DISSERTATION

FEASIBILITY OF NEGOTIATED COMPENSATION AS AN ECONOMIC SOLUTION TO ENVIRONMENTAL INJUSTICE

Submitted by

Dawn K. Nannini

Department of Psychology

In partial fulfillment of the requirements

For the Degree of Doctor of Philosophy

Colorado State University

Fort Collins, Colorado

Summer 2003

ProQuest Information and Learning Company
300 North Zeeb Road
P.O. Box 1346
Ann Arbor, MI 48106-1346

COLORADO STATE UNIVERSITY

July 7, 2003

WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY DAWN K. NANNINI ENITITLED FEASIBILITY OF NEGOTIATED COMPENSATION AS AN ECONOMIC SOLUTION TO ENVIRONMENTAL INJUSTICE BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

Committee on Graduate Work

Advisor

Department Chair

ABSTRACT OF THE DISSERTATION

FEASIBILITY OF NEGOTIATED COMPENSATION AS AN ECONOMIC SOLUTION TO ENVRIONMENTAL INJUSTICE

Environmental racism refers to the disproportionate siting of environmentally undesirable facilities (waste dumps, polluting factories, etc.) in lower-income neighborhoods, and environmental justice refers to the amelioration of this siting problem. A proposed solution is negotiated compensation, in which some sort of amenities (e.g., recreation facilities, attractive landscaping, safety enhancements) are promised to a neighborhood in exchange for locating the undesirable facility there. The current study investigated the feasibility of negotiated compensation in a sample of 140 adult respondents from a wide range of socioeconomic backgrounds. In a computerized procedure participants completed a demographic questionnaire, measures of neighborhood satisfaction and attachment, and indicated their willingness to accept compensations for the hypothetical nearby siting of a cement plant, a recycling center, and a plant nursery. A paired comparisons task was used to rank order a set of seven potential compensations, ranging from free cable or satellite television service to facilities for children and neighborhood beautification.

As expected, the plant nursery was the most acceptable facility, followed by the recycling center and the cement plant. All seven compensations were preferred over moving out of the neighborhood. Some 83% of respondents were willing to accept at least one compensation for the plant nursery, 54% for the recycling center, and 41% for the cement plant. The most endorsed compensations were those that benefited the whole neighborhood rather than the individual households, such as facilities for neighborhood children,

neighborhood beautification, expanded parks, traffic improvements, and security. Contrary to expectations, willingness to accept compensation was not related to socioeconomic status. Discriminant function analyses failed to identify a set of characteristics of people willing to accept compensation. The only individual difference variable predicting willingness to accept compensation was age, with older respondents less willing to accept any compensation (r = -.13 to -.27). Place attachment to house and neighborhood and neighborhood satisfaction were weak predictors of willingness to accept compensation (R^2 = .02 to .06).

Altogether, results suggest that acceptable compensations can be identified, that negotiated compensation is feasible across a variety of neighborhoods and socioeconomic groups, and that it is a viable tool to promote environmental justice.

Dawn K. Nannini
Psychology Department
Colorado State University
Fort Collins, CO 80523
Summer 2003

Acknowledgments

Special thanks to my advisor, Paul Bell, for his patience and mentorship throughout the process of completing this project. Tom Brown and George Peterson also deserve recognition for their commitment to developing the software that was used to collect this data. Colleen Landis, my research assistant, is much appreciated for her interest in this project and her unwavering dedication to seeing it through from start to finish.

I am forever grateful to my husband, John, who gave so much of himself in his support of me throughout this degree program. Ben, my son, and his warm welcome-homes made it all worth it!

Table of Contents

List of Tables

List of Figures

Chapter 1

Introduction

Environmental Justice

It should come as no surprise that waste dumps and industries producing toxic materials are not evenly or randomly located across the various neighborhoods of a community. LULU is an acronym that stands for Locally Undesirable Land Use, and it refers to any development project or facility that is found or may be found objectionable to those or to others on behalf of those who reside in its close vicinity. Facilities may be found objectionable for any number of reasons, which vary as a function of both the facility and of the affected community. While not limited to the following concerns, some common apprehensions associated with LULUs are noxious odors, increased traffic, and the potential for ill health effects, which may not become evident for several years following initial exposure. When a particular facility is found to be extremely objectionable in terms of environmental quality, the concerns associated with that facility become an issue of environmental justice.

According to the Environmental Protection Agency (EPA, 2003) environmental justice is defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. In this definition, fair treatment refers to the fact that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and

policies (EPA, 2003). Facilities that notoriously generate discussions of environmental justice include nuclear power plants, sewage treatment facilities, and landfills.

Unfortunately, the above mentioned operations and many other operations are a growing necessity for urban landscapes as population densities intensify across the country and people indulge in affluent lifestyles. In 1999, for example, 230 million tons of solid waste was generated in the U.S., which amounts to 4.6 pounds of solid waste per person per day—up from 2.7 pounds per person per day in 1960 (EPA, 2001). Despite the practical demand for these operations, the siting of such facilities is an emotionally charged business. Inevitably, the facility must be sited within a reasonable distance of an urban area, which means it will end up in somebody's back yard. In addition to meeting a number of federal and state regulations to ensure that facilities meet a standard of environmental cleanliness and/or that a certain level of technology be in place, industry representatives are faced with the daunting task of selecting and gaining community approval for siting the facility.

The complexity of siting such facilities is further complicated by regulations that are designed to avoid perpetration of environmental injustices. In the last couple of decades the distribution of environmental hazards has gained widespread attention as it has become apparent that minority and low-income populations are disproportionately exposed to environmental hazards (Bullard, 1983; Mohai & Bryant, 1992; United Church of Christ, 1987; United States General Accounting Office, 1983). For example, 82% of Houston's waste management facilities are located in black communities, yet African Americans make up only 28% of Houston's total population (Bullard, 1994, May). The absence of environmental justice is alternatively called "environmental racism" and "environmental discrimination."

Despite the more recent attention to the issue, the claim that the poor and populations of color are subject to environmental hazards is not novel. Taylor (1999) actually credits small grass roots organizations' interest in the topic as marking the beginning of the environmental movement in the U.S. Groups such as Mothers of East Los Angeles and Chicago's People of Community Recovery have highlighted what they consider to be the systematic discrimination in the siting, regulation, and remediation of industrial and waste facilities (Lambert & Boerner, 1997).

In response to a growing concern over the maldistribution of environmental risk, President Clinton issued an Executive Order in 1994 that required each federal agency to "make achieving environmental justice part of its mission." The president's attention to this matter resulted in all three branches of the federal government and many states taking steps to combat environmental inequities (Lambert & Boerner, 1997). Current environmental justice policies focus almost exclusively on limiting industrial siting in low income and minority neighborhoods. The efficacy of this focus relies on the assumption that the inequities that exist are a result of unfair siting decisions.

Research endeavors that are credited with alerting the public to the issue of environmental justice use current racial and demographic data surrounding polluting and waste plants to determine that the distribution of environmental hazards is unjust and that siting decisions have been discriminatory. While those who have called attention to the inequity of environmental risks and hazards in minority and low-income populations have succeeded in demonstrating a positive correlation between such populations and the location of hazardous facilities (Bullard, 1983; Mohai & Bryant, 1992; United Church of Christ, 1987), the question of causality has been raised (Been, 1993, 1994; Helfand & Peyton, 1999; Lambert & Boerner, 1997; Mitchell, Thomas, & Cutter, 1999).

While existing inequities may be the result of racial discrimination at the time of siting, they could also be due to a number of other factors. Minority status and poverty are positively correlated with each other and are also often correlated with lower educational attainment and less access to community decision makers (Helfand & Peyton, 1999). Due to the social and political complexity of these relationships environmental justice is likely impacted by several of these variables.

White Flight

As an alternative to asserting discrimination in the siting process, some have focused on market dynamics as a potential explanation for the correlation that exists between the location of minority and low-income populations and hazardous facilities (Been, 1994; Lambert & Boerner, 1997; Mitchell, Thomas, & Cutter, 1999). This alternative perspective advocates the use of a historical point of view that examines the minority and income composition of populations living near hazardous or polluting facilities over time. This consideration of environmental justice has revealed an economic explanation that expresses itself through the process of residential mobility.

Residential mobility refers to the shuffle of households from one location to another. In identifying motivations for a move, research has focused on both structural factors and on residential satisfaction. Structural factors include position in the life cycle such as age and change in household size, financial constraints, and community attachments due to housing tenure. Residential satisfaction refers to factors such as residents' subjective evaluation of neighborhood safety, value, and noise. The subjective evaluation of residential satisfaction similarly motivates prospective buyers (Lee, Oropesa, & Kanan, 1994), as demonstrated by a national survey revealing that respondents would rather have a less desirable home in a very

good neighborhood versus a very good house in a less desirable neighborhood (Butler et al., 1969).

Early attempts to understand residential satisfaction and mobility focused on the effect of a neighborhood's changing racial composition. As indicated by 1970 census data, rapid racial turnover following black entry was the norm in U.S. cities in the 1960s (Massey & Bitterman, 1985; Massey & Mullen, 1984). When white households move as a result of the entry of an ethnic minority group or because of a perceived change in environmental quality, their residential mobility is often referred to as "white flight." Since its initial conceptualization white flight has proven to be far more complex than the simple effects of prejudice. For example, it is not the mere presence of a black household that propels white flight, but rather, the percentage of black representation in the neighborhood that appears to have the greater effect of racial turnover. The point at which white households begin moving out of a neighborhood once black households begin moving in is called the "tipping point." Furthermore, while white flight is historically characterized as a black and white issue, it has been expanded to include the effect of other racial minorities on neighborhood resegregation, particularly that of Asian and Hispanic populations. While the tipping point varies across groups, it falls markedly when a neighborhood contains a diversity of minority populations, and the tipping point drops even further as the distance from an established black or Hispanic neighborhood decreases (Denton & Massey, 1991).

Perhaps the most popular explanation for whites moving out of or avoiding a neighborhood that has exceeded the tipping point or is adjacent to a black or Hispanic enclave is fear of crime (Downs, 1973). As noted by Downs, there is strong statistical evidence that high crime, vandalism, and delinquency rates are indeed found in areas that are predominantly low income or predominantly black and especially both, and others have

supported the relationship that exists between the racial composition of an area and crime rates (Logan & Messner, 1987; Stahura & Huff, 1981; Stahura, Huff, & Smith, 1980). The association of ethnic minorities with high crime seems to motivate white homeowners to vacate a neighborhood that they perceive will inevitably deteriorate.

Despite whites' perception that the proportion of nonwhites is an indicator of crime (Lizotte & Bordua, 1980), the relationship between race and crime has only recently been disentangled. That is, it seems to be the case that there are reciprocal effects of racial composition and violent crime (Liska & Bellair, 1995; Liska, Logan, & Bellair, 1998). Crime rates differentially affect white and nonwhite mobility such that as the crime rate increases the white population decreases as a result of migration out of the high crime areas. Liska and Bellair (1995) recognize the effect of crime on basic social processes; people who can afford to do so leave high crime areas, and resources to leave are related to race. Failure to acknowledge these reciprocal effects of crime and racial composition leads to an overestimation of the effect of racial composition on a neighborhood's crime rates (Liska & Bellair, 1995) and similarly, a misunderstanding of the dynamics that result in a neighborhood's social and economic deterioration.

In line with the theory that people who can afford to do so avoid working, living, and playing in areas that they find undesirable or anticipate as such, the effects of white flight are implicated in other social ills such as environmental justice (Lambert & Boerner, 1997). Consistent with this economic consideration of environmental justice, after a long process of arbitration in which the city or a private developer "wins" the decision to build a hazardous facility in a community, residents may feel that leaving is their only choice if they are to avoid what they perceive to be the degradation of their neighborhood. As a result, hazardous facilities that were originally sited in white, middle or upper class areas often

become surrounded by minority residents who are attracted to these neighborhoods for their declining housing prices (Been, 1994; Lambert & Boerner, 1997). This account is sustained by the fact that over time areas in the vicinity of hazardous and polluting facilities have witnessed an increase in the proportion of minority populations, a decrease in family income, a lower rate of housing value increase as compared to surrounding communities, and an increase in poverty rates (Been, 1994; Lambert & Boerner, 1997).

Whether white flight is the result of exceeding the ethnic minority tipping point or the presence of an environmental insult, the cause and effect seem to be similar. White households move out of a neighborhood due to a perception that the neighborhood is deteriorating and, more importantly, because they have the resources and opportunities to leave. When a neighborhood is deemed an "undesirable" place to live, property values drop, and lower income populations move in. The effect is that ethnic minorities reside in areas with high crime rates and environmental insults.

Negotiated Compensation

This historical explanation for environmental racism is not uncontested. For example, in one written account Bullard (1994, p. 11) stated, "Thomas Lambert and Christopher Boerner are engaged in a senseless 'chicken-or-egg' debate—the question of which came first, the community or the waste facilities. The debate is a distraction from the real task of ending environmental injustice wherever or whenever it occurs." Alternatively, entertaining the idea that there might be an explanation other than or in conjunction with discriminatory siting practices is important if the problem is to be adequately addressed. The suggestion that environmental justice may be a reflection of market dynamics does not minimize the fact that injustices exist. It just requires that the solution be re-conceptualized.

Existing provisions have succeeded in limiting new industrial siting in low income and minority neighborhoods in that developers are discouraged from building in such neighborhoods by threat of a discrimination suit and regulatory delays in construction. While these regulations have been effective in protecting neighborhoods that already contain high numbers of ethnic minorities, they fail to circumvent the inevitability of white flight, the depression of property values, and the attraction of ethnic minorities to less expensive housing. Reconceptualizing the solution requires that policymakers consider the idea that current environmental justice policies may be misguided. Lambert and Boerner (1997) proposed that a more effective means of avoiding environmental justice issues is to address the forces that propel whites out and keep ethnic minorities in a neighborhood that is situated next to a less than desirable facility.

Negotiated compensation is a solution that is designed to prevent white flight and avoid construction delays by providing offsetting benefits to those who live near undesirable facilities. The effect would be that the surrounding property is not rendered less valuable. Possible forms of compensations might include property tax breaks, community services, or scholarship funds for the children growing up in the neighborhood. Kunreuther and Portney (1991) even heralded the idea of holding a lottery or auction in which potential host communities could bid against each other for the facility in an effort to "win" the compensation package.

The notion of compensating people for accepting the risks or nuisance factors associated with hazardous and polluting operations has provoked some to question the ethics of such a strategy. To this concern, proponents of negotiated compensation focus on the low actual risks associated with modern technology and the fact that negotiated compensation while not labeled as such, has been practiced in poor communities for a long

time. Lambert and Boerner (1997) note the cases of Robbins, IL and Sumter County, AL as good examples of negotiated compensation providing local benefits to poor communities with minimal associated risk.

Robbins, a village in South Chicago, is a predominantly minority community that suffered from a variety of economic and social ills. Its per capita income ranked 262 out of 263 communities in the metropolitan area (Rubin, 1994), with almost a quarter of the village's families living below the poverty line (U.S. Census, 1993). Its population fell 15% between 1980 and 1991, and its 34 churches outnumbered tax-paying businesses by almost 25% (Rubin, 1994). It is now host to an incinerator, which processes 1600 tons of trash and produces 50 megawatts of electricity a day (Sobieski, 1993). A health impact study for the incinerator (Hallenbeck as cited in Sobieski, 1993) projected that living near the Robbins trash-to-energy facility is less risky than such things as living in a stone or brick house for two months, having one chest X-ray, or traveling 10 miles on a bicycle. On the other hand, the local benefits associated with the incinerator are large cash disbursements that have been used to replace a 30-year old fire truck, heat the police station, purchase a generator for the town's pump house so that the residents no longer lose water pressure during power outages, expand their inadequate sewer system, and establish college scholarship programs for Robbins' high school graduates (Lambert & Boerner, 1997). Other benefits include increased employment opportunities and tax revenue that has increased the town's tax base by 63%.

Sumter County, AL is another good example of how a poor, predominantly African-American community has benefited from waste operations with minimal risk. The siting of the landfill is often identified as a typical example of environmental racism (Bullard, 1983), but in fact the landfill was sited in Sumter County because of its sparse population, its arid

climate, and its location atop the Selma chalk formation (McDermott, 1994); it is considered one of the world's safest landfills (McDermott, 1994). The landfill provides over 400 jobs with a $10 million annual payroll and a guaranteed $4.2 million in annual tax revenue to the community. The money has been used by the community to build a fire station and a town hall, improve schools, and upgrade the healthcare delivery system, and the community has begun to reverse the rates of illiteracy and infant mortality.

Robbins and Sumter County provide good examples of how industrial facilities can provide compensating benefits and improve the quality of life in a community, yet both communities had to battle the opposition of environmentalists for the economic opportunity the operations promised to deliver. Environmental advocates often discount risk analyses in favor of anecdotal accounts of high disease and cancer mortality rates to challenge the development of industrial operations (Bryant, 1993; Slovic, 1987). For example, Louisiana's "Cancer Alley" south of Baton Rouge is typically cited as evidence for the deleterious health effects of living near industry. However, studies have shown that while the cancer death rate is high in south Louisiana, incidence rates are actually below average. The problem then seems to be one of lack of early detection and limited access to health care, rather than environmental contamination (Louisiana Advisory Committee, 1993).

Neighborhoods

Neighborhoods represent more than just a geographic location to their residents. They are environments to which people become attached. Place attachment is marked by a positive affective or emotional bond, memories that provide meaning to experience with the place, and a sense of anxiety associated with having to separate from the place (Bell, Greene, Fisher, & Baum, 2001). While not necessarily dependent on time in the neighborhood, place attachment involves the development of roots that stabilize and create a feeling of comfort

and security (Rivlin, 1982), and the greater the attachment the greater the distress can be if separation from the place is forced (Bell et al., 2001).

While the proposal to build a LULU does not necessarily displace a whole neighborhood of people, it threatens to do so if residents move out as a result of the facility moving in. Negotiated compensation as a solution to environmental justice is proposed by Lambert and Boerner (1997) as a means to protect the disenfranchised. If it succeeds, however, it may also have the effect of protecting all residents regardless of socioeconomic position by keeping neighborhoods intact.

The positive effects of place attachment between a neighborhood and its residents are reciprocal. Place attachment seems to foster social and political involvement in the preservation of physical and social features that characterize the neighborhood. Vorkinn and Riese (2001) demonstrated that place attachment explained more variance in the opposition to a major hydroelectric plant than all the demographics put together. So, while people's ability to form and sustain attachments to place depends on the survival of the setting, the survival of the setting may also depend on those attachments.

While generally regarded as a more superficial neighborhood construct than place attachment, neighborhood satisfaction is also related to residents' involvement in preserving their neighborhoods, such that those who actively participate in neighborhood beautification and preservation programs are more pleased with their environments. For example, Sommer (1996) found that residents who planted city trees themselves were happier with their appearance than when they were planted by city workers, and Nannini, Sommer, and Meyers (1998) found that residents who volunteered to monitor trees for a fatal and highly contagious disease in their Sacramento neighborhoods experienced more neighborhood satisfaction than those who did not participate in the program.

Present Study

Risk will always be inherent in industrial operations, as it is in many other facets of modern life. People routinely consider the offsetting benefits to exposing themselves to certain risks. For example, jobs that are particularly dangerous or that risk ill health effects tend to pay more in our society than jobs that are less so. In accepting or deciding to pursue such a line of work one accepts the respective risks in exchange for financial incentives. The ethics of exposing people to industrial risks should be considered within this context, and Lambert and Boerner (1997) have provided a good framework for doing this by advocating that compensations be used to equalize potential risks by improving the existing quality of life.

The present study develops the idea of negotiated compensation further in an effort to address the issue of environmental justice more completely by generalizing its execution in poor communities to communities that are not suffering economically. The philosophy of environmental justice is based on the notion that one group of people should not have to bear the environmental burdens of modern life more than any other group. In order for negotiated compensation to succeed in providing an economic solution for environmental justice it must prove its applicability in communities of all socioeconomic levels.

Paired comparisons. A computerized paired comparisons interactive program (Peterson et al. 1994, 1996) is the mechanism by which negotiated compensation was examined in this study. Paired comparisons provides a useful tool for establishing a continuum of values among a list of goods, and it is especially applicable for goods that do not traditionally have a market value. It allows respondents to simplify complex decision tasks by narrowing the decision to pairs of goods or losses or, in this study, community compensations. Each item in a set is paired with all the other items in a set, and the

respondent chooses the preferred item in each pair. A dominance score is calculated for each item by counting the number of times it is chosen over the other items, and the collective dominance scores represent an ordinal scale of preferences within the set of items. Recent work with the method has revealed that paired comparisons is robust with respect to context effects (Brown et al., 2002; Clarke, Bell, & Peterson, 1999), and that it produces a reliable scale of willingness to accept compensation for a lost good. In the current study a scale of eight potential compensations/outcomes was derived for each participant using the paired comparisons method. Willingness to accept one or more of these compensations was then assessed for three potentially undesirable facilities to be located in the neighborhood.

Expected outcomes. First, a general expectation was that some "undesirable" facilities would be more acceptable than others. Second, it was expected that some compensations would be more valued than others. The feasibility of negotiated compensations would be demonstrated by showing that a sizeable percentage of respondents would accept a facility for the right compensation. It would be particularly informative to identify predictors of willingness to accept compensation. Thus, a third expectation was that socioeconomic status would be a moderating variable, such that higher income residents would be less likely to accept any negotiated compensation. Lower income residents, on the other hand, were expected to be more willing to accept compensation for undesirable facilities in their neighborhood. To the extent that negotiated compensation may be viable only in lower-income neighborhoods or communities, it cannot be relied upon as a solution to environmental injustice.

Fourth, it was expected that a discriminant function could be derived that would identify characteristics of residents who would accept compensation for an environmentally undesirable facility, versus those who would not accept compensation. Other variables that

were expected to be important to the success of negotiated compensation were neighborhood satisfaction and place attachment. Specifically, a fifth expectation was that those who were less satisfied with their neighborhoods but who had greater place attachment would be the best candidates for negotiated compensation. Less satisfied residents might believe that the state of their neighborhoods could be improved. Where there is a desire for improvement, negotiation seems a more likely proposition. Yet, neighborhood dissatisfaction alone should not be adequate if there is not an investment in or an emotional tie to the neighborhood. Otherwise, the residents could too easily opt to move out of the neighborhood and an undesirable development project could be the last straw that might motivate them to do so.

Chapter 2

Method

Pilot Study

A pilot study was used to develop the stimulus materials. Three separate focus groups were assembled to represent neighborhoods that varied in socioeconomic status (SES). Two of the groups contained 6 participants and one of the groups contained 7 members, for a total of 19 focus group participants. The focus group meetings lasted between 1.0 and 1.5 hours.

Focus group participants were presented with a worksheet (Appendix A), which they completed individually. The worksheet task required that participants imagine a hypothetical development project two blocks from their homes. A list of 15 prospective facilities to be built followed the hypothetical scenario. For each facility, participants indicated whether they would, would not, or might object to it being built in their neighborhood. Appendix B contains participants' responses to the facilities, collapsed across the three groups. There did not appear to be any systematic differences with respect to SES.

For the main study three facilities were selected from the list to represent varying levels of nuisance. The specific facilities that were designated were similar in that they all represented an environmental threat. In order of least nuisance to most nuisance the specific facilities that were chosen were a plant nursery, a recycling center, and a small cement plant. Thirteen of 19 participants considered a plant nursery completely acceptable; 6 of 19 considered the recycling center potentially acceptable with 3 and 10 others indicating that it

was acceptable and unacceptable, respectively; and 17 of 19 participants considered the cement plant to be unacceptable.

Focus group discussions concluded with participants identifying neighborhood compensations. Neighborhood compensations were described by the focus group facilitator as anything that the facility might bestow to the neighborhood or its residents in exchange for their acceptance. Appendix C contains some of the compensation suggestions that were derived from each of the three focus groups. The specific compensation suggestions were modified for the main study, so that they were applicable to neighborhoods of all income levels.

Participants

The sample population represented members from churches and non-profit organizations located in Fort Collins, CO. The organizations included St. Elizabeth Ann Seton Catholic Church, Blessed John XXIII Catholic University Center, Fort Collins Mother's Center, the Family Center, and the Fort Collins Lion's Club. Participants responded to a verbal solicitation to participate in a project that was described as an investigation of residents' perception of development in their community. In exchange for participation, the church or organization of which the participant was a member was given $10. No more than 50 participants were sampled from any one group.

Solicitations were made to local churches and non-profit organizations because monetary compensation was used in this study and it was important that money not motivate individuals differentially as a function of SES. By donating the money to their church or organization, it was expected that participants would be equivalently rewarded for their contribution.

Some 140 respondents participated (49 men, 86 women), although due to missing data not all analyses contain the full sample. Ages ranged from 19 to 89 years (M = 48.02, SD = 17.56). The sample was predominantly white with 84.3% identifying themselves as white (n = 113), 9.7% as Mexican American (n = 13), 0.7% as African American (n = 1), 0.7% as Asian American (n = 1), and 4.5% as being of an other ethnic origin (n = 6). The demographics of the sample population as a function of data collection site are contained in Table 2.1. While significant differences existed for all demographic variables, no group was systematically different across all variables from any of the other groups.

Eighty percent of the participants were homeowners (n = 112), and the sample population lived in their neighborhoods for an average of 8.72 years (SD = 8.60). A little over half of the sample (n = 74) had children under the age of 18 years living in their households. Resident characterizations of the sample as a function of group membership are contained in Table 2.2. Lion's Club members resided in their current neighborhood the longest, and the Family Center had the most renters.

Table 2.2
Resident characterizations of sample population as a function of data collection site

Collection Site	Time in Neighborhood (yrs.)		Resident Status (n)		Kids at Home (n)	
	M	SD	Rent	Own	No	Yes
St. Elizabeth Ann Seton Church[a]	6.75[e]	4.35	3[d]	30	19[bcde]	13
John XXIII Church[b]	3.03[e]	3.02	2[d]	12	0[ae]	14
Fort Collins Mother's Center[c]	6.85[e]	5.48	2[d]	21	1[ae]	22
Family Center[d]	6.21[e]	5.97	16[abce]	13	7[ae]	21
Fort Collins Lion's Club[e]	15.41[abcd]	11.64	3[d]	36	34[abcd]	4
F for effect of group	11.16**		10.04**		29.58**	
df	(4, 129)		(4, 133)		(4, 130)	
η^2	.26		.23		.48	

Note. *p < .05. **p < .01. Superscripts indicate groups that are significantly different (p < .05) from the result shown.

Table 2.1
Demographics of sample population as a function of data collection site

Collection Site	Gender		Age		Ethnicity		Political Position			
							Social Issues		Economic Issues	
	Male	Female	*M*	SD	White	Non-white	*M*	*SD*	*M*	*SD*
St. Elizabeth Ann Seton Church[a]	9[e]	23	48.82[bcde]	13.59	29[d]	4	3.33	1.05	3.33	1.08
John XXIII Church[b]	0[e]	14	34.69[ae]	5.92	13[d]	1	2.57[ce]	0.76	3.08	0.64
Fort Collins Mother's Center[c]	4[e]	19	38.91[ae]	7.67	21[d]	2	3.78[bd]	1.09	3.74	1.10
Family Center[d]	3[e]	25	33.96[ae]	10.64	15[abce]	12	2.93[ce]	0.96	3.00[e]	0.98
Fort Collins Lion's Club[e]	33[abcd]	5	67.26[abcd]	13.34	35[d]	2	3.65[bd]	0.86	3.74[d]	0.86
F for effect of group	27.95**		45.45**		6.27*		5.67**		3.43*	
df	(4, 130)		(4, 131)		(4, 129)		(4, 129)		(4, 130)	
η^2	.46		.58		.16		.15		.10	

Note. Political position was self-reported on a summative response scale from 1 (*liberal*) to 5 (*conservative*). *$p < .05$. **$p < .01$. Superscripts indicate groups that are significantly different ($p < .05$) from the result shown.

Materials and Procedure

Arrangements for data collection were made ahead of time to attend an already scheduled function for the respective organizations and churches. Participants made their responses on a laptop computer. Up to five respondents participated at a time. The instructions for participation were contained entirely on the computer, so participants were told to start whenever they were prepared to begin. The measures were presented in the following order and are described in detail in subsequent sections: measurement of neighborhood satisfaction, measurement of place attachment, paired comparisons task, task requiring respondents to indicate acceptable minimum compensation for three specific facilities varying in degree of perceived nuisance, debriefing, and demographic questions. The study took approximately 20 min. for each participant to complete.

Neighborhood Satisfaction Scale. An 8-item instrument used to measure neighborhood satisfaction was adapted from the neighborhood attractiveness factor of Gruber and Shelton's (1987) Resident Satisfaction Scale. The specific items of the neighborhood satisfaction instrument appear in Table 2.3.

Place Attachment Scale. Two dimensions of place attachment were adapted from Brown, Perkins, and Brown (in press). Place attachment to respondents' house and the appearance of their yard was assessed using three items, which are shown in Table 2.3. To assess a broader level of attachment to the residential block and neighborhood four more items (Table 2.3) were asked of respondents. One item for the second dimension was reverse scored, so that it coincided with the direction of the other items. Scores for each subscale were determined by averaging responses for each subscale's respective items. A composite score for an overall measurement of place attachment was obtained by averaging the two subscale scores (house and neighborhood).

Table 2.3
Neighborhood Satisfaction and Place Attachment Scale Items

Instrument/Questions	Number of Items	Response Scale	Cronbach's Alpha
Neighborhood Satisfaction	8	1 (*very dissatisfied*) – 7 (*very satisfied*)	α = .92 (Nannini, Sommers, & Meyers, 1998)
Amount of open space			
Quiet			
As a place to raise children			
Amount of greenery			
Friendliness of neighborhood			
Safety of Neighborhood			
Attractiveness of neighborhood			
Amount of Privacy			
Place Attachment			
to house and yard	3	1 (*not at all proud*) – 7 (*extremely proud*)	α = .90 (Brown, Perkins, & Brown, in press)
Pride in house			
Pride in the way yard looks			
Pride in way outside of house looks			
to block and neighborhood	4		α = .80 (Brown, Perkins, & Brown, in press)
Pride in neighborhood		1 (*not at all proud*) – 7 (*extremely proud*)	
Pride in block		1 (*not at all proud*) – 7 (*extremely proud*)	
How attached do you feel to block		1 (*not at all attached*) – 7 (*strongly attached*)	
How would feel if had to move		1 (*very unhappy*) – 7 (*doesn't make any difference*)	

Paired comparisons task. Prior to beginning the paired comparisons task, participants were asked to imagine the following hypothetical situation:

> Imagine that a 4-acre empty lot is located two blocks from your home. The lot was recently sold to a developer who plans to build a facility that, in the past, has raised concerns among residents regarding health and environmental safety. The facility will institute the best available equipment to minimize risks to residents' health and to the environment. The developer will also plant a greenbelt around the facility to minimize noise and to contribute to the aesthetics of the neighborhood. In addition, the developer would like to make a good-neighbor-gesture by giving something to your neighborhood. On the following screens, the gestures are presented two per screen. For each screen please click to indicate which of the two gestures you would prefer. Examples of what each gesture might include are indicated in parentheses.

The paired comparisons task required that participants make a series of choices between all of the possible pairings of seven compensations and one no-compensation option (Table 2.4). The compensations were selected for use in this study based on discussions with

Table 2.4
Seven Compensations and One No-compensation Option Included in Paired Comparisons Task

Compensation Options
Free cable/satellite TV service with unlimited packages as long as you live in the neighborhood
Traffic improvements to the neighborhood streets (such as, widen streets, install speed bumps, and/or streetlights/stop signs to slow traffic)
Facilities/activities for neighborhood children (such as, neighborhood pool with a paid-for lifeguard, basketball courts, tennis courts, and/or state of the art playground)
New or expanded neighborhood park (such as, athletic fields, gated dog-run, and/or picnic facilities)
Improved security and police services in the neighborhood (such as, more patrols, and/or diversity training for officers)
Large donation to charity or non-profit organization in your name
Beautification program for neighborhood (such as, the planting of large trees and flowers to create promenade, and/or litter clean-up service for neighborhood streets and residents' front yards)
No-compensation Option
I would prefer to move out of the neighborhood rather than accept the gesture shown.

participants in the pilot study. Compensations were broadly worded so that they appealed to the interest of different demographic groups. With seven compensation options and one no-compensation option, participants made a total of 28 choices.

Minimum acceptable compensation for nuisance facilities. Upon completion of the paired comparisons task, participants were asked to indicate the minimum compensation they would accept for each of three specific neighborhood development projects that varied in degree of nuisance. In the order of least nuisance to most nuisance the facilities were a plant nursery, a recycling center, and a small cement plant. The physical space that each facility was projected to encompass (4 acres) was consistent across the three development projects.

For each of the three facilities separately, individuals responded by checking a box for each of the compensation options that had appeared previously in the paired comparisons task (Table 2.4), indicating which of the compensations would be an acceptable trade-off for the respective facilities. The compensation options were presented for each respondent individually in a list in order of most preferable to least preferable based on the preference scores that were derived from the paired comparisons task. In all, each respondent evaluated the same list of compensations in the order specific to their personal preferences three times—one for each nuisance facility. The specific facilities were presented to participants in a randomized block order.

The no-compensation option from the paired comparisons task that read, "I would prefer to move out of the neighborhood rather than accept the gesture shown" was omitted from the lists in this task, as it seemed like an awkward choice given the instructions to check off which compensations were an acceptable trade-off from the facilities in question.

If indeed the no-compensation option was the desired course of action, respondents were instructed to leave all of the boxes unchecked.

Debriefing questions. The debriefing questions were designed to complement the preference scores that were derived from the paired comparisons task in that they provided a more complete understanding of the needs that were or were not already being satisfied in the respondent's neighborhood. They consisted of asking how important each of the compensation options was to the respondent or their household. There were seven questions in all, and respondents were asked to indicate the importance of each on a scale that ranged from 1 (*extremely important*) to 7 (*not very important*).

This information provided additional insight into why specific compensations may or may not have been highly preferred in the paired comparisons task. For example, if a neighborhood already contained a neighborhood pool or good facilities for its children, a respondent from that neighborhood would have been less likely to prefer that particular compensation from a developer in the paired comparisons task over other possible compensations. In regard to the preference score for this specific compensation, the score may be low even though it was deemed to be of high importance to respondents. The value of this information is such that, the fact that individuals prefer one compensation over another may be a function of the needs that are or are not currently being met in their neighborhood rather than resistance to accept any gesture from a developer based on principle.

Demographic questions. Demographic questions (Table 2.5) were designed to quantify and describe the sample population as well as provide variables to test the hypotheses. A series of open-ended occupation-related questions (Hauser & Warren, 1997) was included in the demographic questions to determine SES.

Table 2.5
Demographic Questions in Order

Questions	Response Scale/Options
Gender	male; female
Ethnicity	White; Mexican-American; Black; Asian-American; other
Age	specific numeric value
Number children living at home	specific numeric value
Length of residency in current neighborhood	specific numeric value
Liberal/Conservative on Social Issues	1 (*liberal*) – 7 (*conservative*)
Liberal/Conservative on Economic Issues	1 (*liberal*) – 7 (*conservative*)
Residential status	rent; own
Amount rent/mortgage paid per month	specific numeric value
Zip code	specific code
Occupation-related questions	open-ended
What kind of work does the primary wage-earner in your household do? (For example, electrical engineer, stock clerk, typist, farmer)	
What are the primary wage-earner's most important activities or duties at that job? (For example, types, keeps account books, files, sells cars, operates printing press, finishes concrete)	
What kind of business or industry is this? (For example, TV and radio, manufacturing, retail show store, State Labor Department, farm)	
Is the primary wage-earner an employee of a private company, business, or individual for wages, salary, or commission? a federal government employee? a state government employee? self-employed in own business, professional practice, or farm? working without pay in a family business or farm?	
Are you retired? a student? a welfare recipient? or none of the above?	

SES. The Hauser-Warren Socioeconomic Index (Hauser & Warren, 1997) was used to determine socioeconomic status (SES). The index is based on occupational title that is derived from a logit transformation of occupational education (percentage of people in an occupation who had completed one or more years of college) and occupational wage rates (percentage of people in an occupation who earned $14.30 per hour or more) from 1990 Census data. Scores ranged from 0 to 100, with higher scores representing higher SES.

Occupational title was determined by matching the text of five occupation-related questions (Table 2.5) for the primary wage earners in each household to listings in the Census Bureau's Alphabetic Indexes of Industries and Occupations (U.S. Bureau of the

Census, 1992). The Dictionary of Occupational Titles (U.S. Department of Labor, 1991) was used as an additional reference to learn more about specific occupations or to find synonyms for unfamiliar descriptions. One of 498 occupational titles was assigned to each respondent's household to represent SES.

Chapter 3

Results

Measures of Acceptability: Are Some Facilities More Acceptable Than Others?

A separate measure of acceptability was computed for the plant nursery, the recycling center, and the small cement plant by summing up the number of neighborhood compensations that respondents indicated they would accept from the respective facilities. Table 3.1 contains the means and standard deviations for each of the three acceptability measures. None of the three facilities proved to be unequivocally acceptable in that they

Table 3.1
Means and Standard Deviations for the Acceptability of the Three Specific Nuisance Facilities

Nuisance Facility	*M*	*SD*
Plant Nursery	3.09	2.17
Recycling Center	1.96	2.34
Small cement plant	1.39	2.01

Note. Values ranged from 0 to 7.

seemed to be acceptable only with respondents' top compensation preferences. A within subjects analysis of variance indicated that the acceptability of the facilities varied significantly from each other, with the plant nursery being the most acceptable and the cement plant the least acceptable, $F(2, 138) = 43.62, p = .00, \eta^2 = .31$.

A series of one-way analyses of variance was used to test the effect of order of presentation on the acceptability of each of the three facilities. There were no order effects for the presentation of either the recycling center, $F(2, 137) = 1.48, p > .05$, or the cement

plant, $F(2, 137) = 0.47, p > .05$. Order effects did, however, exist for the presentation of the plant nursery, $F(2, 137) = 4.27, p = .02, \eta^2 = .06$. A Tukey post-hoc test indicated that respondents found the plant nursery more acceptable ($M = 3.71$, $SD = 2.07$) when it was presented first than when it was presented second ($M = 2.59$, $SD = 2.24$) or third ($M = 2.69$, $SD = 2.09$). There were no significant differences in its acceptability between the second and third presentation. Because the facilities were presented in a randomized block order, the effect of order on the measure of acceptability for the plant nursery was evenly distributed across participants.

Distributions of population for each of the acceptability measures are contained in Figures 3.1 – 3.3.

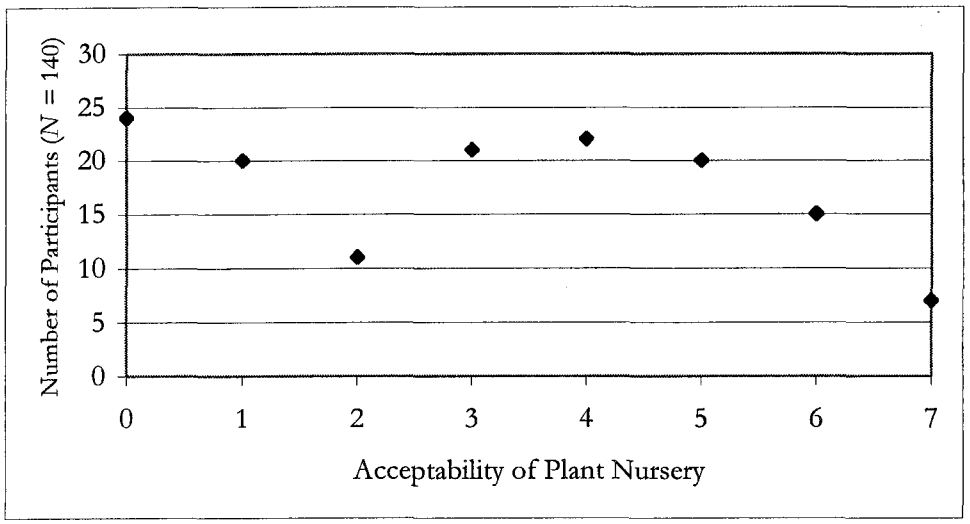


Figure 3.1
Distribution of Sample Population for Measure of Plant Nursery Acceptability

Preference Scores: Are Some Compensations More Desirable Than Others?

In the paired comparisons task, each compensation option was compared with the other 7 options, and thus could be preferred a maximum of 7 times and a minimum of 0 times. For ease of presentation, a value of 1 was added to the preference score for each compensation option. As a result, the value of preference scores ranged from 1 to 8. A

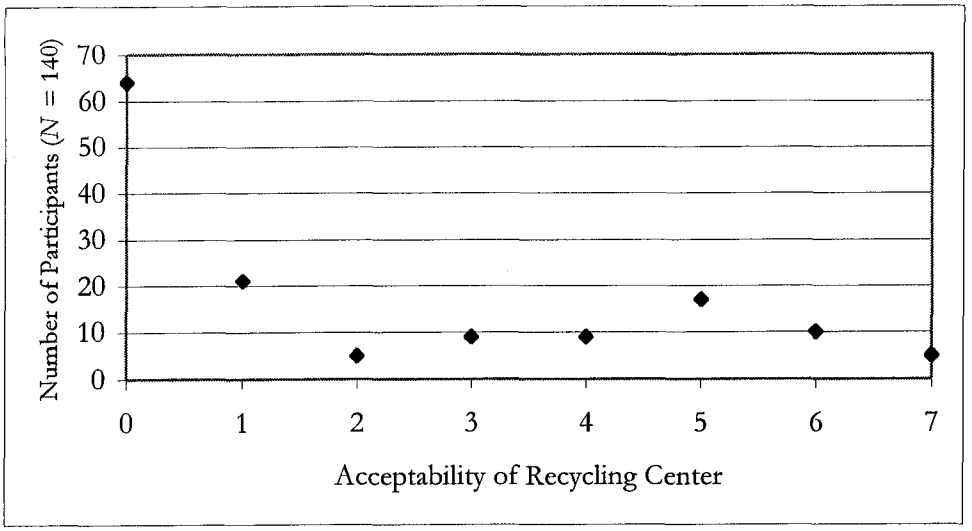


Figure 3.2
Distribution of Sample Population for Measure of Recycling Center Acceptability

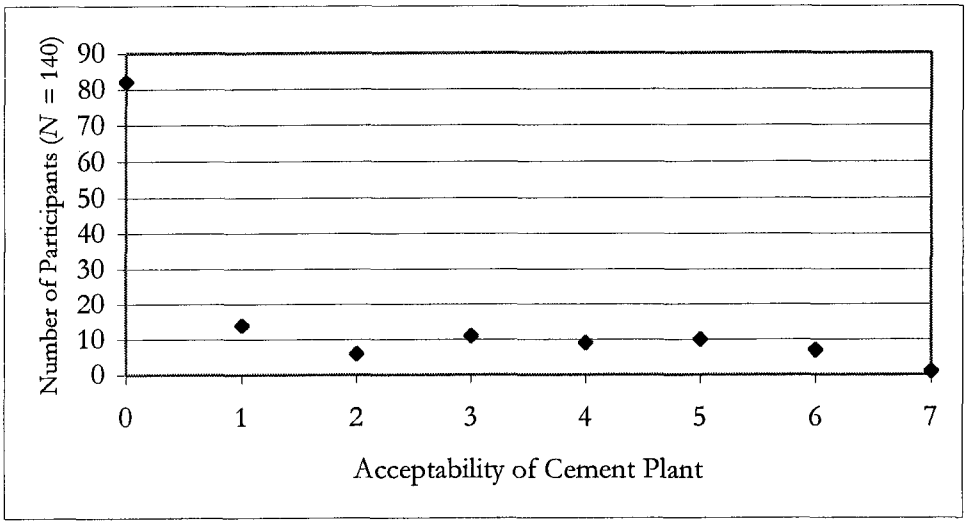


Figure 3.3
Distribution of Sample Population for Measure of Cement Plant Acceptability

respondent's vector of the number of times each compensation was chosen above the others represents the set of preference scores. Table 3.2 contains the means and standard deviations for each of the 8 compensation options. The most preferred neighborhood compensation option was facilities or activities for neighborhood children followed by a beautification program for the neighborhood. The least preferred compensation options were the no-

Table 3.2

Means and Standard Deviations for Neighborhood Compensation Preference Scores and Debriefing Questions on the Importance of Each Compensation and Correlations Between Respective Preference Scores and Importance

	Preference Scores		Importance of Compensations			difference value	
Compensations	*M*	*SD*	*M*	*SD*	*r*	*M*	*SD*
Facilities or activities for neighborhood children	6.18	1.58	5.00	1.64	.47**	-0.82	1.66
Beautification program for neighborhood	5.76	1.57	4.90	1.52	.27**	-1.14	1.87
New or expanded neighborhood park	5.61	1.60	4.65	1.60	.31**	-1.04	1.88
Traffic improvements to neighborhood streets	4.79	1.80	4.36	1.74	.49**	-1.57	1.80
Improved security and police services in neighborhood	4.41	1.79	4.30	1.69	.54**	-1.89	1.66
Large donation	3.36	1.83	3.12	1.97	.63**	-1.76	1.63
Free cable or satellite TV service	3.12	1.97	2.62	1.84	.56**	-1.50	1.78
Prefer to move out of the neighborhood	2.93	2.36	--	--	--	--	--

Note. Preference score values ranged from 1 to 8, with higher values indicating a greater preference. The summative response scale for the importance of each compensation ranged from 1 (*not important at all*) to 5 (*extremely important*). **$p < .01$.

compensation option in which respondents would opt to move out of the neighborhood rather than accept a compensation followed by free cable or satellite TV service.

The means and standard deviations for the debriefing questions about the importance of each of the compensation options are also contained in Table 3.2. Each question was significantly and positively correlated with its respective preference score indicating that the preference scores were consistent with how important respondents felt each compensation was to him- or herself and the members of his or her household (Table 3.2).

However, given that no correlation between the preference score and the importance of the respective compensation exceeds a value of .63, it is apparent that the preference score and the importance of the compensations are not measuring the exact construct. This suggests that while an individual may have found a specific compensation item extremely important, he or she did not necessarily choose or prefer it as a compensation in the paired comparisons task. This is likely due to the fact that the need or desire for this compensation item is already satisfied and thus, would not be a viable compensation for that particular person or his or her neighborhood.

A measure of the difference between the preference scores and the respective debriefing questions that measured the importance of the compensations was computed by subtracting the importance value from the preference score. Because the scales for these two variables varied by two points, a value of two was subtracted from the difference. As a result, a difference of zero indicated that there was perfect agreement between the preference score and the importance indicated by the respondent. Negative values were indicative of the deemed importance exceeding the preference. Table 3.2 contains the means and standard deviations for the difference values for each of the compensation options. All of the

compensations were deemed to be more important than they were preferred in the paired comparisons task.

Computed Variables

Neighborhood Satisfaction Scale. Values for the measure of neighborhood satisfaction were determined by averaging responses for each of the 8 items of which the instrument consisted (Table 3.3). Scores ranged from 1 to 7 with higher numbers

Table 3.3
Means and Standard Deviations for Neighborhood Satisfaction Scale Items

Item	*M*	*SD*
Open space	4.58	1.68
Quiet	4.76	1.62
Place to raise children	5.19	1.62
Greenery	5.14	1.58
Friendliness	4.97	1.63
Safety	5.26	1.32
Attractiveness	4.91	1.52
Privacy	4.94	1.47
Overall neighborhood satisfaction	4.96	1.12

Note. The summative response scale for each item ranged from 1 (*not at all satisfied*) to 7 (*extremely satisfied*). The measure of overall neighborhood satisfaction was computed by averaging the eight scale items.

representing greater neighborhood satisfaction. A little over 79% of respondents were moderately to extremely satisfied with their neighborhood.

Figure 3.4 contains the distribution of the sample population on the measure of neighborhood satisfaction. For this sample, Cronbach's alpha for the measure of neighborhood satisfaction was .86, with inter-item correlations ranging from .28 to .61.

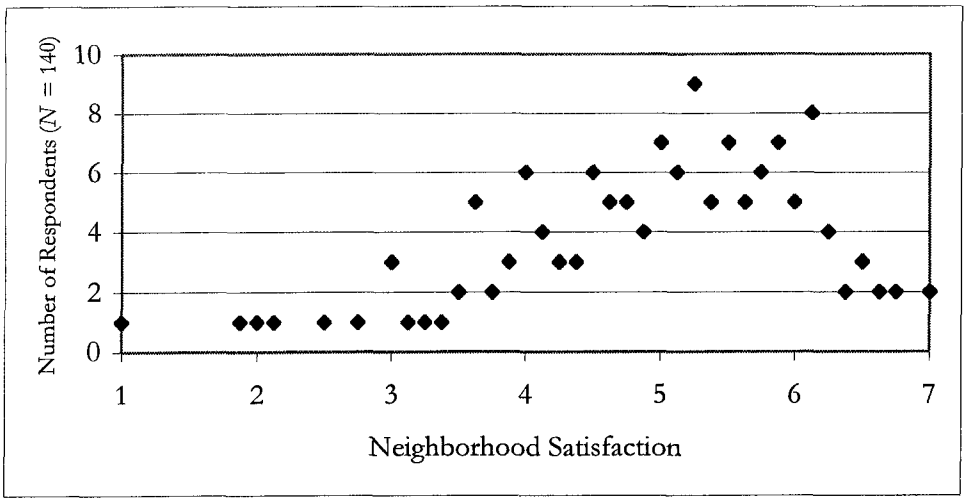


Figure 3.4
Distribution of Sample Population for Measure of Neighborhood Satisfaction

Place Attachment Scale. Values for the place attachment to house (3 items) and place attachment to neighborhood (4 items) subscales were determined by averaging responses for each subscale's respective items (Table 3.4). A composite score for an overall measurement of place attachment was obtained by averaging the two subscale scores. Values ranged from 1 to 7 with higher values representing greater place attachment. One item in the place attachment to neighborhood subscale was reverse worded and the values were recoded before computing the subscale and overall place attachment values.

Cronbach's alpha for each subscale and the overall measure of place attachment are contained in Table 3.4. Inter-item correlations ranged from .22 to .88. Figures 3.5 – 3.7 contain the distribution of the population along each of the place attachment subscales and on the overall measure of place attachment.

Table 3.4
Means, Standard Deviations, and Cronbach's Alpha for Place Attachment Scale Items

Item	*M*	*SD*	α
House (3 items)	5.34	1.27	.86
House	5.60	1.34	
Yard	5.15	1.57	
Outside of House	5.27	1.40	
Neighborhood (4 items)	4.96	1.14	.79
Neighborhood	5.07	1.30	
Block	5.04	1.37	
Attached to Block	4.69	1.54	
(un)Happy to move	5.03	1.58	
Overall Place Attachment (2 items)	5.15	1.05	.69

Note. The summative response scale for each item ranged from 1 (*not at all proud*) to 7 (*extremely proud*) or 1 (*not at all*) to 7 (*extremely*). Scale values were determined by averaging the respective items.

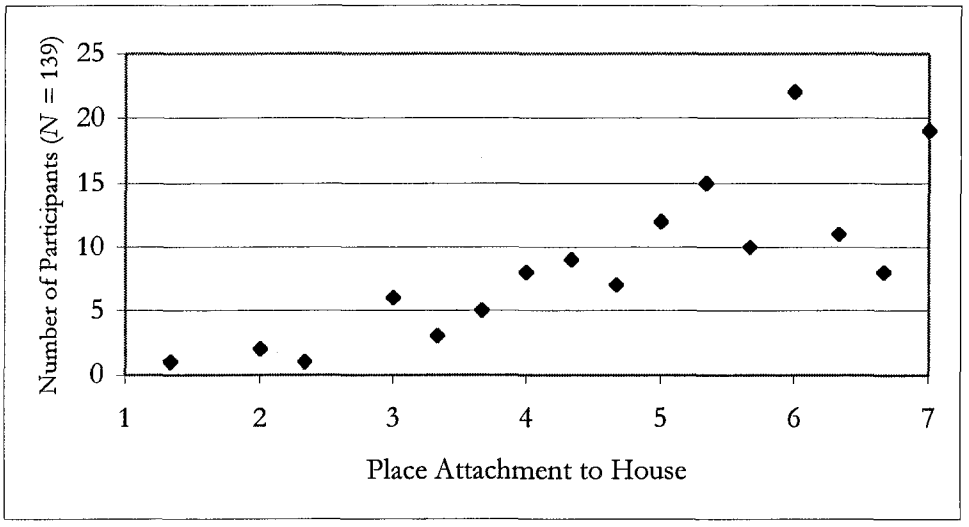


Figure 3.5
Distribution of Sample Population for Measure of Place Attachment to House

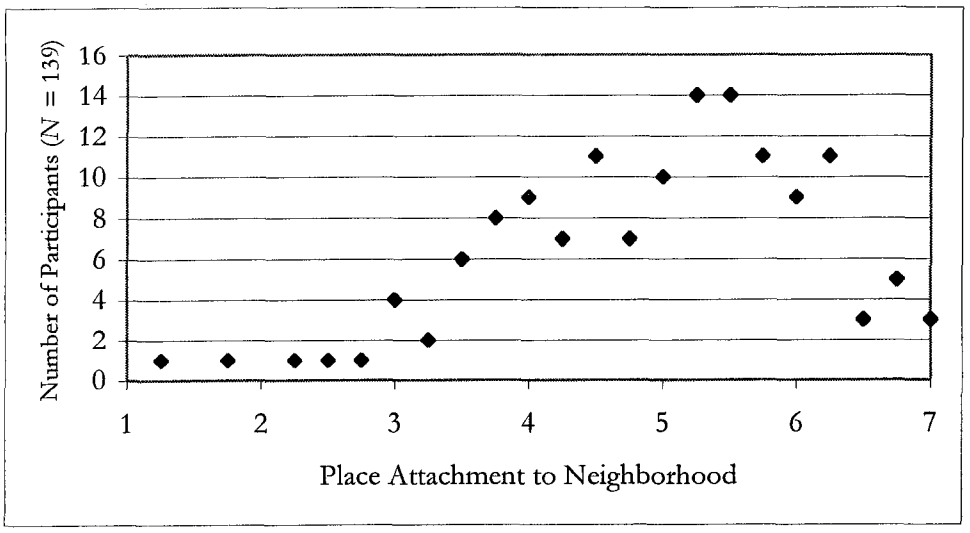


Figure 3.6
Distribution of Sample Population for Measure of Place Attachment to Neighborhood

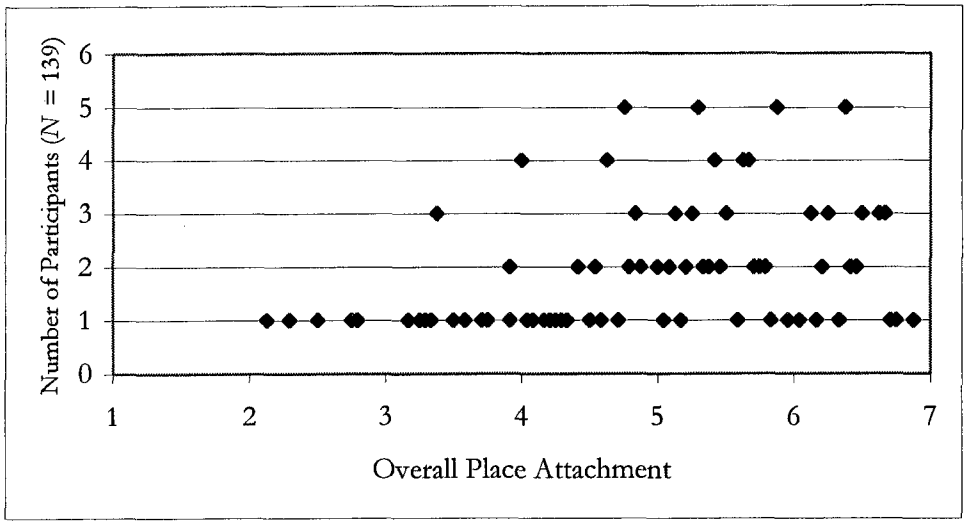


Figure 3.7
Distribution of Sample Population for Measure of Overall Place Attachment

Correlations

Neighborhood variables. Pearson-*r* correlations for the measure of neighborhood satisfaction and the measures of place attachment are contained in Table 3.5. Individuals who were more satisfied with their neighborhoods tended to display greater place attachment to their homes and neighborhoods and to have greater overall place attachment.

Table 3.5
Correlations of Neighborhood Satisfaction and Place Attachment Measures

Measures	Place Attachment		
	House	Neighborhood	Overall
Neighborhood Satisfaction	.39**	.72**	.62**
Place Attachement to House		.53**	.89**
Place Attachment to Neighborhood			.86**

Note. **p < .01. $N = 139 - 140$.

In addition to the resident information that was presented in the description of the sample population, participants were self-characterized on their political position regarding social and economic issues. Values ranged from 1 to 5, with higher values representing a more conservative political position. This sample described themselves as moderate to moderately conservative on both social ($M = 3.34$, $SD = 1.03$) and economic issues ($M = 3.42$, $SD = 1.00$).

Table 3.6 shows Pearson-*r* correlations of the neighborhood satisfaction and place attachment variables and resident variables. Older respondents, those owning their homes, and those without children at home tended to have a greater sense of place attachment than those who were younger, were renting, or who had children living at home.

Acceptability measures. The continuous acceptability measures were dichotomized to identify and separate individuals who were willing to accept compensation from those who were unwilling to accept any compensation for the plant nursery, recycling center, and cement plant. This new dichotomized variable is referred to as a measure of willingness and was intended to be used as an alternative to the acceptability measures, which seemed to be at risk for range restriction.

Table 3.6
Correlations of Neighborhood Variables and Resident Variables

Variables	Neighborhood Satisfaction	Attachment to House	Attachment to Neighborhood	Overall Place Attachment
Age	.14	.32**	.23**	.32**
Gender	.04	-.16	-.06	-.13
SEI	.14	.17	.14	.17
Time in neighborhood	-.01	.09	.04	.08
Residential Status (rent/own)	.09	.29**	.19*	.28**
House payment	.07	.03	.13	.09
Children in home (n/y)	-.10	-.25**	-.20*	-.25**
Political Position				
Social issues	-.09	.05	-.12	-.03
Economic issues	-.02	.07	-.11	-.02

Note. For the SEI variable, higher values indicated higher socioeconomic status. Higher values on the political position variables indicated a more conservative perspective. For the dichotomized kids at home variable, higher values indicated that children under 18 yrs. were present in the home. For the dichotomized rent/own variable, higher values indicated home ownership. *$p < .05$. **$p < .01$. $N = 134 - 140$.

The sample sizes for this new, dichotomized willingness variable are contained in Table 3.7. Just under 83% of respondents were willing to accept at least one neighborhood

Table 3.7
Sample Sizes for Willingness to Accept Compensation Variable

	Willing to Accept Compensation	
Facility	Yes (*n*)	No (*n*)
Plant Nursery	116	24
Recycling Center	76	64
Cement Plant	58	82

compensation option for the plant nursery, 54.3% were willing to accept at least one compensation from the recycling center, and 41.4% were willing to accept at least one compensation from the cement plant.

Pearson-*r* correlations between the original acceptability measures and their respective dichotomized willingness variables ranged from .65 to .82 (Table 3.8).

Table 3.8
Correlations Between Original Acceptability Measures and Respective Willingness Variables

	Willingness to Accept Compensation		
Acceptability Measures	Nursery	Recycling	Cement
Plant Nursery	.65**	.37**	.29**
Recycling Center	.28**	.77**	.45**
Cement Plant	.15	.37**	.82**

Note. For the dichotomized willingness variables, higher values indicate a willingness to accept at least one compensation from the respective facilities. $^{**}p < .01$.

As indicated by the correlations in Table 3.8, those who were willing to accept compensation for the nursery tended to find the recycling center but not the cement plant more acceptable than those who were not willing to accept compensation for the nursery. Additionally, those who were willing to accept compensation for either the recycling center or the cement plant were more likely to find the other two facilities, excluding itself, more acceptable than were those who were not willing to accept compensation for the recycling center or the cement plant.

Table 3.9 contains Pearson-*r* correlations for the three willingness variables and neighborhood and resident variables. Younger respondents were more willing to accept compensation from the nursery and recycling center than were older respondents.

Move-out variables. Because there were so few of the expected relationships between the willingness to accept compensation variables and the neighborhood measures, two additional measures were examined. The first was the preference score for the no-compensation option in which respondents indicated that they would opt to move out of the neighborhood rather than accept compensation. The second measure that was examined was an item from the Place Attachment scale that inquired about how happy residents would be to move out of their neighborhoods. This item was originally reverse worded and had been

Table 3.9

Correlations of Willingness to Accept Compensations and Neighborhood and Resident Variables

Variables	Willingness to Accept Compensation		
	Plant Nursery	Recycle Center	Cement Plant
Neighborhood Satisfaction	-.15	-.02	-.02
Place Attachment to House	-.09	.00	-.02
Place Attachment to Neighborhood	-.14	.06	.07
Overall Place Attachment	-.03	.03	.03
Age	-.18*	-.27**	-.13
Gender	.08	.13	-.01
SEI	-.03	-.06	-.02
Time in neighborhood	.01	-.13	-.12
Residential status (rent/own)	-.01	-.03	-.08
House payment	-.12	.03	.13
Children in home (n/y)	.06	.12	-.04
Political Position			
social issues	.02	-.12	.07
economic issues	.12	-.11	.05

Note. For the dichotomized willingness variables, higher values indicate a willingness to accept at least one compensation from the respective facilities. For the neighborhood measures, higher values indicate more adherence to the measure. For the dichotomized gender variables, males were assigned a value of 1 and females a value of 2. For the SEI variable, higher values indicate higher socioeconomic status. For the dichotomized rent/own variable, higher values indicate home ownership. For the dichotomized children at home variable, higher values indicate that children under 18 yrs. were present in the home. Higher values on the political position variables indicate a more conservative perspective. $*p < .05$. $**p < .01$. $N = 134 - 140$.

recoded to correspond with the direction of the other items on the scale. For its present consideration it was evaluated in its original form, as its original (non-recoded) values corresponded to the direction of the no-compensation preferences score. As a result higher values for both of the move-out items indicated a greater willingness to move out of the neighborhood. There was no relationship between these two move-out items, $r = .01, p > .05$.

The preference score for the no-compensation option was assumed to be related to the willingness variables but unique in that it was not related to any one specific facility as it

was derived from the paired comparisons task. The Pearson-*r* correlations for the no-compensation preference score and neighborhood and resident variables and willingness to accept variables are contained in Table 3.10. As would be expected, those who were more

Table 3.10
Correlations of Willingness to Move-out and Neighborhood and Resident Variables

Variables	Move-out Variables		
	No-compensation option	Happy to move	Composite move-out
Neighborhood Satisfaction	-.03	-.27**	-.23**
Place Attachment to House	-.09	-.32**	-.31**
Place Attachment to Neighborhood	.00	-.63**	-.51**
Overall Place Attachment	-.06	-.53**	-.46**
Age	-.17*	-.24**	-.29**
Gender	.13	.19*	.23**
SEI	-.02	.04	.01
Time in neighborhood	-.10	-.09	-.13
Residential status (rent/own)	-.05	-.16	-.16
House payment	.05	-.11	-.56
Children in home (n/y)	.21	.26**	.34**
Political Position			
social issues	-.01	.11	.08
economic issues	-.04	.12	.07
Willingness to Accept Compensation			
Plant Nursery	-.34**	.13	-.10
Recycling Center	-.23**	-.04	-.17*
Cement Plant	-.21*	-.12	-.22*

Note. For the dichotomized willingness variables, higher values indicate a willingness to accept at least one compensation from the respective facilities. For the neighborhood measures, higher values indicate more adherence to the measure. For the dichotomized gender variables, males were assigned a value of 1 and females a value of 2. For the SEI variable, higher values indicated higher socioeconomic status. For the dichotomized rent/own variable, higher values indicated home ownership. For the dichotomized children at home variable, higher values indicated that children under 18 yrs. were present in the home. Higher values on the political position variables indicated a more conservative perspective. *$p < .05$. **$p < .01$. $N = 134 - 140$.

likely to opt to move out of the neighborhood were less likely to accept any compensation from the plant nursery, the recycling center, or the cement plant. The significant but low

correlations, however, suggest that while related, the move-out option is different enough from the willingness variables to be used as an alternative measure. Nevertheless, few new relationships emerged between the neighborhood and resident variables and the move-out variable that did not already exist with the willingness variables. Unexpectedly, however, it was determined that younger respondents were more likely to opt to move out of the neighborhood than were older respondents even though younger respondents were more likely to accept compensation for the plant nursery or the cement plant.

The Pearson-*r* correlations for the happy to move item and neighborhood and resident variables and willingness to accept variables are contained in Table 3.10. Individuals who would be least happy to move out of their neighborhood tended to be more satisfied and more attached to their neighborhoods than those who would be more happy to move. The item behaved as the place attachment measures did with respect to age and residential status in that older respondents and those without children living in the household would be more unhappy to move than younger folks and those who had children living in the household. The male respondents were more likely to indicate that they would be unhappy to move than did the female respondents. How unhappy individuals would be to move out of their neighborhoods was not related to whether or not individuals were willing to accept compensation for any of the three facilities.

Because the no-compensation preference score and the happy to move item from the Place Attachment scale were orthogonal and related to important but separate constructs under consideration in this study, a composite willingness to move-out variable was computed by averaging the values on the two measures ($M = 4.44$, $SD = 1.98$). The Pearson-*r* correlations of the composite willingness to move-out variables and neighborhood and resident variables are contained in Table 3.10. Those who were more willing to move out of

their neighborhoods tended to have less neighborhood satisfaction and less place attachment to their homes and neighborhoods than those who were less willing to move. Women and those with children were more likely to move out of their neighborhoods than men or respondents without children, as were younger respondents. Finally, those who were more willing to move out were less likely to accept compensation from the recycling center and the cement plant than those who were less willing to move out of their neighborhoods.

SES. Two raters evaluated the occupation-related questions and assigned an occupational title. Inter-rater reliability for determining occupational title was .76. When there were discrepancies, the raters engaged in a discussion and came to an agreement over the appropriate title. Each occupational title was associated with a score on the Hauser-Warren SEI scale (1997). Occupation was not identified for a majority of those in retirement, so the SEI score was not available for 40 respondents.

Figure 3.8 displays the distribution of SEI scores in the sample population. On a

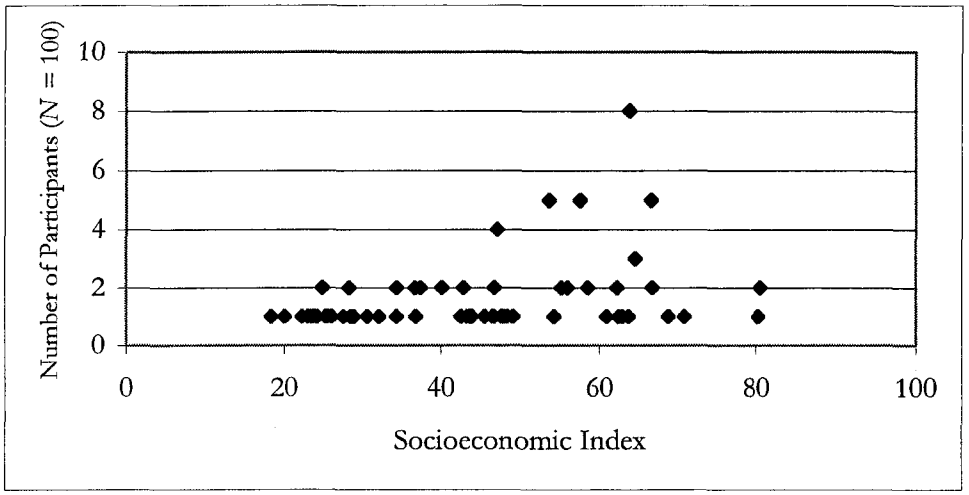


Figure 3.8
Distribution of Sample Population on the Socioeconomic Index

scale from 0 to 100, scores ranged from 18.32 to 80.53 (M = 47.96, SD = 15.81).

Tables 3.6, 3.9, and 3.10 contain the Pearson-*r* correlations for SEI and neighborhood, acceptability, and move-out measures. SEI was not related to any of the neighborhood variables (Table 3.6) nor the acceptability (Table 3.9) nor move-out measures (Table 3.10).

Table 3.11 contains socioeconomic variations across the groups used in this sample. A one-way analysis of variance and a Tukey post-hoc test indicated that the Family Center respondents had a significantly lower socioeconomic position than did the four other groups in the sample population, and the other four groups did not differ significantly from each other. Most of the retired respondents were represented in the St. Elizabeth Ann Seton Church group and Lion's Club, and the only student respondents came from the Family Center. There were no welfare recipients who were not students in this sample population. Those who were not retired or students indicated an "other" category and were assumed to be actively employed or only temporarily unemployed.

The average monthly rent or mortgage payment was $1,004.99 ($SD$ = 447.36). Payments of $0 ($n$ = 20) were omitted from the house payment computations. Most of those reporting a house payment of $0 were retired and their socioeconomic status was the highest in comparison to the other groups that made up the sample population. It was apparent from the demographics of the group that a value of $0 likely represented those who had paid off a mortgage rather than individuals who were incapable of making a house payment due to financial limitations. Additionally, a value of $4,000 was also omitted from the computation of house payment because it was an outlier on the other side of the distribution. With these omissions the median house payment was $930.00. The means and standard deviations for house payment for each of the groups that made up the sample are contained in Table 3.11. A one-way analysis of variance and a Tukey post-hoc test indicated

Table 3.11
Economic Indicators of Sample Population as a Function of Data Collection Site

Collection Site	SEI			Primary Wage-earner Status (*n*)				Monthly House Payment ($)	
	n	*M*	*SD*	Retired	Welfare recipient	Student	Other	*M*	*SD*
St. Elizabeth Ann Seton Church[a]	25	52.27	12.24[d]	8	0	0	0	1083.83	411.57[d]
John XXIII Church[b]	14	53.29	15.56[d]	0	0	0	0	1146.07	209.45[d]
Fort Collins Mother's Center[c]	20	49.91	16.93[d]	0	0	0	0	1067.79	382.02[d]
Family Center[d]	24	36.79	16.06[abce]	1	2	6	0	770.42	442.96[abce]
Fort Collins Lion's Club[e]	17	50.89	12.66[d]	26	0	0	0	1060.00	615.45[d]
F for effect of group		4.65*						2.54*	
df		(4, 95)						(4, 97)	
η^2		.16						.09	

Note. $^*p < .05$. SEI values ranged from 0 to 100, with higher values indicating a higher socioeconomic position. Superscripts indicate groups that are significantly different ($p < .05$) from the result shown.

that the Family Center respondents paid the least in monthly rent or mortgage, and the other groups did not differ from each other.

Of 140 participants, only 100 could be assigned an SEI score due to unanswered occupation-related questions. It was expected that the house payment variable could be used as a secondary indicator of socioeconomic position. To examine this possibility the sample was divided into thirds, which corresponded to the lowest, middle, and highest SEI scores. Table 3.12 contains ranges and the means and standard deviations for the three groups. A

Table 3.12
Ranges and Means and Standard Deviations of Socioeconomic Indicators and House Payments for Low, Middle, and High SEI groups

		SEI Scores					House Payment			
SEI Groups	*n*	range	*M*	*SD*	*F*	*n*	range($)	*M*	*SD*	*F*
Low[a]	33	18.32 – 40.11	29.16[bc]	5.90		29	69 – 2200	890.93	445.00	
Middle[b]	36	42.50 – 57.50	49.75[ac]	5.25		31	350 – 2600	1093.74	461.54	
High[c]	31	58.54 – 80.53	65.90[ab]	5.47		23	650 – 2100	1151.48	359.74	
Significant Differences					354.28**					2.76
df					(2, 97)					(2, 80)
η^2					.88					--

Note. SEI groups were determined by taking the bottom, middle, and top thirds of the distribution in the sample population. $^{**}p < .01$. Superscripts indicate group differences.

one-way analysis of variance confirmed that the groups were, indeed, different.

Group differences in house payment were examined. Table 3.12 contains the ranges and means and standard deviations for house payment for individuals in the low, middle, and high SEI groups. Although there was a trend ($p = .07$) in the amount respondents paid each month on their rent or mortgage as a function of SEI, the differences were not significant. Furthermore, the large overlap in the range of values of house payment for the three groups made it low in discrimination as a second indicator of socioeconomic position.

Does SES Predict Willingness to Accept Negotiated Compensation?

A multivariate analysis of variance was implemented to assess whether respondents from each of the three SEI groups varied in their acceptance for each of the eight compensation options. Table 3.13 contains the means, standard deviations, and univariate F ratios for respondents' preference for each of the compensation options in the paired comparisons task as a function of SEI. Using Wilks' Lambda criteria, there were no significant differences among the groups in their preference for each of the compensation options, $F(16, 180) = 0.89, p > .05$.

A series of one-way analyses of variance was used to examine respondents' likelihood to move out of their neighborhood and their acceptability ratings for each of the three specific nuisance facilities as a function of SEI. Table 3.14 contains the means, standard deviations, and F ratios for each of the separate analyses. No group differences

Table 3.14
Means, Standard Deviations, and Univariate F-ratios for a Willingness to Move Out and Acceptability for Nuisance Facilities as a Function of SEI

	SEI Groups						
	Low (n = 33)		Middle (n = 36)		High (n = 31)		
Move-out/Acceptability	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F*
Willingness to move-out	4.94	2.22	4.26	1.98	4.89	2.01	1.14
Acceptability							
Plant Nursery	2.58	2.18	3.72	2.09	3.29	2.10	2.54
Recycling Center	1.94	2.24	2.22	2.57	2.10	2.34	0.12
Cement Plant	1.55	2.25	1.39	2.13	1.39	1.93	0.06

were evident for a willingness to move out of the neighborhood nor for acceptability of nuisance facilities based on SEI classification.

Table 3.13
Means, Standard Deviations, and Univariate F-ratios for the Compensation Options as a function of SEI

	SEI Groups						
	Low		Middle		High		
Compensations	*M*	*SD*	*M*	*SD*	*M*	*SD*	univariate *F*
Facilities or activities for neighborhood children	6.18	1.59	6.19	1.75	6.29	1.55	0.04
Beautification program for neighborhood	5.70	1.59	5.97	1.38	5.39	1.45	1.31
New or expanded neighborhood park	5.79	1.75	5.67	1.66	5.74	1.53	0.05
Traffic improvements to neighborhood streets	5.12	1.57	4.28	1.94	4.97	1.80	2.22
Improved security and police services in neighborhood	4.03	1.79	4.08	1.79	4.45	1.71	0.51
Large donation	3.79	2.00	3.58	1.81	3.06	1.73	1.29
Free cable or satellite TV service	2.64	1.80	3.17	1.95	2.90	2.12	0.63
Prefer to move out of the neighborhood	3.58	2.55	2.97	2.58	3.19	2.48	0.49

Are There Identifiable Characteristics of Those Who Will Accept Compensation?

Discriminant function analyses using the direct method were used to predict whether or not respondents were willing or unwilling to accept community compensation for each of the three specific nuisance facilities (plant nursery, recycling center, cement plant) based on resident characteristics. The predictor variables included age, gender, SES, whether or not the respondents had children living with them, years lived in the neighborhood, and residential status. Group size *a priori* probabilities were used to aid in the group classification phase of the analyses. The analyses were performed separately for each facility using the respective dichotomized willingness to accept variables.

Table 3.15 contains the squared canonical correlations and standardized discriminant function coefficients for each of the three analyses. The predictor variables were unable to

Table 3.15
Discrimant Functions for Those Who Were Willing or Not Willing to Accept Compensation from Nuisance Facilities Based on Resident Characteristics

	Willingness to Accept					
	Plant Nursery		Recycling Center		Cement Plant	
Resident Characteristics	cr^2	coeff	cr^2	coeff	cr^2	coeff
	.04		.04		.12	
Age		-.06		.58		.22
Gender		-.39		-.20		.31
SES		-.22		.36		-.11
Time in neighborhood		-.04		.61		.75
Residential status (rent/own)		.73		-.31		.36
Children in home (n/y)		.82		.71		.78

distinguish between those who were willing and those who were unwilling to accept compensation for a plant nursery, recycling center, or a cement plant.

Do Neighborhood Satisfaction and Place Attachment Predict Acceptance of Compensation?

A series of multiple regression analyses using the direct method was used to determine if neighborhood satisfaction and place attachment to house and neighborhood could predict whether or not respondents would opt to move out of their neighborhood rather than accept neighborhood compensation. The continuous acceptability measures for each of the three nuisance facilities and the composite willingness to move-out variable were used as the independent variables in the analyses.

Table 3.16 contains the change in R^2 and standardized beta weights for predicting respondents' acceptability of the plant nursery, recycling center, and cement plant using neighborhood satisfaction and place attachment to house and neighborhood as dependent variables. Neighborhood satisfaction and place attachment to house and neighborhood did

Table 3.16
Change in R^2, Standardized Beta Weights, and F-ratios for Predicting Acceptability of Nuisance Facilities and Willingness to Move-out of the Neighborhood

	Acceptability							
	Plant Nursery		Recycling Center		Cement Plant		Willingness to Move-out	
Predictor Variables	R^2	β	R^2	β	R^2	β	R^2	β
	.02		.04		.06		.30	
Neighborhood Satisfaction		-.09		-.08		-.14		.28
Place Attachment to House		-.15		-.15		-.17		-.06
Place Attachment to Neighborhood		.11		.28		.37		-.67
F		1.05		1.89		3.03*		18.98**

Note. $*p < .05$. $**p < .01$.

not have any significant predictive value for the no-compensation option or the acceptability of the plant nursery or recycling center. A comparison of squared beta weights for predicting the acceptability of the cement plant indicated that place attachment to neighborhood

predicted 6.5 times more variance than did place attachment to house and 4.3 times more variance than did neighborhood satisfaction. Place attachment to house predicted 1.5 times more variance in acceptability of the cement plant than did neighborhood satisfaction.

Table 3.16 also contains the change in R^2 and standardized beta weights for predicting respondents' willingness to move out of their neighborhood using neighborhood satisfaction and place attachment to house and neighborhood as dependent variables. A comparison of squared beta weights indicated that place attachment to neighborhood explained over 5.5 times more variance in respondents' willingness to move out of the neighborhood than did neighborhood satisfaction and over 100 times more variance than did place attachment to house. Neighborhood satisfaction explained 20 times more variance than did place attachment to house in respondents' willingness to move out of their neighborhoods.

Chapter 4

Discussion

Negotiated compensation is proposed by Lambert and Boerner (1997) as a means to keep neighborhoods intact, thereby arresting the propagation of environmental injustices via the process of white flight. The success of negotiated compensation relies on the assumption that residents are at least willing to consider neighborhood compensations from a proposed facility rather than abandon their current residences. The results of the paired comparisons task in this study suggested that this supposition may be satisfied. Out of eight possible options among which participants could choose, the option not to accept compensation was the least preferred. In other words, the respondents were willing to consider every single one of the seven compensation options, varying from facilities/activities for neighborhood children to free cable or TV satellite service, before they were willing to desert their neighborhoods.

In addition, as expected, some facilities were more acceptable than others. Specifically, the plant nursery was the most acceptable and the cement plant was the least acceptable. Some 83% of respondents were willing to accept compensation for the plant nursery, 54% for the recycling center, and 41% for the cement plant. Given that all three facilities were low in acceptability (Table 3.1), the fact that sizeable percentages of respondents were willing to accept at least one compensation for each facility suggests that negotiated compensation does hold promise for smoothing the siting process.

SES

Contrary to the prediction that negotiated compensation would be more successful among poorer residents, this study demonstrated that the process of negotiated compensation seems to be applicable to neighborhoods regardless of SES. Middle and upper income residents were no less likely to accept neighborhood compensation than were lower income residents. It was expected that residents of economically deprived neighborhoods would be eager to accept any compensation that would promise to make their lives better or more comfortable. This did not appear to be the case for the lower income respondents in this study. The current sample included those from roughly the 20th to 80th percentiles of the SEI measure. In the community studied, those in the lowest quintile are usually upwardly mobile, such that those in the higher quintiles have often spent previous years in the lowest. Defining SES with a "static" measure does not take into account the potential for change in status. Whether mobility would predict willingness to engage in negotiated compensation could be an important consideration for the future.

The expectation that negotiated compensation would be more successful among lower income respondents was based on the presumption that economic deprivation amounts to a dissatisfaction with the neighborhood. The results of the paired comparisons task together with the lack of a correlation between SES and neighborhood satisfaction demonstrate that this is not necessarily the case. The concept of relative deprivation lends some insight into why the poor are no less satisfied with their neighborhoods than the middle or upper class. Relative deprivation suggests that happiness or satisfaction depends on the target of comparison. When the target of comparison is better than what we are or have, we tend to feel less satisfied with ourselves or our situation. The reverse is also true; if we compare ourselves with a target that is less well off than ourselves then we feel better

about our own situation. To the extent that the targets of comparison are neighborhoods like their own, residents will be sufficiently satisfied with their neighborhoods.

In addition to the finding that middle and upper class residents were as likely to opt against the no-compensation option, their preferences for the seven other neighborhood compensation options did not vary from each other or from the lower income respondents. Undoubtedly, some neighborhood compensation requests require greater resources than others. To the extent that the compensation requests of lower income neighborhoods require less expenditure than those of the middle and upper, they will represent a less expensive and more attractive target for developers looking to minimize costs. Economic dynamics such as these would further perpetuate environmental injustices among the poor and populations of color. The consistency in preferences in this study for each of the compensations across groups provides some indication that requests may not be all that different from one neighborhood to the next.

It should be mentioned, however, that the order of preferences for each of the neighborhood compensation options in the paired comparisons task does not reveal the equitability of compensation requests entirely. The stimulus materials for this study were intentionally designed to relate to people of varying backgrounds. As a result, the compensations were generally worded and specific examples of what the compensation might entail were included in parentheses. To the extent that what one group was responding to in the parentheses was different than what another group was responding to, it cannot be asserted that the compensation requests were exactly comparable. For example, in selecting the traffic improvement compensation one respondent may have been interested in the speed bumps for his or her neighborhood, while another respondent may have been

interested in streetlights. To the extent that differences such as these occurred systematically across socioeconomic groups, compensation requests were not perfectly equivalent.

Despite this possibility, the measure of the minimum acceptable compensations for each of the specific nuisance facilities lends some support to the contention that compensation requests were likely equitable in that the number of minimum acceptable compensations for each of the facilities (plant nursery, recycling center, and cement plant) did not vary as a function of SES. The task that required respondents to indicate the minimum acceptable compensation consisted of respondents selecting all of the compensations that they felt would be a satisfactory exchange for the facility in question. The more compensations that were selected the less objectionable the facility, as all selections beyond the first were less preferred. Regardless of socioeconomic position, the plant nursery was the least offensive and the cement plant the most offensive. The nonexistence of differences across groups suggests that compensation requests or expectations are somewhat similar even if they are not exactly comparable.

The fact that residents found the nuisance facilities similarly objectionable regardless of SES counters a common misperception about lower income populations and environmental risks. Traditionally, claims of environmental racism have suggested that poor communities are targeted for hazardous development projects due to the fact that they represent "paths of least resistance." These findings suggest that lower income residents are positively not unaware of potential risks and hazards. While often unrecognized for their environmental activism, people of color demonstrate these very concerns in the grassroots organizations that mobilize against the environmental inequities that characterize their communities (Taylor, 1999).

Individual Differences

The discriminant analyses failed to support the hypothesis that an identifiable set of characteristics would predict who would be willing to negotiate a compensation and who would not. The only significant predictor of willingness to accept compensation in Table 3.9 was age, with older individuals less willing. The magnitude of even this correlation was low. These results suggest that if negotiated compensation is to be tried in a neighborhood, the effort needs to be targeted at all residents, since willingness to accept compensation appears to be fairly independent of individual differences. On the other hand, a number of factors (age, children at home, attachment to house and neighborhood) were correlated with a willingness to move. These results suggest that relocation to avoid a nuisance does remain a viable option for some residents, but the right compensation could minimize the likelihood of flight.

Neighborhood Satisfaction and Place Attachment

Contrary to the hypothesized associations between neighborhood measures and the acceptability of the nuisance facilities, this study demonstrated that neighborhood satisfaction and place attachment possessed no or close to no predictive value for how tolerable or intolerable respondents found the plant nursery, the recycling center, or the cement plant. It was believed that those who would be most willing to engage in the process of negotiated compensations would be both more committed, as would be expressed in their place attachment, and less satisfied with the current state of their neighborhoods than those who were less willing to consider neighborhood compensations. Furthermore, this profile of the willing negotiator was expected to be most evident for the cement plant, as it represented the biggest nuisance of the three facilities and had the greatest potential for distinguishing the negotiators from the non-negotiators. While acceptability for the cement plant had a

significant amount of variance accounted for by the neighborhood predictor variables, at 6% the amount of explained variance possessed little practical value. Nevertheless, the relationships were in the predicted direction such that, those with greater place attachment to their neighborhoods and less neighborhood satisfaction were more willing to consider neighborhood compensations from the cement plant. It is possible that these variables would prove even more predictive for facilities that pose greater environmental risks.

The paired comparisons task clearly demonstrated that leaving a neighborhood is not a choice that residents make easily, at least not without considering other alternatives. And further examination of respondents' willingness to move out of their neighborhoods using the neighborhood predictor variables revealed that residents' difficulty in moving has most to do with the place attachment that they feel toward their neighborhoods, more than neighborhood satisfaction or place attachment to the residential unit. Furthermore, place attachment is not mediated by SES. This finding is consistent with Gans (1962) and Fried and Gleicher (1961) who suggest that neighborhoods, even slums, provide a functioning social system and sense of identity for their residents. When this is taken away from a group of people the effects can be devastating, as is evidenced in urban renewal projects that replace low income housing with expensive residential units or office buildings.

Despite the dissimilarity in the performance of the neighborhood predictor variables in explaining residents' willingness to move out and the acceptability of the nuisance facilities, the latter two phenomena seem to be related. Of the three nuisance facilities, the two with the greatest nuisance factor were negatively associated with how willing residents were to move out, such that those who were least willing found them more acceptable than those who were more willing to move out. In other words, residents who were more

committed to staying in their current neighborhoods seemed more inclined to engage in the process of negotiation with a facility.

Conclusions

The use of negotiated compensation in conjunction with the procedure of paired comparisons holds promise in addressing the economic and psychological issues that enclose environmental justice. While the use of paired comparisons in this study imposed what may have seemed to be a limitation in the number and in the specific compensations that could be included for consideration, the objective was not to identify the one compensation that fits every single neighborhood or community. The specific compensations that may be offered to any one neighborhood or by any one proposed facility will necessarily vary due to the neighborhood's needs and the facility's ability to accommodate certain compensations.

The compensations that were included in this study represented a range of goods, and respondents' valuation of the goods yielded some indication of how other compensations would fare in the process of negotiated compensation. Excluding the no-compensation option, traffic improvements divided the list of compensations that were included in this study in half, with the top half being the most preferred and the bottom half being the least preferred. Compensations that appeared in the top half of the list were characteristically different from the bottom half in that the top half compensations seemed to benefit the good of the neighborhood more than the individual resident. For example, respondents preferred a beautification program for the neighborhood and a new or expanded neighborhood park over a large donation to an organization of their choice and free cable or satellite TV service. Potential neighborhood compensations should focus on goods that benefit the neighborhood unit more than the individual household.

The present investigation sampled roughly the middle 60% of the range of socioeconomic status. Within this range SES did not appear to be a good predictor of willingness to engage in negotiated compensation. Whether the specific results would generalize to a sample for another community remains to be seen, but the general results of the method identifying potentially acceptable compensations does hold promise. Ideally, these outcomes should be replicated in a situation where an actual LULU—rather than a hypothestical one—is involved.

Negotiated compensation is not a solution for addressing existing inequities. There are several other elements apart from allegations of discriminatory siting practices that perpetuate existing environmental inequities, such as inconsistent and discriminatory policies of regulatory bodies and the courts (Lavelle & Coyle, 1992). It is important to consider the problem in its entirety if environmental justice is to be realized in the U.S. However, the present study suggests that negotiated compensation may be a viable means for avoiding future instances of environmental injustice by addressing the dynamics of residential mobility and the housing market.

References

Been, V. (1993). What's fairness got to do with it? Environmental justice and the siting of locally undesirable land uses. *Cornell Law Review, 78,* 1001-1085.

Been, V. (1994). Locally undesirable land uses in minority neighborhoods: Disproportionate siting or market dynamics? *Yale Law Journal, 103,* 1383-1422.

Bell, P. A., Greene, T. C., Fisher, J. D., & Baum, A., (2001). *Environmental Psychology (5th ed.).* Fort Worth: TX: Harcourt College Publishers.

Brown, B., Perkins, D. D., & Brown, G. (in press). Place attachment in a revitalizing neighborhood: Individual and block levels of analysis. *Journal of Environmental Psychology.*

Brown, T. C., Nannini, D., Gorter, R. B., Bell, P. A., & Peterson, G. L. (2002). Judged seriousness of environmental losses: Reliability and cause of loss. *Ecological Economics, 42,* 479-491.

Bryant, P. (1993). Environmental justice: Hearing before the subcommittee on civil and constitutional rights of the House Committee on the Judiciary. *103d Congress,* 9-10.

Bullard, R. D. (1983). Solid waste sites and the Black Houston community. *Sociological Inquiry, 53,* 273-288

Bullard, R. D. (May, 1994). *The case for environmental equity/justice and its historical Perspective.* Talk presented at Environmental Equity: A critical review from all perspectives. Houston, TX.

Bullard, R. D. (1994). Overcoming racism in environmental decision making. *Environment, 36 (4),* 10-20, 39-44.

Butler, E. W., Chapin, Jr., F. S., Hemmes, G. C., Kaiser, E. J., Stegman, M. A.., & Weiss, S. F. (1969). *Moving behavior and residential choice: A national survey.* Washington, D.C.: Highway Research Board, National Research Council.

Clarke, A., Bell, P. A., & Peterson, G. L. (1999). The influence of attitude priming and social responsibility on the valuation of environmental public goods using paired comparisons. *Environment and Behavior, 31,* 838-857.

Denton, N. A., & Massey, D. S. (1991). Patterns of neighborhood transition in a multiethnic world: U.S. metropolitan areas, 1970-1980. *Demography, 28,* 41-63.

Downs, A. (1973). *Opening up the suburbs: An urban strategy for America.* New Haven, CT: Yale University Press.

Environmental Protection Agency (2003). Environmental Justice [On-line]. Available: http://epa.gov/compliance/environmentaljustice/index.html

Environmental Protection Agency, Office of Solid Waste (2001). Municipal Solid Waste [On-line]. Available: http://www.epa.gov/epaoswer/non-hw/muncpl/index.htm

Fried, M., & Gleicher, P. (1961). Some sources of residential satisfaction in an urban slum. *Journal of American Institute of Planners, 27,* 305-315.

Gans, H. J. (1962). *The Urban Villagers: Group and class in the life of Italian-Americans.* New York: Free Press.

Gruber, K. J., & Shelton, G. G. (1987). Assessment of neighborhood satisfaction by residents of three housing types. *Social Indicator Research, 19,* 303-315.

Hauser, R.. M., & Warren, J. R. (1997). Socioeconomic indexes for occupations: A review, update, and critique. In A. E. Raftery (Ed.), *Sociological Methodology* (pp. 177-298). Cambridge: Basil Blackwell.

Helfand, G. E., & Peyton, L. J. (1999). A conceptual model of environmental justice. *Social Science Quarterly, 80,* 68-83.

Kunreuther, H., & Portney, P. (1991). Wheel of fortune. A lottery/auction mechanism for siting of noxious facilities. *Journal of Energy Engineering, 117,* 125-132.

Lambert, T., & Boerner, C. (1997). Environmental inequity: Economic causes, economic solutions. *Yale Journal of Regulation, 14,* 195-234.

Lavelle, M., & Coyle, M. (1992). Unequal protection—The racial divide in environmental law: A special edition. *National Law Journal, 21,* S1-S12.

Lee, B. A., Oropesa, R. S., & Kanan, J. W. (1994). Neighborhood context and residential mobility. *Demography, 31,* 249-270.

Liska, A. E., & Bellair, P. E. (1995). Violent-crime rates and racial composition: Convergence over time. *American Journal of Sociology, 101,* 578-610.

Liska, A. E., Logan, J. R., & Bellair, P. E. (1998). Race and violent crime in the suburbs. *American Sociological Review, 63,* 27-38.

Lizotte, A. J., & Bordua, D. (1980). Firearms ownership for sport and protection. *American Sociological Review, 45,* 229-243.

Logan, J. R., & Messner, S. (1987). Racial resegregation and suburban violent crime. *Social Science Quarterly, 68,* 510-527.

Louisiana Advisory Committee to the U. S. Community on Civil Rights (1993). *The battle of environmental justice in Louisiana: Government, industry, and the people, 38.*

Massey, D. S., & Bitterman, B. (1985). Explaining the paradox of Puerto Rican Segregation. *Social Forces, 64,* 306-331.

Massey, D. S., & Mullen, B. P. (1984). Process of Hispanic and Black spatial assimilation. *American Journal of Sociology, 89,* 836-874.

McDermott, C. (1994). Balancing the scales of environmental justice. *Fordham Urban Law Review, 21,* 689-697.

Mitchell, J. T., Thomas, D. S. K., & Cutter, S. C. (1999). Dumping in Dixie revisited: The evolution of environmental injustices in South Carolina. *Social Science Quarterly, 80,* 229-243.

Mohai, P., & Bryant, B. (1992). Environmental racism: Reviewing the evidence. In P. Mohai & B. Bryant (Eds.), *Race and the incidence of environmental hazards* (pp. 161-176). Boulder, CO: Westview Press.

Nannini, D. K., Sommer, R., Meyers, L. S. (1998). Resident involvement in inspecting trees for Dutch Elm Disease. *Journal of Arboriculture, 24,* 42-46.

Peterson, G. L., Brown, T.C., McCollum, D. W., Bell, P. A., Birjulin, A. A., & Clarke, A. (1994). Estimation of willingness to accept compensation for public and private goods from the chooser reference point by the method of paired comparison. In R. C. Ready (Ed.), *Benefits and costs transfer in natural resource planning* (pp. 329-360). Lexington, KY: Seventh Interim Report of the W-133 Regional Research Project, University of Kentucky.

Peterson, G. L., Brown, T.C., McCollum, D. W., Bell, P. A., Birjulin, A. A., & Clarke, A. (1996). Moral responsibility effects on valuation of WTA for public and private goods by the method of paired comparisons. In W. L. Adamowicz, P. C. Boxall, M. K. Luckert, W. E. Phillips, & W. A. White (Eds.), *Forestry, economics, and the environment* (pp. 134-159). United Kingdom: CAB International.

Rivlin, L. G. (1982). Group membership and place meanings in an urban neighborhood. *Journal of Social Issues, 38,* 75-93.

Rubin, B. M. (1994, December 2). Robbins has many uses for windfall. *Chicago Tribune,* MSS 1.

Slovic, P. (1987). Perception of risk. *Science, 236,* 280-285.

Sobieski, D. J. (1993, September 7). Burning fears. *Chicago Times,* p. 20.

Sommer, R. (1996). The value of resident participation in tree planting. *Arborist News, 5,* 43-

44.
Stahura, J. C., & Huff, R. (1981). Persistence of suburban violent crime rates: An ecological analysis. *Sociological Focus, 14,* 123-137.

Stahura, J. C., Huff, R., & Smith, B. (1980). Crime in the suburbs: A structural model. *Urban Affairs Quarterly, 15,* 291-316.

Taylor, D. (1999). Mobilizing for environmental justice in communities of color: An emerging profile of people of color environmental groups. In J. Aley, W. R. Burch, B. Conover, & D. Field (Eds.), *Ecosystem management: adaptive strategies in the 21rst Century* (pp. 33-67). Philadelphia, PA: Taylor and Francis.

United Church of Christ Commission for Racial Justice (1987). *Toxic wastes and race in the United States: A national report on the racial and socio-economic characteristics of communities surrounding hazardous waste facilities.* New York: United Church of Christ.

U.S. Bureau of the Census, (1992). *Alphabetic indexes of industries and occupations.* 1990 Census of Population and Housing. 1990 CPH-R-3. Washington: Government Printing Office.

U.S. Bureau of the Census, (1993). *Social and economic characteristics—Illinois 20.*

U.S. Department of Labor, Employment, and Training Administration (1991). *Dictionary of occupational titles,* 4th ed., rev. Lanham, MD: Bernan Press.

U.S. General Accounting Office (1983). Siting of hazardous waste landfills and their correlation with racial and economic status of surrounding communities. GAO/RCED-83-163. Washington, D.C.: U.S. General Accounting Office.

Vorkinn, M., & Riese, H. (2001). Environmental concern in a local context: The significance of place attachment. *Environment and Behavior, 33,* 249-263.

Appendix A

Focus Group Worksheet

NEIGHBORHOOD PROJECT

Imagine that a large empty lot is located two blocks from your home. The lot is owned by the city. The city has decided that it will either develop the land or sell the land to a developer. The lot in your neighborhood is being considered as a site for one of the following facilities. Rate the acceptability of each of the facilities using the following scale:

Acceptable (I would not object to the facility being built in my neighborhood)
or
Maybe (I might consider the facility being built in my neighborhood)
or
Unacceptable (I would object to the facility being built in my neighborhood)

You may want to note briefly your reasoning behind each of your decisions, as we will address each of the facilities in a group discussion.

Gas Station _____

Grade School _____

Gas Power Plant _____

Solid Waste Landfill _____

Plant Nursery _____

Recycling Center _____

Drug/alcohol Rehab Center _____

Cement Plant _____

Half-way House _____

Bus Depot _____

(soft drink)Packaging Plant _____

Homeless Shelter _____

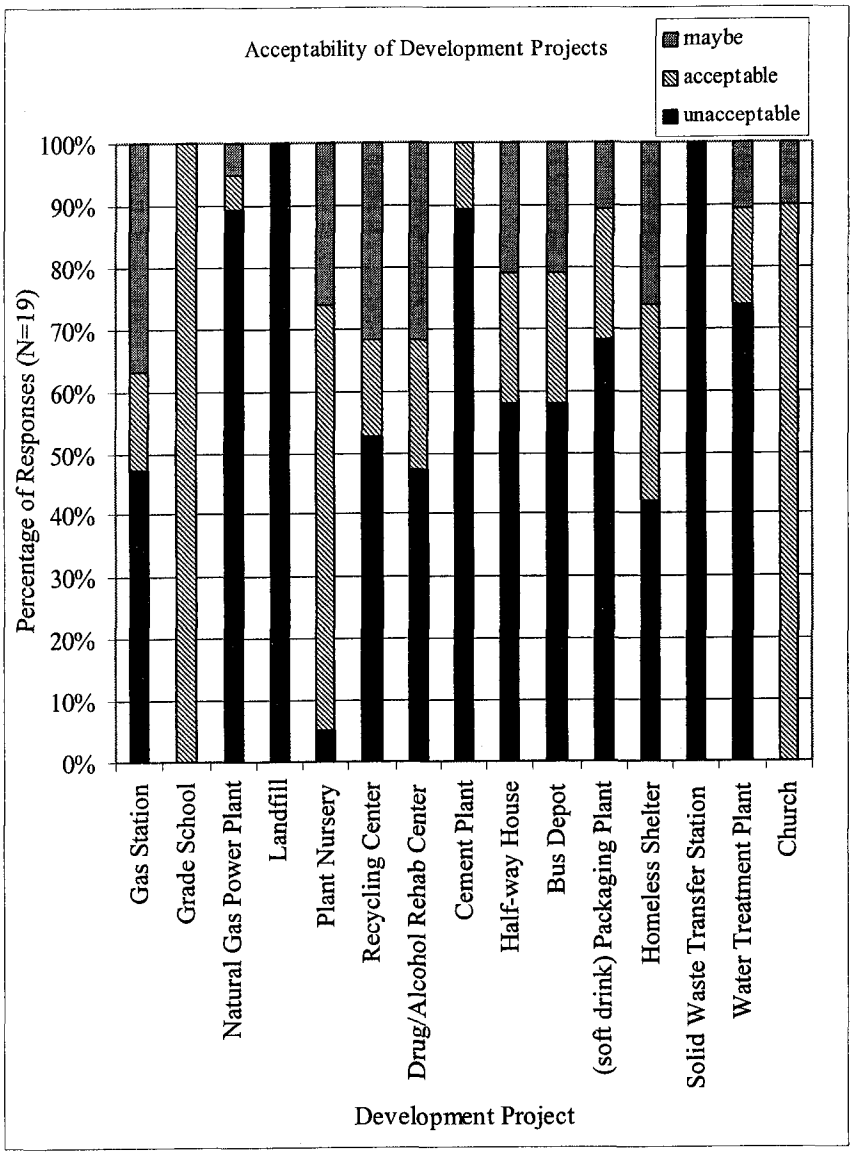
Solid Waste Transfer Station _____

Water Treatment Plant _____

Church (of a religious denomination other than your own) _____

Appendix B

Facilities Considered by Focus Groups



Appendix C

Focus Group Neighborhood Compensation Suggestions

Low Income Neighborhood Compensation Suggestions

make sidewalks
put in streetlights to slow down traffic
skate park (stuff for teenagers to do)
sponsor programs to improve police treatment of ethnic minorities
free recycling

Middle Income Neighborhood Compensation Suggestions

widen neighborhood streets
police presence to slow traffic
gate around neighborhood
build parks
neighborhood pool with paid-for-lifeguard

High Income Neighborhood Compensation Suggestions

new sprinkler system for neighborhood landscaping
large donation to good cause
light rail transit station to metro area