo artists to influence succession do not automatically portend similar occurrences in other cities. Minneapolis artists, while upset about being "forced" out of the MWHD, have drawn technical assistance from non-profit arts organizations such as Artspace Projects Inc. to locate elsewhere in the city. After nearly twenty years of occupying the MWHD their overall effect on subsequent development of this area is minimal.

Developments in the MWHD Real Estate Market

While the structural remnants of the industrial era set the stage for an artists' invasion into both SoHo and the MWHD, the MWHD offered additional environmental amenities that also served to attract a group of young urban professionals. Our survey of Itasca residents (largely an upper-middle class population) indicates that they were drawn to the area by three principal factors—the aesthetic character of the historic buildings, the Mississippi river, and the central-city location—all of which relate directly to the built and natural environment. The effect of two of these factors in terms of spurring growth, however, has depended on the organization of government agencies and community business groups. First, the development of residential space in the historic warehouses occurred only after tax increment financing became available for projects involving the preservation of historically significant buildings. In contrast to SoHo, the city of Minneapolis expressed an early concern and acted to insure the preservation of historic warehouses in the MWHD, while SoHo artists played a crucial role in The Landmarks Preservation Commission's decision to give SoHo an historic designation. In Minneapolis, although the invasion of artists clearly predates the Historic Preservation Act, the growth of an arts community in the MWHD had little effect on initiating this action. On the contrary, reports for the city planning commission and the Minneapolis city council were drawn up as early as the mid-1960s to address the need to rehabilitate and preserve the historic structures in the abandoned MWHD. The influx of a group of residents characterized as young urban professionals was not spurred by the presence of an arts community in the MWHD but rather by the environmental condition of a post-industrial society and by a sentiment-symbolic, or aesthetic appreciation for the buildings.

Tourner (1980) notes that while "historic district zoning" is used by cities to spur growth, it is also a means by which a neighborhood can be stabilized. A representative from the Minneapolis Heritage Preservation Commission reiterated this theme. She explained that the commission's role is to review plans and to make recommendations according to Secretary of Interior's Guidelines for Rehabilitation. Although the guidelines are not always conducive to conventional methods of construction, she added, there is a general consensus among planning officials and certain developers that the constraints are a reliable means of preserving the architectural landscape of the area and preventing obtrusive high rise structures from being built. Again, this discussion illustrates the problems associated with trying to analyze the revitalization process that occurred in the MWHD using the invasion-succession model. In other words, the city of Minneapolis and business groups did not invade the MWHD, but rather organized according to environmental conditions to facilitate the growth of a business community and residential population.

The development of the parkway system along the Mississippi river presents a similar situation. Construction of the parks did not begin until around 1980, yet the organization behind this project far predates any activities of the artists. According to a representative from the Planning Division of the Minneapolis Park and Recreation Board, the idea of a scenic drive and park system along the Mississippi actually began as early as 1937, when Secretary of the Interior Harold Ickes established the "Great River Road Program" aimed at constructing a road that would run the entire length of the Mississippi River—from the headwaters in northern Minnesota to the Gulf of Mexico. In all areas, with the exception of downtown Minneapolis, an existing road was found which identified that route. In the late 1960s, members of three separate agencies—the Minneapolis Parks and Recreation Board, the Housing Authority, and the City of Minneapolis—formed a coalition to organize the implementation of this River Road Program. By the early 1980s the first initiative toward their goal had already been completed—a major study of the
AN EMPIRICAL EXAMINATION OF TWO MODELS
OF CULTURAL CAUSATION*

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The traditional macroscopic model of cultural causation advanced by Weber and modified by Parsons assumes that values provide orientation for human action. Thus, values are conceptualized as the intervening link between culture and behavior and in general, are viewed as predictive of human action. Swidler (1986) contends that values are a poor predictor of behavior. As an alternative model, Swidler asserts that cultures provide actors with a limited array of behavioral options. Because this array is finite and indicative of a particular cultural setting, intracultural behavioral similarities are observable. We empirically test the link between culture and behavior in a situation which Swidler defines as "unsettled lives." Our findings offer little support for the traditionally assumed link between values and behavior. The theoretical implications of our findings are discussed and an expansion of Swidler's model is offered.

INTRODUCTION

The assertion that culture affects human behavior is as close to a truism as exists in sociology. Values, as the theoretical link between culture and behavior, are assumed to be internalized by societal members resulting, for the most part, in actions consistent with cultural prescriptions. However, Swidler (1986), drawing heavily upon the works of Clifford Geertz, contends that the traditional cultural causation model of Weber (1958 [1904-5]) modified by Parsons (1951) is incorrect. Her position is that culture, rather than specifying values and ultimately ends which direct human behavior, provides actors with an array of behavioral options, a tool kit of sorts,

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