

A STUDY ON WHY PEOPLE ABUSE HANDICAPPED PARKING

By

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ABSTRACT

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Illegal use of handicapped parking is a major problem affecting the lives of approximately 72% of the estimated 43 million Americans whom rely on private automobiles for their transportation (Fletcher, 1997). Past research shows that inappropriate use of handicapped parking spaces occurs frequently, with consistent reports indicating the majority of cars parked in these reserved spaces are parked there illegally (Cope & Allred, 1990; Fletcher, 1997). Most studies have focused on determining violation rates using observational methods (Cope & Allred, 1990; Taylor, 1998). Some studies have shown that legal and social sanctions are only moderately effective in changing people's parking habits (Cope & Allred, 1990; Cope, Lanier, & Allred, 1995; Fletcher, 1997). Very few studies have looked at the reasons people give

for abusing handicapped parking (Cope & Allred, 1990). In order to promote more compliance with handicapped parking law, it is critical to understand what motivates people to park illegally.

This thesis examined “why” people abuse handicapped parking. More specifically, the purpose was to determine what factors influence individuals’ decision to illegally park in handicapped parking spaces. The factors examined were demographics, attitudes towards individuals with disabilities, attitudes towards handicapped parking, and convenience.

The study involved a researcher-developed survey called the “Handicapped Parking Questionnaire” which was mailed to 250 residents in the Menomonie area who were systematically selected from the telephone directory. The survey was created to determine the number of reported handicapped parking violators, as well as to determine if demographics, convenience, attitudes toward persons with disability or toward handicapped parking played a role in respondents parking behavior.

Results determined only 6 (5.5%) of the 109 respondents reported violating handicapped parking. Due to such a low number of reported violators there was insufficient data to complete a T test analysis to determine whether there were meaningful differences between the violators and total sample. When item analysis was completed however, evidence was found to support response differences for certain survey items. Additional evidence obtained through qualitative measures found the primary reason reported violators gave for abusing handicapped parking was convenience.

Results showed surprisingly positive attitudes within the general public and violator groups. Rate of violation was far lower than would be predicted from past studies. Additional data was sought from local law enforcement that supported the observed compliance with handicapped parking law. The setting of the study in a small town appeared to be one plausible explanation for these positive results. Additional research would be advisable to replicate the study to determine if these results are robust in other locations. If such research does demonstrate that residents in similar locations are more compliant, it would be wise to find out what such communities are doing right. Rehabilitation professionals and policy makers may also wish to consider advocating for the addition of more handicapped parking spaces since both violators and the general sample indicated that there was insufficient handicapped parking available.

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## Introduction

### Rationale for Study

Handicapped parking is one important mechanism for enhancing the lives of persons with disabilities. In recent history a variety of interventions have enhanced the involvement and lives of people with disabilities and thus of the communities in which they live and work (Szymanski, Ryan, Merz, Trevino, & Johnston-Rodriguez, 1996; Smart, 2001). Communities experience enhanced vitality when all members fully participate and contribute and thus afford a higher quality of life for constituents (Smart, 2001). Legislation has been a powerful tool for making communities accessible to all members (Danek, et al., 1996). Mobility and access have received considerable attention in the law (Jenkins, Patterson & Szymanski, 1998). It is only through the ability to move about the community that people with disabilities can fully benefit from and contribute to community life. Handicapped parking allows persons with limited mobility to access all parts of the community; thus detailed specifications about handicapped parking were included in the 1990 Americans with Disabilities Act (<http://www.usdoj.gov/crt/ada/restripe.htm>).

According to the American's With Disabilities Act, businesses are required to provide at least one handicapped parking spot for every twenty-five spaces. Accessible parking spaces for cars have at least a 60-inch-wide access aisle located adjacent to the designated parking space. The access aisle is just wide enough to permit a person using a wheelchair to enter or exit the car. These parking spaces are identified with a sign with the international symbol of accessibility mounted high enough so it can be seen while a

vehicle is parked in the space. Van-accessible parking spaces are the same as accessible parking spaces for cars except that the spaces have wider access aisles of 96 inches to accommodate a wheelchair lift and an additional sign that identifies the parking space as “van accessible”. One of every eight accessible parking spaces, but always at least one, must be van-accessible (<http://www.usdoj.gov/crt/ada/restripe.htm>).

Accessible parking spaces must be located on the shortest accessible route to an accessible facility entrance. Where buildings have multiple accessible entrances with adjacent parking, the parking spaces must be dispersed and located closest to the accessible entrances (<http://www.usdoj.gov/crt/ada/restripe.htm>).

In order to legally park in a handicapped parking space, one must either have Disabled Parking License Plates or a Disabled Parking Identification Card displayed in their vehicle. An authorized health care specialist must certify that a person has a permanent or temporary disability for them to be eligible for a Disability Parking Identification Card (placard). Only those certified with a permanent disability are eligible for a Disabled Parking License Plate (<http://www.dot.state.wi.us>).

By legal definition, disability includes any person who:

- Cannot walk 200 feet or more without stopping to rest;
- Cannot walk without the use of, or assistance from, another person or brace, cane, crutch, prosthetic device, wheelchair or other assistance device;
- Is restricted by lung disease to the extent that forced expiratory volume for 1 second when measured by spirometry is less than one liter or the arterial oxygen tension is less than 60 mm/hg on room air at rest;
- Uses portable oxygen;
- Has cardiac condition to the extent that functional limitations are classified in severity as class III or IV, according to standards accepted by the American Heart Association;
- Is severely limited in the ability to walk due to an arthritic, neurological or orthopedic condition;
- Has an equal degree of disability to those described above

(<http://www.dot.state.wi.us>).

Thus the law is clear about what constitutes legal parking in handicapped designated areas. Such parking is a vital component in an accessible community. Access to the community benefits all members. There is evidence, however, that not all people respect the law governing the use of handicapped parking. The issue of parking abuse will be described in the next section.

Parking abuse. Handicapped parking is an important community access accommodation for persons with mobility limitations. The public has supported community access for persons with disabilities as shown by the broad public support for the Americans with Disabilities Act (Rovner, 1990). The ADA included provisions that regulate handicapped parking access. States and municipalities have additional codes that further promote and enforce the right of access to accessible parking for persons with disabilities. There is considerable research and anecdotal evidence that not all members of the community respect the laws restricting and regulating handicapped parking (Stothers, 1997). One special area of study has been handicapped parking abuse.

There are several ways in which handicapped parking spaces are being abused. Parking abuse occurs when non-disabled people without Disabled Parking License Plates or a Disabled Parking Identification Card (also referred to as a permit or a placard) illegally park in handicapped parking spaces. In an experiment designed to determine the frequency of violations of handicapped parking spaces Taylor (1998) found that rates of violations were high in both urban (76.3%) and town (44%) locations. In this study a violation was counted if a vehicle without a handicapped permit, sticker, or license plate was parked in a handicapped space for longer than 10 seconds. However, parking without

a placard is just one form of handicapped parking abuse

When illegal parking with placards is included, the incidence of handicapped parking violations is even higher. In some cases people are issued a handicapped parking placard for a temporary disability such as a knee surgery, and then continue to use the placard after they no longer need it or after the placard has expired. The temporary placards are good for three years and can be renewed without requiring a Doctor's signature. Another parking misuse that is becoming more common is the use of counterfeit placards or placards that were not issued to the driver of the vehicle. Often these are stolen or belong to friends or family members (Cope, Lanier, & Allred, 1995).

Penalties for illegally parking in spaces reserved for those with disabilities vary. The national standard is currently at \$100 a ticket (More, 2000). However, many cities that are experiencing rampant violations of handicapped parking or use of bogus placards are increasing their fines. In San Francisco, where incidences of wrongful misuse of handicapped parking spaces have been especially high, violators can pay \$1,000 for one violation- \$500 for using a fake or illegal placard and another \$400 for being in the handicapped space (Moore, 2000). Under a bill being sponsored by Assemblyman Patrick Manning, New Yorkers who decide to park illegally in handicapped spaces could be faced with a fine that could reach up to \$250 for the first-time offenders and \$300 for second-time offenders. The other provision of the bill would impose a fine of \$1,000, the possibility of one year in jail, or both, for those who issue false handicapped permits ("Illegally parking," 1999).

The police forces in Akron, Ohio are using increased fines and sanctions to reduce illegal parking as well as methods to verify violators. Police personnel will be able to do

computerized checks of handicapped parking placards to find out if the person to whom the placard was issued has died. If the driver is not the person identified on the placard, the driver can be ticketed. Drivers who abuse the placards also face the possibility of having their vehicle towed, which increases the cost of the violation (Tucker, 1999).

Accessible parking allows persons with disabilities to fully participate in the community. Handicapped parking spaces must therefore be available to persons most needing such accommodation and not be filled with unauthorized patrons. Efforts to better monitor and control parking behavior have been instituted throughout the country. Numerous punitive approaches to controlling the use and abuse of handicapped parking have been tried with varying success. If parking behavior was better understood, targeted behavioral interventions might be used to successfully curb parking abuse. Research is described in the next section related to reasons for handicapped parking abuse.

Reasons for handicapped parking abuse. Effective deterrents to illegal parking will ensure handicapped parking access for people who most need it. Cope, Lanier, and Allred, (1995) reported that adding a sign which read, "Warning: This space watched by concerned citizens" (p.321) next to handicapped spaces was successful in decreasing illegal parking. The study supported the notion that advertising the possibility of social intervention can be effective in decreasing illegal parking behavior. However, "the problem of illegal parking in spaces reserved for the physically disabled will continue to be a community problem as long as the benefits associated with parking (i.e., ease of access, proximity, and availability) outweigh the perceived costs (i.e., legal or social consequences)" (p.317).

In an article entitled Parking Envy Parking Rage, Stothers (1997) discussed some

of the excuses or explanations handicapped parking violators gave after being cited by police at a football game in San Diego. The placard “belongs to me and my dad”, said one man. “It’s my wife’s; she’s joining me later”, said another. One man bitterly complained that he borrowed his grandmother’s placard because he was a long-time season ticket holder and was angry that he couldn’t park in a preferred parking area. Many non-disabled people complain that there is too much parking reserved for people with disabilities, spaces designated for persons with disabilities are located in prime areas, and that most spaces stay empty (Stothers, 1997). Such reasons for parking violation suggest that the ways people think and feel have significant effects on how they behave in relation to handicapped parking regulations. As with any other life activity, the feelings, thoughts and attitudes of persons without disabilities may affect parking behavior. In the next section attitudes and the ways that attitudes may affect parking behaviors will be described.

### **Theoretical Framework**

Attitudes and parking behavior. Attitudes play an important role in everyday life and behavior. As a result, attitudes may be an important consideration in whether a person chooses to honor the principles and laws governing handicapped parking access. Hockenbury and Hockenbury (1997 p. 530) define attitude as “a learned tendency to evaluate some object, person, or issue in a particular way; such evaluations may be positive, negative, or ambivalent.” Attitudes consist of three different and interconnected components: cognitive, affective, and behavioral. The cognitive component is a person’s beliefs, thoughts, or ideas about the attitude object, person, or issue. The affective component, which is also known as the emotional component includes a person’s feelings

and emotions about the attitude object, person, or issue. Finally, the behavioral component is a person's predisposition to act in a particular way (Hockenbury & Hockenbury, 1997).

These components are so much a part of one's attitudes that Huffman, Vernoy, and Vernoy (2000 p.587) define attitude as "a learned predisposition to respond cognitively, affectively, and behaviorally, to a particular object in a particular way". However, as Hockenbury & Hockenbury (1997) point out, people do not always act in accordance with their attitudes. Social psychologists have found that individuals are most likely to act in accordance with their attitudes when: attitudes are extreme or are frequently expressed, attitudes have been formed through direct experience, one is very knowledgeable about the subject, one has a vested interest in the subject, and when one anticipates a favorable outcome or response from others.

To complicate things even more, sometimes behavior can influence or change a person's attitudes through cognitive dissonance. Cognitive dissonance occurs when behavior conflicts with attitudes, which produces an uncomfortable state of tension. If one is able to rationalize or explain their behavior, the conflict and tension is eliminated or avoided. If one is unable to explain their behavior, the person may change their attitude so that it is in harmony with their behavior (Hockenbury & Hockenbury, 1997).

Thus it is evident that the relationship between attitudes and behavior is complex and somewhat interdependent. Attitudes certainly affect how an individual responds and acts in a given situation. Likewise behaving in a positive manner despite negative attitudes may result in an attitude shift more in keeping with that positive action. Attitudes about handicapped accessible parking and about persons with disabilities in

general may affect parking and parking violations. Increased compliance with parking regulations would make handicapped parking more available to people who need it. In order to increase compliance, parking behavior must be better understood. Information on the role and influence of attitudes seems to suggest that attitudes may be an important factor in understanding and influencing parking behavior.

### **Statement of the Problem**

Past research on the topic of violations of handicapped parking included many examples of handicapped parking misuse and some studies of the frequency and types of parking misuse (Cope & Allred, 1990). However, there is very limited research on “why” people without disabilities are abusing parking spaces reserved for those with physical disabilities. The purpose of the current study was to determine just that. What factors influence why some people without disabilities choose to illegally park in handicapped parking spaces? More specifically, if attitudes affect behavior, do attitudes towards people with disabilities and/or attitudes towards handicapped parking affect one’s parking behavior?

The purpose of this research was to describe the extent to which non-disabled illegally park in handicapped designated areas and to determine what factors influence their decision, and/or what factors people cite to justify their behavior. Descriptive data was obtained through self-report in the form of a mailed questionnaire, which included questions that represented all three attitude components (cognitive, affective, and behavioral). The complete survey instrument can be found on page 78. Participants consisted of 250 individuals systematically chosen from the population listed in the Menomonie, WI telephone directory.

**Hypothesis:**

Research Hypothesis: Demographic differences (e.g. age, gender) play a part in abuse of handicapped parking.

Statistical Hypothesis: Demographic differences such as age and gender will have no effect on abuse of handicapped parking.

Research Hypothesis: Attitudes towards individuals with disabilities receiving special privileges influence parking behavior.

Statistical Hypothesis: Attitudes toward people with disabilities receiving special parking privileges will have no effect on parking behavior.

Research Hypothesis: Attitudes towards handicapped parking in general, influence parking behavior.

Statistical Hypothesis: Attitudes towards handicapped parking in general, will have no effect on parking behavior.

Research Hypothesis: The convenience aspect of handicapped parking influences parking behavior.

Statistical Hypothesis: The convenience aspect of handicapped parking will have no effect on parking behavior.

**Definition of Terms**

Multiple terms had to be defined in order to examine the research problem: What factors influence why some people without disabilities choose to illegally park in handicapped parking spaces? Specifically the terms, abuse of handicapped parking, attitudes toward persons with disabilities, demographics, attitudes toward handicapped

parking and convenience all were defined and used consistently throughout this study.

The following section explains definitions for each of these terms.

*Abuse of Handicapped Parking/Violators:* This term includes unauthorized parking in handicapped designated areas. For purposes of this study, abuse of handicapped parking will be defined as a comparison of responses on the researcher developed survey, “Handicapped Parking Questionnaire.” Specifically the last three questions on page one of the survey were compared to determine abuse of handicapped parking. These three questions were as follows: “Do you have a disability that requires the use of either handicapped license plates and/or a handicapped parking permit?”, “Do you use either handicapped license plates and/or a handicapped parking permit?”, and “Have you ever parked in a handicapped parking space other than when you or a person you were transporting had a disability and needed close access?”. The first two questions cover use of permit and ownership of permit. The literature suggests that violators frequently fraudulently obtain cards or use permits that belong to someone else. Comparison of responses on these questions will allow identification of those who abuse or violate handicapped parking but do not self-report. Self reported abuse/violation was also measured. If participants answered “No” to the first two questions and answered “Yes” to the last question, participants would be considered to have abused handicapped parking.

*Demographic differences:* This term includes characteristics of individual respondents that were hypothesized to affect parking behavior. Specifically demographic characteristics studied included age and gender.

*Attitudes toward people with disabilities:* This term includes an individual's thoughts, feelings and behaviors toward people with disabilities. For purposes of this study attitudes toward people with disabilities will be defined as responses to the Likert scaled statements number 3 and 4 on the researcher developed survey, "Handicapped Parking Questionnaire". These items (3 and 4) asked individuals to rate their extent of agreement with the following statements: "I feel people with disabilities receive too many special privileges" and "I feel many people who have handicapped parking plates or permits do not really need them."

*Attitudes toward handicapped parking:* This term includes an individual's thoughts, feelings and behaviors toward handicapped parking. For purposes of this study attitudes toward handicapped parking will be defined as responses to the Likert scaled statements numbers 1, 2, 5, and 9 on the researcher developed survey, "Handicapped Parking Questionnaire". These statements included: "I feel handicapped parking is abused by the non-disabled", "I feel there are too many parking spaces reserved for the handicapped", "It angers me when I see non-disabled people park in handicapped spaces" and "I feel it is unethical to park in a handicapped parking space".

*Convenience Aspect:* For purposes of this study, the convenience aspect will be defined as responses to the Likert scaled statements number 6, 7, and 8 on the researcher developed survey, “Handicapped Parking Questionnaire”. These items (6, 7, and 8) asked individuals to rate their extent of agreement with the following statements: “I feel it is okay to park in a handicapped space if I am only running in to the store for a minute”, “I feel it is okay to park in a handicapped space if there isn’t any place near by to park”, and “I feel it is okay to borrow a friend or family member’s parking permit”.

#### **Assumptions and Limitations:**

There are numerous potential limitations associated with this methodology when trying to generalize from the findings reported in Chapter 4. A self-report survey was used to gather data rather than direct observation of participant behavior. Parking in a handicapped parking space without the use of handicapped parking license plates or a handicapped parking permit is illegal. Therefore, participants were required to indicate whether or not they had done something (e.g. parked) illegal. Although the participants were assured that their responses were anonymous, some individuals surveyed may have felt uncomfortable about the survey and may not have responded honestly or may not have responded to the survey at all.

The method of recruiting participants for this study may also limit generalizability. Only individuals with a telephone and with a name listed in the telephone book were potential candidates for inclusion since an area phone directory was used to develop the survey mailing list. The telephone directory used in this study was updated one month after surveys were mailed. Thus, the sample was limited to the extent

that addresses were out-dated when the surveys were mailed.

There were also potential limitations related to potential selection bias associated with the use of a self-report, anonymous instrument. Individuals who have negative feelings towards individuals with disabilities and/or handicapped parking may have had negative feeling towards the survey and its questions as well. Therefore, they may not have wanted to participate in the study and therefore not responded to the survey. Since the survey was anonymous there was no way to identify if non-responders differed in any way from the participants whose responses are reported in the findings chapter of this study. Thus data from this study must be interpreted cautiously with attention paid to the characteristics of those who did respond. In this study, demographic data about respondents was collected in addition to parking behavior information. This does allow future readers to compare results and characteristics of this sample with results and characteristics of samples in other studies.

There were some difficulties related to definition of terms associated with this study as well. The definition of illegal parking used in this study reflected current law (i.e., parking in handicapped space without authorized permit or placard). Some people with restrictions that meet the legal *handicapped* definition may not follow through with the steps needed to obtain a parking permit. This is again important in interpreting any findings from this study. The survey included two disability related questions which were “Do you have a disability that requires the use of either handicapped license plates and/or a handicapped parking permit?” and “Do you use either handicapped license plates and/or a handicapped parking permit?” There was not additional detailed disability and mobility limitation information that could identify individuals who might not be aware of their

potential eligibility for handicapped parking privileges.

Finally, due to the complexity of attitudes and factors such as cognitive dissonance and the conditions in which people are most likely to act in accordance with their attitudes, it will be difficult to determine a cause and effect relationship between attitudes and parking behavior on the basis of this self report survey information.

## Review of the Literature

### Historic Overview

The American's with Disabilities Act (ADA) mandated that all public accommodations were to be accessible to people with disabilities by January 26, 1993 (Fletcher, 1997). The ADA covers an estimated 43 million Americans, resulting in a ratio of approximately 1 in 6, making individuals with disabilities the largest single minority group other than women, protected by non-discrimination laws (Little & Marini, 1995). The ADA included specific provisions for sufficient reserved accessible parking spaces for individuals with disabilities, which were outlined in the introduction. This long-awaited legislation was intended to positively affect the lives of people with disabilities, 72% of who rely on private automobiles for their transportation (Fletcher, 1997).

However, going on almost ten years later, inappropriate use of these reserved spaces by non-disabled drivers occurs frequently. According to Fletcher (1997), "researchers consistently report that the majority of cars parked in spaces reserved for people with disabilities are parked there illegally (p.318). This next section will include a review of the literature of what is known so far about illegal handicapped parking. Specifically, what is the frequency and what are the forms of misuse, who is abusing handicapped parking, and what are some possible reasons for this abuse?"

## **Research in Related/Relevant Areas**

Frequency and forms of handicapped parking abuse. In order to understand the abuse of handicapped parking, it is important to understand what behavior constitutes illegal parking. It is also important to know how frequently such behavior occurs. In this section, the extent of the problem or frequency of parking abuse will be described. This discussion will be followed by a description of the various forms of illegal parking behavior.

*Frequency of handicapped parking abuse.* An important early pre-ADA study of parking behavior showed that abuse of handicapped parking was common. Cope and Allred (1990) reported on a study done by Mathews in 1981. Mathews studied a variety of both public and private locations for a total of 40 hours. The study did not contain any experimental manipulations or statistical analyses, but rather focused on the frequency of handicapped parking violations through direct observation and interviews with violators. Of the 328 parking incidents recorded, 76.1% were identified as violators meaning they did not have a special tag and did not have a visible disability. The 11.3% who did not have a special tag but appeared to have a physical disability were still considered compliers. Only 10.6% of parkers were described as legal compliers, meaning they had both a tag and a visible disability, and 2.1% were noted to be legal violators; they had a special tag, but no visible disability. One potential complication in interpreting results of this study was the use of obvious physical disabilities to determine compliance. People who were included in the violators group could easily have had heart disease or other endurance reducing disabilities without obvious physical signs.

As previously mentioned in the introduction, Taylor (1998) found the rates of violations were high in both urban (76.63%) and town (44%) locations. In this study, participants were 300 drivers who parked their vehicles for longer than 10 seconds in parking spaces reserved for individuals with physical disabilities. A violation was counted if a vehicle without a handicapped permit, sticker, or license plate was parked in a handicapped space for longer than 10 seconds. Observers were consistent in rating violations; observer rating reliability was 98%. Of the 291 drivers observed parking in the handicapped spaces in the urban locations, 233 or 76.63% parked illegally. Of the 175 drivers observed parking in the town locations, 77 or 44% parked illegally.

A study by Cope and Allred (1990) also examined the frequency of abuse of handicapped parking, as well as other variables that will be discussed later. Researchers found an over-all violation rate of 62%. In this study the subjects were the drivers of the 266 vehicles parked in the handicapped parking spaces of three supermarkets in well-developed commercial districts in Greensville, North Carolina.

Target spaces were observed for 26 consecutive weekdays between 4:30 and 6:00pm by one or two trained observers. Target observations were recorded for vehicles only when the driver actually got out of the car and went into the store. In this study a driver was considered to be a violator if no official handicapped designation was found on the vehicle, even if the driver was obviously physically disabled. This more stringent standard (handicapped designation) was used due to North Carolina's state law stating that only legally tagged vehicles may make use of handicapped zones. Of the 266 total observations, 165 observations (62%) were cars not displaying a handicapped identification plate or tag. There were no observations of obviously physically disabled

individuals without a plate or tag, and on only six days did the percentage of legal parkers exceed that of illegal parkers.

In yet another study that examined the frequency of handicapped parking violations (Fletcher, 1997) the number of illegal handicapped parkers was also greater than the number of legal parkers. In this study three handicapped parking spaces were observed which were designated as reserved by the traditional wheelchair symbol as well as by black and white signs which read “reserved parking” and “tow away zone.” Legality was based solely on whether or not the vehicle displayed a disability parking permit. Out of the 429 observed parkers, 207 were considered legal parkers, while 222 drivers were parked illegally.

Thus in all studies cited, illegal parking occurred more frequently than instances of legitimate use of reserved handicapped parking spaces. In each of these studies display of handicapped parking designation (placard) was used to determine legal/illegal parking. Limits related to the methodology used in these studies (display of identification) may actually underestimate abuse of handicapped parking. There are other forms of handicapped parking abuse as will be described in the next section.

*Forms of handicapped parking abuse.* There are several ways in which handicapped parking is abused. So far the discussion has focused mostly on individuals without disabilities, handicapped parking permits or license plates who illegally park in handicapped parking spaces. However, as Little and Marini (1995) pointed out, studies suggest that one of the major potentials for abuse of handicapped parking may occur when handicapped placards are displayed but are used by non-disabled friends or family members while the individual with the disability is not present. According to the

Wisconsin Department of Transportation which complies with the American's with Disabilities Act, a parking identification card may be used in lieu of disabled license plates only "when the person with the disability is present" (<http://www.dot.state.wi.us/dmv/displate.html>).

Even the presence of a disability does not guarantee lawful use of handicapped parking. Legal use of such parking requires that the handicapped parking space be used for the purpose of accommodating the person with disability. As Stothers, (1997) points out, handicapped parking is considered abused when the individual with the disability is present, but merely sitting in the car while the non-disabled person goes shopping.

Not everyone who is issued a parking permit meets the legal standard of parking need. According to Rausch (1996) the most prevalent problem in the misuse of handicapped parking is that doctors are too quick to certify disabilities. Some physicians are issuing disabled certifications to their patients without first reviewing what state law considers a handicap. The municipality cannot refuse to issue a handicapped parking permit to anyone who has been certified by a doctor as disabled, even if the person doesn't qualify under state law. The disabled parking permit application requires the doctor to check the specific disability the person has before the parking permit is issued. The most common disability cited by physicians is the "inability to walk 200 feet without stopping to rest"; municipal officials noted that this is also the category of disability most often inappropriately used when issuing permits. There are also potential opportunities for abuse/misuse of parking when the person's condition improves. In some states handicapped parking placards are automatically renewed every four years without an updated doctor's certification (Rausch, 1996).

“Who” is abusing handicapped parking? Through review of the literature it is very difficult to determine any commonality amongst those “who” abuse handicapped parking, especially when there is little research reporting on demographic differences such as age, gender, or race, and when what little is reported is very inconsistent. As Cope and Allred (1990) pointed out, methodological inconsistencies as well as the use of different dependent variables across studies make it difficult to form a clear picture of the problem of handicapped parking.

In a 13-hour observational study by Little and Marini (1995) which took place in the parking lot of a local mall and discount store in a mid-southern town of 50,000 residents, 135 vehicles were observed using the handicapped parking spots. Ninety-one of the 135 were considered to be abusers. The abuses were committed by equal numbers of males and females (49% and 51% respectively). Generally, the abuses were committed by those who appeared to be in the 70-80 age brackets. However, it was reported that many abuses occurred in the 30-40 age bracket as well. Race was not reported.

In the study by Cope and Allred (1990), which is described in more detail in the frequency section of this review of the literature, demographic information was found to be similar for gender, but very different for age. There were no statistically significant differences between the percentages of males (59.2%) and females (64.7%) observed parking illegally. There was however, a higher violation rate for drivers estimated to be below the age of 25 (94.7%) than for those above 25 (56.6%). This study, which did examine race, found that although there were more white violators than black violators (96 compared to 69), the percentage of blacks who parked illegally was 80.2%, significantly higher than the rate of 53.3% for whites.

Possible reasons for abuse As mentioned previously, there have been very few research studies on why people abuse handicapped parking. In fact, in reviewing the literature, only one behavioral survey (Cope & Allred, 1990) was identified. This survey was undertaken at two local shopping malls in Greensville, North Carolina. A total of 246 people walking in the center sections of the malls were stopped randomly and asked to answer several questions about “traffic related behavior”. Each individual who chose to participate was then asked if they had ever inappropriately parked in a handicapped parking space, why or why they had not used the space, and if they had a legal handicap. Of the 246 contacted, 177 stated that they had never parked in a handicapped space. Only one respondent indicated they had a handicap and had legal identification on their vehicle.

Relatively few respondents gave a reason for using or not using handicapped spaces. However, some of the most common reasons given for illegally using the handicapped spaces were: could not see or read the sign, convenience/ in a hurry, and nothing else available. The reasons given most often for not illegally using these spaces were: it’s against the law, it’s not right, it’s not respectful to others, and others need it more (Cope & Allred, 1990).

Reasons people avoid parking illegally Although the percentage of those admitting to illegally using handicapped parking (28%) is substantially lower than the percentages of observed illegal parking in various studies, from a stand point of social desirability, these results should not be surprising. As Cope and Allred (1990) pointed out, “It is difficult to admit publicly to violating social or legal norms in general, but when the practical necessity of the moment takes priority, people may act in ways

contrary to what they know is acceptable, especially if the perception of risk is low” (p. 255).

This notion can be further supported by looking at what is effective in decreasing violations. Two methods that are moderately effective for decreasing the violation rate are implied social sanctions and the threat of legal sanctions (Fletcher, 1997).

*Social sanctions.* Several studies have shown that social sanctions can be somewhat effective in decreasing abuse of handicapped parking. As mentioned earlier, adding a sign that read, “Warning This Space Watched by Concerned Citizens” (Cope, Lanier, & Allred, 1995 p.321) was successful in decreasing illegal parking. Fletcher (1997) felt that even greater social control would result from having a concerned citizen not only present, but sitting in a wheelchair. In this later study, the number of violators dropped from 129 to 93 when a person in a wheelchair sat in front of the observed spaces.

Even something as simple as the addition of an upright sign, rather than just a ground symbol, can decrease handicapped parking violations. As Cope and Allred (1990) point out, a ground symbol can fade over time, and can also allow the violator to appear less conspicuous once the ground markings is covered by the offending vehicle. To prove this, a study was conducted observing parking spaces at three separate sites. At site 1, spaces were marked with a handicap symbol painted on the ground. At site 3, the handicap symbol was printed on a sign, and at site 2, spaces were marked with both a sign and a ground marking. The violation rate was significantly higher at site 1 (73.7%) where the ground markings could be covered by the offending vehicle, than at site 2 (57.1%) and site 3 (48.5%) where there was an upright sign present.

*Legal sanctions.* The other method that has been moderately effective for decreasing violation rates, as mentioned, is threatened legal sanctions. Fletcher (1997) reported on previous studies that found signs warning \$250.00 fines, increased police enforcement, and ticketing had all been effective in decreasing violation rates. However, as Little and Marini (1995) pointed out, during one study, police were observed in the area on only two occasions, and on neither occasion were they enforcing the parking code.

Abusing handicapped parking gets even easier for individuals using stolen or counterfeit placards, or placards issued to friends or family members. The only time a car can be legally parked in a handicapped space with a placard is when the individual with the disability is in the car. That individual must have a “pink slip” proving they are the person with the disability that the placard belongs to. If they do not have a “pink slip” they are liable for a ticket. However, such portable placards are “easily transferable, most often requested, and seldom if ever checked by police” (Little & Marini, 1995 p. 53).

Perhaps illegal parkers’ previous experience with low rates of enforcement decreases the effectiveness of threatened sanction. This may account for the surprising results of a study by Fletcher (1997). The purpose of this experiment was to determine if drivers would be less likely to illegally park in handicapped parking spaces with the presence of an adjacent “Reserved for Police Cars Only” parking space. During the first six days of observation, the “Reserved for Police Cars Only” sign was not present. During this time 144 drivers were observed illegally parking in the three handicapped parking spaces. During the second six days of observation with the addition of the “Reserved for Police Cars Only” parking space, the number of illegal parkers dropped to

97. However, during that time 52 drivers were observed parking in the “Reserved for Police Cars Only” parking space. When the 52 drivers who illegally parked in the space reserved for police cars were added to the 97 who illegally parked in the handicapped parking spaces, the resulting 149 illegal parkers was slightly higher than the 144 individuals who illegally parked during the first six days of the experiment. Therefore, handicapped parking violations decrease with the presence of an adjacent space “Reserved for Police Cars Only” not because of increased perceived threat of legal sanction, but rather because the additional reserved space spread the violations over four illegal parking spaces instead of three (Fletcher, 1997).

### **Theory/Research Literature Specific to Topic**

Parking and convenience. It is important to note that the findings from the preceding study also support the previously mentioned idea that people will illegally park when the benefit of convenience (i.e., access, proximity, and availability) outweighs the perceived risk (i.e., legal or social consequences). Quite obviously, threat of police sanction was not an effective deterrent to illegal parking in this study.

Cope and Allred (1990) similarly found lowest handicapped parking violation rates at a site where an even more convenient and easy to use (although equally illegal) fire lane served as an alternative option for short-term parking. Another example supporting the convenience factor was the finding that in one study the violation rate during rainy weather was 75% compared to 59.7% during clear weather (Cope & Allred, 1990).

Parking and attitudes. Last, but not least, the American's with Disabilities Act of 1990 (P.L. 101-336) indicated that full participation in society of the 43 million Americans with disabilities' was severely compromised by attitudinal and environmental barriers (Patterson & McKenzie, 1995). The role of attitudes in everyday life and behavior was discussed. Attitudes were said to play a significant role in every day life and behavior. Attitudes about handicapped parking and about persons with disabilities in general, whether positive, negative or ambivalent, may affect parking behavior since attitudes are learned tendencies to evaluate some object, person, or issue in a particular way, and can also predispose a person to respond cognitively, affectively, and behaviorally to an object, person, or issue in a particular way.

All motor vehicles displaying handicapped identification are granted the following privileges when the person with the disability is present:

- Parking in places reserved for people with a disability;
- Exemption from time limitations in parking with a ½ hour or more limit;
- Exemption from payment in metered parking places with ½ hour or more limit.
- Upon request, a driver who is disabled may obtain fuel from a full-service pump at the same price as fuel from a self-service pump. This applies at location where fuel is sold at retail from both full and self-service pumps. The retailer is not required to provide any other service that is not provided to customers who use a self-service pump (<http://www.dot.state.wi.us/dmv/displate.html>).

Such privileges may result in resentment that increases handicapped parking abuse. Stothers (1997) reported that many non-disabled people complain that there is too much parking reserved for people with disabilities and that it is located in prime areas, and that most spaces stay empty. Stothers went on to discuss how the San Diego Union Tribune's editorial board blamed government for the abuse of handicapped parking, stating that parking privileges granted to those with disabilities created "parking envy" on the part of many drivers. This resentment would support the idea that negative attitudes towards handicapped parking, people with disabilities, or towards people with disabilities receiving special privileges could be another possible reason for abuse of handicapped parking.

### **Critique of the Literature**

There are numerous methodological difficulties when trying to understand illegal parking. First of all, there are measurement difficulties in using direct observation when common types of illegal parking are considered. In most of these studies, violation rates were determined on the basis of whether a parking permit was displayed. Such observations do not include possible abuses that occur when a parking permit is used that does not belong to the user, or when the permit is counterfeit or falsely obtained.

On the other hand, some past studies relied on physical observation regarding the presence of a visible disability to determine rates of illegal parking. Determining violation rates on the basis of data collected in this way is complicated by the potential presence of hidden disabilities that require parking access. Health issues such as cardiac conditions can severely impair mobility with no obvious signs of disability. It is

impossible to determine the legitimacy of disability based solely on the appearance of physical disability. Thus, violation counts based on lack of obvious mobility impairment may overestimate the number of handicapped parking violations.

The literature also raises questions about whether observational methods may under-count violations. There have been inconsistencies in the way physicians certify disabilities. With the addition of a group of people, often referred to as “legal abusers”, (individuals who have legal handicapped parking license plates or placards, but do not have serious functional impairment) the measurement of handicapped parking abuse problem becomes even more complicated.

Another significant limitation in these observational studies is the lack of information about what motivates the observed behavior. Relying on observational methods may provide baseline information about the seriousness of the problem of illegal parking, but it provides little information about the causes of such behavior. The need to design effective interventions to promote parking compliance makes this lack of information about parking rationale a critical research issue.

Some prior studies have used self-report to gather information on reasons for illegal handicapped parking. However, past research showed that people may underreport their illegal handicapped parking behavior. A number of explanations for this phenomenon have been identified in the literature, including fear of social sanction and the desire to respond in socially acceptable ways. These factors can substantially affect the likelihood that people will report violations or report violations honestly. Such under-reporting may compromise the utility of data obtained through self-report.

There have been studies that described successful interventions to deter illegal parking. However, these experiments involved the use of threatened social or legal sanctions that were very inconsistently enforced. A major limitation in these studies was the limited follow-through with the threatened sanction. For instance, in one study signage indicated that “concerned citizens” were watching the reserved spaces. In another study a sign indicated that increased fines for illegal parking were in force. When such sanctions are not stringently and consistently enforced, they have little long-term impact on behavior. According to past research across numerous studies, sanctions lose their impact on parking behavior because of lack of enforcement.

Finally, very few studies have included data on the demographics of “who” is abusing handicapped parking. Limited knowledge in this area also substantially limits understanding of parking behavior.

### **Summary of What is Known and Unknown**

As previously stated, methodological inconsistencies and the use of different dependent variables across studies make it difficult to form a clear picture of the problem of handicapped parking. It is known that handicapped parking abuse is a big problem that occurs quite frequently. It is known that there are several different forms or ways in which handicapped parking is being abused. As discussed, increased social and legal sanctions have been moderately successful in decreasing abuse, but the decreases are still only minimal and often inconsistent. What is not known, however, is why handicapped parking is so frequently abused.

Some researchers have postulated the convenience associated with handicapped parking (i.e., ease of access, proximity, and availability) outweighs the perceived costs

(i.e., legal or social consequences) and that this is what motivates individuals to illegally park in handicapped spaces. However, the choice to illegally park in a handicapped parking space is still a choice or a decision one makes regarding their behavior. It is known that attitudes affect the way one thinks, feels, and behaves. These attitudes may be positive, negative, or ambivalent. Either way, attitudes can predispose one to act in a particular way. There is, however, a huge gap in the literature pertaining to whether or not one's attitudes towards handicapped parking or individuals with disabilities, influences handicapped parking behavior. The current study attempted to address some of these gaps in the literature as will be discussed in the next section, methodology.

## **Methodology**

This chapter will describe the research questions to be studied, procedures, the participants on which the study is based, and how they were selected for this study. In addition, the instrument used to gather the data for this study will be described along with the procedures for collecting and analyzing the research data. Finally, this chapter will conclude with some methodological strengths and limitations associated with the methods used to answer the research questions. The first section, research questions and definitions of terms begins below.

### **Research Questions**

The research problem studied was, “What factors influence why some people without disabilities choose to illegally park in handicapped parking spaces?” The research problem was studied by examining data related to four main research questions.

They were:

1. Do demographic differences (e.g. age, gender) play a part in the abuse of handicapped parking?
2. Do attitudes towards individuals with disabilities receiving special privileges influence parking behavior?
3. Do attitudes towards handicapped parking in general influence parking behavior?
4. Does the convenience aspect of handicapped parking influence parking behavior?

## **Procedures**

A self-report researcher designed survey was used to gather data related to handicapped parking behavior. Specifically residents in the Menomonie area were systematically selected from the local telephone book and mailed a survey exploring demographics (age and gender), attitudes toward people with disabilities, attitudes toward handicapped parking and convenience as factors to explain the choice to violate laws prohibiting parking in handicapped accessible spaces except by those authorized. Residents were instructed to exclude any identifying information and return completed surveys in an enclosed return address envelope.

The research questions were answered by examining data related to each of the factors hypothesized to influence the decision to violate parking prohibitions. This required identification of parking violators. Specifically, abuse of parking or violation was measured by responses to the questions “Do you have a disability that requires the use of either handicapped license plates and/or a handicapped parking permit?”, “Do you use either handicapped license plates and/or a handicapped parking permit?”, and “Have you ever parked in a handicapped parking space other than when you or a person you were transporting had a disability and needed close access?”. If participants answered “No” to the first two questions and answered “Yes” to the last question, participants would be considered to have abused handicapped parking. A second methodological technique was used as a check on the previous self-report. Responses were compared on the first two statements “Do you have a disability that requires the use of either handicapped license plates and/or a handicapped parking permit?” and “Do you use either

handicapped license plates and/or a handicapped parking permit? The literature suggested that people illegally parked without placards or permit, but also used other people's parking permits or falsely obtained permits for themselves. Comparison of responses on these two was used to identify of individuals that engaged in such behavior.

Self-reported parking behavior was compared to the results of the survey examining 4 specific factors hypothesized to influence parking behavior. These were demographic differences, attitudes toward people with disabilities, attitudes toward handicapped parking and convenience. Demographic differences included age and gender. Attitudes toward people with disabilities were measured by responses to the statements "I feel people with disabilities receive too many special privileges" and "I feel many people who have handicapped parking plates or permits do not really need them." Attitudes toward handicapped parking were measured by examining responses to the statements, "I feel handicapped parking is abused by the non-disabled", "I feel there are too many parking spaces reserved for the handicapped", "It angers me when I see non-disabled people park in handicapped spaces" and "I feel it is unethical to park in a handicapped parking space". Finally, convenience was measured by examining responses to the statements: "I feel it is okay to park in a handicapped space if I am only running in to the store for a minute", "I feel it is okay to park in a handicapped space if there isn't any place near by to park", and "I feel it is okay to borrow a friend or family member's parking permit".

The quantitative data related to parking behavior rationale was supplemented by the inclusion of an open-ended question asking that violators provide their own reasons for choosing to park illegally. This data was compared to information from analysis of

survey responses related to each of the 4 variables that were hypothesized as handicapped parking explanatory factors.

### **Population, Subjects, and Selection of Sample**

Subjects for this study were chosen through a systematic sample of residents whose names were listed in the 2000-2001 Menomonie, Wisconsin telephone directory. This telephone directory contains listings of Menomonie residents along with residents of neighboring towns. Population size was then based on the 17,648 listings in the telephone directory. Sample size included 250 individuals who were systematically chosen from the Menomonie phone book. These 250 individuals were systematically selected by dividing the total number of listings (17,648) by 250 (which equals 70.59) to determine the Kth number (70). Therefore every 70<sup>th</sup> listing in the phone book was then highlighted. If the 70<sup>th</sup> listing was a business, church, computer line, or a listing in which no address was given, the next appropriate listing was then selected. This process was repeated until 250 listings were selected. The 250 subjects were then mailed a self-report, anonymous survey.

### **Instrumentation**

The instrument used in this study titled, "Handicapped Parking Questionnaire", was a researcher developed instrument. The decision to develop this instrument rather than using a pre-existing instrument for the study was based on the following factors. In review of the literature, several standardized instruments used to measure attitudes towards persons with disabilities such as The Attitudes Toward Disabled Persons Scale (ATPD) and The Disability Rights Attitude Scale (DRAS) were identified (Hernandez, Keys, Balcazar, & Drum, 1998). However, these instruments were used to directly

measure attitudes towards individuals with disabilities and did not contain any questions related to handicapped parking and would have required a much greater amount of time and effort on behalf of the participants. Also, in the cover letter that accompanied the survey (see p.77) participants were informed that the study was on handicapped parking and why it is abused. If the survey required too many responses that did not directly relate to handicapped parking, the subjects may have felt deceived, possibly resulting in a lower response rate.

Furthermore, as Antonak and Livneh (2000), point out, measurement experts suggest the use of indirect attitude measurement methods to obviate threats to the validity of attitude data. One indirect method is the projective technique. This is when respondents are aware that they are being observed or measured, but are unaware of or are unclear about the purpose of the measurement situation.

The development of the “Handicapped Parking Questionnaire” allows for research on the abuse of handicapped parking while also utilizing the projective technique as an indirect method to measure attitudes discretely which will then allow for the opportunity to compare attitudes with abuse of handicapped parking. In addition, because there are the three components of attitudes (cognitive, affective, and behavioral) the survey questions were developed to target the subject’s thoughts, feelings, and behaviors on the issue of handicapped parking. The instrument used in this study was constructed for the purpose of first, identifying some demographic information about individuals to compare to their parking behavior, and secondly to determine their thoughts, feelings, and behaviors on the issue of handicapped parking.

The instrument was a self-report, mailed, anonymous survey. The survey consisted of several demographic questions. Specifically the survey had items related to gender, age, and whether or not the individual had a disability that required the use of handicapped parking license plates or a parking permit. The survey continued with several nominal questions that targeted the subject's behavior, including the question of whether or not they had ever parked in a handicapped parking space. The third section of the survey consisted of questions measured on a Likert scale that focused on the subjects attitudes towards handicapped parking, attitudes towards people with disabilities, and the convenience factor (e.g. "I feel people with disabilities receive too many special privileges", response choices included: "Strongly Agree," "Agree", "Undecided", "Disagree", or "Strongly Disagree")

Finally, the last item on the survey was a question that allowed subjects an opportunity to explain why they illegally parked in a handicapped parking space if they had ever done so. Specifically this question was stated as, "If you do not have handicapped parking plates or a parking permit but park in handicapped parking spaces, please explain why" which was followed with blank lines so the participant could write in a response. A complete sample of the instrument can be found in Appendix B.

### **Procedures for Data Collection**

Following the approval of the survey instrument by the Human Subjects Review Board, the data collection began. The 250 subjects were mailed the survey along with a self-addressed stamped envelope and a cover letter explaining to them who was conducting the study, the purpose of the study, and a due date by which the survey was to be mailed back. The surveys were mailed out on November 10, 2001 at 5:00am, and were

due back by November 19, 2001. However, due to many surveys being received later than the due date, data collected up to the 27<sup>th</sup> of November was included in the study. Results of the surveys are reported in the findings that follow this discussion of study methodology. The next section includes a description of procedures for data analysis.

### **Procedures for Data Analysis**

Survey responses were recorded and tabulated. Descriptive statistics were used to analyze survey responses including frequencies and percentages of the entire sample that endorsed each item response. Group level data included computing means and standard deviations for each of the four factors considered to be reasons that people chose to violate handicapped parking law. Differences between the total sample and violator means were then to be compared using a T test of means. The T test was planned as a way to determine if demographic, attitudinal or convenience factors were substantially different between the groups thus explaining the decision by violators to ignore the law. When returned surveys were compiled, reported violation rates were so low that no meaningful comparison could be made. As a result the T tests of means were not conducted. The data was thus analyzed only by making comparisons to group level data (percentages and means). Additional information regarding specific results can be found in the findings chapter.

### **Strengths and Weaknesses**

*Strengths.* A great strength of this research study is the level of anonymity the study adhered to, and the precautions that were taken to ensure this level of anonymity. Subjects were informed numerous times in the cover letter that accompanied the survey as well as in the consent portion at the beginning of the survey, that the study was

anonymous. Subjects were guided to not include their names or addresses with the returned surveys and were instructed to anonymously call the researcher or the researcher's advisor if they had any questions about the survey or the research study.

Another strength is in the way in which subjects were chosen. Subjects were chosen through a systematic sampling of the residents listed in the Menomonie phone book. Therefore all 17,648 residents of the Menomonie area had the same amount of chance to be selected for the study, and were not chosen based on any factors related to the research study. Also, beginning with such a large sample size (250) allowed for a larger representation of the population involved.

In addition, the study was based on a self-report mailed survey instrument. The study did not rely on researcher observations. This reduces the chance of observer bias and influence. Reducing bias and influence is particularly important in this study because of the subject matter. Disclosure of attitudes that may be socially unacceptable or illegal creates increased risk of biased reporting. Also, since attitudes can't be observed but powerfully influence behavior, observer ratings may be suspect. Instead findings reported in this study were the result of analysis of data from the self-reports of the subjects. Data was gathered using a clear, short, and direct survey instrument.

Finally, this research filled a gap on a subject about which little is known. This study examined excuses for illegal parking in handicapped spaces. It has been well documented through past research that there is a great deal of abuse of handicapped parking and that it is a big problem for individuals with disabilities who rely on handicapped parking as well as a costly concern on behalf of law enforcement. Perhaps

by better understanding why handicapped parking is being abused, more can be done to combat the problem.

*Weaknesses.* There are numerous limitations associated with this study just as there are with any method used to examine questions of interest. First of all, because the subjects were chosen through a systematic sample of the population listed in the Menomonie phone book and not through a randomized sample, there is sampling bias. The sample could differ to others in the area in ways unknown to researcher. The use of a set procedure is one method to reduce such bias. Also, because the sample size was only 250 there is sampling error. First of all, not everyone residing in the area have their name listed in the phone book, and secondly because only 250 residents were selected from the phone book for the study, there is potential that those sampled do not reflect the behaviors and attitudes of the larger population.

Another limitation to generalizing findings is that when asking people if they have ever parked in a handicapped parking space other than when they or a person they were transporting had a disability, which is illegal; there is a possibility that some people may not respond honestly. An attempt was made through procedures designed to guarantee anonymity to reduce this threat.

Also, the instrument used in this study is a researcher designed survey and not a pre-existing, standardized survey. No efforts were made to look at the validity or reliability of the instrument involved. Questions were chosen that were very concrete and would be easily answered by respondents. The addition of an open-ended question so that people could indicate their own excuses for illegal parking was included as a check on the quantitative data obtained through the survey.

## **Summary**

The current study included an examination of self-reported handicapped parking behavior, and the effects of attitudes and convenience on parking violation. Data was collected using a mailed, researcher generated survey to 250 residents of the Menomonie WI area. Data was compiled and analyzed to answer the research questions. Specifically frequencies and percentages of the sample that endorsed each item response were calculated. Group level data was computed including means and standard deviations. Total sample responses were compared to responses of those who had violated handicapped parking law. Specifically total sample and violator means related to each of the explanatory variables (demographics, attitude toward handicapped parking, attitude toward persons with disabilities and convenience) were examined. Results of the analysis are included in the next section.

## **Results**

The purpose of this study was not only to determine the extent to which non-disabled individuals illegally park in handicapped parking spaces, but also to explore “why” these individuals chose to abuse handicapped parking. More specifically, the purpose was to determine if attitudes towards handicapped parking or attitudes towards individuals with disabilities affect one’s parking behavior, or if abuse was strictly for reasons of convenience. This research was also intended to determine if demographic differences such as age and gender play a role in the abuse of handicapped parking.

### **Study Plan and Procedures**

For this study, 250 residents of the Menomonie, WI local area were systematically selected from the Menomonie telephone directory and mailed the “Handicapped Parking Questionnaire” to voluntarily complete and return. The “Handicapped Parking Questionnaire” was a researcher developed, anonymous survey created to identify individual demographic information to compare to reported parking behavior, as well as to determine respondents’ thoughts, feelings, and behaviors related to handicapped parking. The survey consisted of several demographic questions, followed by several nominal questions that targeted the subjects parking behavior, as well as questions measured on a Likert scale that focused on the subjects’ attitudes or thoughts and feelings towards handicapped parking and people with disabilities. Finally, the last item on the survey was an open-ended question that allowed violators to explain why they illegally parked in a handicapped parking space.

Of the 250 residents selected and mailed a survey, 30 surveys were “returned to sender” since individuals identified in the phone directory no longer resided at that address. In addition one person called to explain that he did not drive, and another 82-year-old woman called stating that her vision was too poor to complete the survey (thus precluding driving). Both non-drivers were instructed to disregard the survey.

The total sample size then included 218 residents of Menomonie WI. There were 109 residents out of a possible 218 sampled, who returned surveys resulting in a response rate of 50.0%. Not included in this response rate calculation or in the data presented here were 2 participants who only returned one of the two pages of the survey. There were 4 additional completed surveys that were received too late to be included in the analysis.

Demographics of the Sample. Some data related to personal characteristics of respondents were collected. Specifically age, gender and disability status were addressed on the survey. Characteristics of the sample are reported for comparison purposes. The sample was fairly evenly divided between males and females. There were 57 (52%) males, 51 (47%) females and 1 person who did not respond to this item (see Table 2). Respondents were not asked their specific ages, but indicated the age bracket they fit by marking the specified age range. Respondents were older with 35 (32%) of the 109 respondents indicating that they were 61 or older, and 97 respondents (89%) indicating that they were over the age of 30 (see Table 1). Each respondent was asked to indicate whether or not they had a disability that required the use of either handicapped license plates and/or a handicapped parking permit. Of the 109 respondents, 10 (9%) responded “Yes” to this question and the other 99 (91%) responded “No” (see Table 1). Individuals responding “Yes” to this question were still included in the total sample

Identification of Violators. Next the survey addressed the respondents' behavior regarding handicapped parking. Violating behavior was identified by self-report of illegal handicapped parking ("Have you ever parked in a handicapped parking space other than when you or a person you were transporting had a disability and needed close access?"). Two questions were compared to identify unreported violators, "Do you use either handicapped license plates and/or a handicapped parking permit?" and "Do you have a disability that requires the use of either handicapped license plates and/or a handicapped parking permit?" Comparing the responses of those with no disability who used a permit illegitimately revealed no additional violators. Since no additional violators were identified only the number of persons with disability and those that self-reported violation are included in Table 1.

**Table 1**

**Identification of Violators**

		Frequency	Percent	Valid Percent	Cumulative Percent
Handicap Permit	Yes	11	10.1	10.2	10.2
	No	97	89.0	89.8	100.0
	Missing	1	.9		
	Total	109	100.0		
Parked Illegally	Yes	6	5.5	5.5	5.5
	No	103	94.5	94.5	100.0
	Total	109	100.0		

As mentioned, one of the ways that violators were identified was by comparing need for parking (disability) to response that the participant had a permit or plates. When comparison was made between those who reported use of a permit and those reporting disability, only one additional respondent was identified as a potential violator. That respondent wrote that she had a permit, but used it only when transporting two sisters with significant disability related mobility impairment. As a result, no additional violators were identified by this method.

There were 6 violators identified using the other violation related survey question, “Have you ever parked in a handicapped parking space other than when you or a person you were transporting had a disability and needed close access?” Out of the 109 respondents, 5 (5.5%) responded “Yes” to having abused handicapped parking and the other 103 (94.5%) responded “No” as can be seen in the preceding table (see Table 2).

It is important to note that 2 of the 6 respondents that reported having parked illegally also reported having a disability that required the use of handicapped parking license plates and/or a handicapped parking permit. The notion that a respondent who, at the time of the survey was a legal handicapped parker but who may have abused handicapped parking before receiving a permit or placard was something that had not originally been considered. As a result the method was changed so that any respondent answering “Yes” to the question “Have you ever parked in a handicapped parking space other than when you or a person you were transporting had a disability and needed close access?” was determined to have abused handicapped parking, and are referred to as handicapped parking “violators” throughout the rest of this paper.

**Evidence related to Research Question 1: Do demographic differences (e.g. age, gender) play a part in the abuse of handicapped parking?**

The purpose of collecting demographic information on the individuals was to compare such information with respondents' reported parking behavior. Information was collected regarding the subjects' gender, age, and whether or not they had a disability that required the use of either handicapped license plates/permit. Total sample demographic information was then compared to violator demographics to determine if the number of violators was higher for a specific gender or age group. Demographic results are given in Table 2.

**Table 2. Demographics**

		Frequency	Percent	Valid Percent	Cumulative Percent
Total Sample					
Gender	Male	57	52.3	52.8	52.8
	Female	51	46.8	47.2	100.0
	Missing	1	.9		
	Total	109	100.0		
Age	18-21	3	2.8	2.8	2.8
	22-30	9	8.3	8.3	11.0
	31-45	34	31.2	31.2	42.2
	46-60	28	25.7	25.7	67.9
	61 or older	35	32.1	32.1	100.0
	Total	109	100.0	100.0	
	Violators				
Gender	Male	3	50.0	50.0	50.0
	Female	3	50.0	50.0	100.0
	Total	6	100.0		
Age	18-21	1	16.7	16.7	16.7
	22-30	0	0	0	16.7
	31-45	1	16.7	16.7	33.4
	46-60	1	16.7	16.7	50.1
	61 or older	3	50.0	50.0	100.0
	Total	6	100.0	100.0	

**Demographics Continued**

	Frequency	Percent	Valid Percent	Cumulative Percent
Total Sample				
Disability Yes	10	9.2	9.2	9.2
No	99	90.8	90.8	100.0
Total	109	100.0	100.0	
Violators				
Disability Yes	2	33.3	33.3	33.3
No	4	66.7	66.7	100.0
Total	6	100.0	100.0	

*Demographics of Reported Violators.* As seen in Table 2, out of the 6 reported handicapped parking violators 3 (50.0%) were male and 3 (50.0%) were female. Similar to the total sample, the bulk of the violators fell into the older age brackets with 5 (83.3%) of the 6 violators surveyed indicating that they were over the age of 30, as compared to a similar 11% (or 12 respondents) from the total sample. There were 3 (50.0%) indicating that they were 61 or older. As previously stated, 2 of the 6 reported violators indicated they had a disability that required the use of either handicapped license plates and/or a parking permit (see Table 1). The evidence related to this research question appears to show similarity between the demographics of the total sample and of violators. More detailed discussion and answer to the research question will be included in the Conclusions.

In addition to examining demographic influences on parking behavior, a third section of the survey consisted of questions/statements measured on a Likert scale that focused on the subjects' attitudes towards handicapped parking and attitudes towards people with disabilities as well as questions regarding the issue of convenience. Subjects were to respond by circling the number that corresponded with their level of agreement. Subjects were to circle (5) if they "Strongly Agreed", (4) if they "Agreed", (3) if they were "Undecided", (2) if they "Disagreed" and (1) if they "Strongly Disagreed" with the 9 questions/statements on this portion of the survey. Survey questions were created to measure one of three variables (attitudes towards handicapped parking, attitudes towards people with disabilities, and convenience). The questions were targeted to assess the respondents' thoughts and feelings on the issue, since thoughts and feelings are components of attitudes as well. Results of Likert scaled questions/statements are given in Tables 3, 4, and 5. The first of those, Attitudes towards people with disabilities is discussed in the following section, data related to the second research question.

**Evidence related to Research Question 2: Do attitudes towards individuals with disabilities receiving special privileges influence parking behavior?**

Responses to Likert scaled statements 3 and 4 were used to assess the respondents' attitudes towards people with disabilities. These statements included item (3) "I feel people with disabilities receive too many special privileges" and item (4) "I feel many people who have handicapped parking plates or permits do not really need them". Subjects endorsed their level of agreement with each statement. Frequencies, percentages, means, and standard deviations are included in the following table.

**Table 3****Attitudes Towards People with Disabilities**

	Likert Responses					Valid	Missing	Mean	Standard Deviation
	5	4	3	2	1				
Total Sample									
Item 3. Many privileges	3	4	8	40	53	108	1	1.74	.95
Item 4. Many don't need	10	30	29	26	13	108	1	2.98	1.18
Total Variable Mean								2.36	
Violators									
Item 3. Many privileges	0	0	0	2	4	6	0	1.33	.27
Item 4. Many don't need	1	4	0	0	1	6	0	3.67	1.79
Total Variable Mean								2.50	

Keep in mind that a score of “5” indicated strong agreement, and a score of “1” indicated strong disagreement. The total sample’s mean score for item (3) “I feel people with disabilities receive too many special privileges” was 1.74 and for violators was 1.33. Thus both groups strongly disagreed with the statement about special privileges for people with disabilities. The total sample’s mean score for item (4) “I feel many people who have handicapped parking plates or permits do not really need them” was 2.98 and the mean for violators was 3.67 (see Table 3). Again, evidence analyzed related to assumptions about the need of persons with disabilities was similar for both groups. Both

groups indicated that they were somewhat undecided on this point. This item had more variation in response with a standard deviation of a full level for the total sample (1.18) and almost two levels for the violators (1.79). Comparison of the total variable mean for attitudes toward people with disabilities demonstrated just how close the full group and the violators were with computed means of 2.36 for the total sample and 2.50 for the violators. Standard deviation scores indicated that there was considerable agreement within each of two groups for item (3) and varied responses within each of the two groups for item (4).

In addition to examining attitudes toward people with disabilities, the survey examined attitudes toward handicapped parking. Evidence related to the third research question is summarized in the next section.

### **Evidence related to Research Question 3: Do attitudes towards handicapped parking in general influence parking behavior?**

Responses to Likert scaled statements 1, 2, 5, and 9 were used to assess the respondents' attitudes towards handicapped parking. These statements included item (1) "I feel handicapped parking is abused by the non-disabled", item (2) "I feel there are too many parking spaces reserved for the handicapped", item (5) "It angers me when I see non-disabled people park in handicapped spaces" and item (9) "I feel it is unethical to park in a handicapped parking space". Survey results related to responses on each of these items are included in Table 4 on the next page.

**Table 4****Attitudes Towards Handicapped Parking**

	Likert Responses					Valid	Missing	Mean	Standard Deviation
	5	4	3	2	1				
Total Sample									
Item 1. Parking abused	27	40	22	13	5	107	2	3.66	1.12
Item 2. Too many spaces	6	13	13	41	34	107	2	2.21	1.18
Item 5. Angers me to see	60	31	10	3	4	108	1	4.30	1.01
Item 9. Unethical to park	67	19	7	5	11	109	0	4.16	1.33
Total Variable Mean								3.98	
Violators									
Item 1. Parking abused	3	1	3	0	0	6	0	4.17	.97
Item 2. Too many spaces	0	1	0	1	4	6	0	1.67	1.47
Item 5. Angers me to see	2	3	0	1	0	6	0	4.00	1.20
Item 9. Unethical to park	2	0	2	1	1	6	0	3.17	2.57
Total Variable Mean								3.92	

Again, a score of “5” indicated strong agreement and a score of “1” indicated strong disagreement, the total samples mean score for item (1) “I feel handicapped parking is abused by the non-disabled” was 3.66 and 4.17 for the violators. Thus the total sample was undecided about abuse of handicapped parking, while violators were slightly more apt to agree with the statement. The total sample’s mean score for item (2) “I feel

there are too many parking spaces reserved for the handicapped” was 2.21 and 1.67 for the violators. Thus violators were slightly more apt to strongly disagree with this statement. The total sample’s mean score for item (5) “It angers me when I see non-disabled people park in handicapped spaces” was 4.30 and 4.00 for the violators. Thus both groups agreed with this statement. Items 1, 2, and 5 then were responded to in similar ways by both the violators and the total sample with differences of about a half level (.50) on each item. There was a greater difference between the groups on the ethics question with a full point difference indicating that there was a difference in the level of agreement between the groups. The total sample’s mean score for item (9) “I feel it is unethical to park in a handicapped parking space” was 4.16 indicating agreement, while violators were undecided about the ethics of parking illegally with a 3.17 mean score (see Table 4). Comparison of overall variable means shows considerable agreement between the total sample and the violators regarding attitudes toward handicapped parking with means of 3.98 and 3.92 respectively. Standard deviation scores indicated that there were varied responses within each of the two groups for each of the items, but substantially varied responses from the violators for item (9).

The final reason for handicapped parking violation explored in this study was convenience. Evidence related to the convenience question, research question 4, is presented in the next section.

#### **Evidence related to Research Question 4: Does the convenience aspect of handicapped parking influence parking behavior?**

Responses to Likert scaled statements 6, 7, and 8 were used to assess the convenience factor. Specifically these questions asked, item (6) “I feel it is okay to park

in a handicapped space if I am only running into the store for a minute”, item (7) “I feel it is okay to park in a handicapped space if there isn’t any place near by to park”, and item (8) “I feel it is okay to borrow a friend or family member’s parking permit”.

**Table 6**

**Convenience Variable**

	Likert Responses					Valid	Missing	Mean	Standard Deviation
	5	4	3	2	1				
Total Sample									
Item 6. Park a minute	1	0	4	24	80	109	0	1.33	.64
Item 7. Only near spot	3	0	2	21	83	109	0	1.34	.77
Item 8. Borrow permit	2	2	2	17	85	108	1	1.32	.77
Total Variable Mean								1.33	
Violators									
Item 6. Park a minute	0	0	2	2	2	6	0	2.00	.80
Item 7. Only near spot	0	0	1	1	4	6	0	1.50	.70
Item 8. Borrow permit	0	1	1	0	4	6	0	1.83	1.77
Total Variable Mean								1.78	

Once again keeping in mind a score of “5” indicated strong agreement and a score of “1” indicated strong disagreement, the total sample’s mean score for item (6) “I feel it is okay to park in a handicapped space if I am only running into the store for a minute” was 1.33 and 2.00 for the violators. Thus both the total sample and the violators disagreed

with this statement. The total sample's mean score for item (7) "I feel it is okay to park in a handicapped space if there isn't any place near by to park" was 1.34 and 1.50 for the violators. Again there was very little difference between the groups with both violators and the general sample indicating that they strongly disagreed with this statement.

Finally, the total samples' mean score for item (8) "I feel it is okay to borrow a friend or family member's parking permit" was 1.32 and 1.83 for the violators (see Table 5).

Again, there were minimal differences in responses between the groups, although violators were slightly less strong in their response to borrowing another's permit.

Comparison of the total variable means demonstrated this agreement since the total sample (1.33 mean compared to violators 1.78) was only slightly stronger in their rejection of convenience as a justification for handicapped parking. Standard deviation scores indicated considerable agreement within each of the two groups for all items with the exception of the violator's responses to item (8), which indicated, varied responses in regard to whether or not it was okay to borrow a friend or family member's parking permit.

### **Qualitative Evidence related to Questions 2-4: Explanations for Illegally Parking in Handicapped Spaces**

The last item on the survey was a question that allowed respondents to explain why they had illegally parked in a handicapped parking space. Specifically the question was stated, "If you do not have handicapped parking plates or a parking permit but park in handicapped parking spaces, please explain why". Blank lines for a written response followed this open-ended question.

Although (as shown in Table 1) six respondents admitted to having parked in a handicapped parking space other than when they or a person they were transporting had a disability and needed close access, only three violators chose to respond to this question on the survey. All of these responses appeared to be related to convenience. The last response also appeared to suggest some negative attitudes toward handicapped parking. The three explanations were as follows:

- (1) Mostly it's done in a matter of convenience, without really stopping to think about the consequences of your actions.
- (2) Stupidity, laziness, when I was severely overweight it was easier access for me.
- (3) The one and only time I did I got a ticket at Leever's parking lot. I worked until 11:00pm and it was 25 below zero. I ran in the store to buy a gallon of distilled or clean water for my baby. That's all I got and came out and had a ticket on my car. I felt that there is better things and important jobs than for cops at that time of night monitoring parking lots. By the time my car was warmed up from work it was 11:30pm. Nice job at Menomonie Police Dept!!!"

As mentioned all three of the violators who provided reasons for their behavior cited some aspect of convenience. Many respondents who were not reported violators of handicapped parking chose to use this space for various comments on the issue of handicapped parking. Of these, 6 indicated the question was not applicable to them by writing "N/A", "I don't", or "Never have", 4 indicated they had parked in a handicapped space, but only when they were transporting someone with a disability or when they were

temporarily disabled themselves, and 1 respondent indicated they did not have a car, but if they had they would not park in a handicapped parking space.

A number of respondents who were not identified as violators responded to the specific content of this question. They provided information about why they did not violate, or described their own assumptions about others' behavior. The additional 10 respondents provided varied comments specific to reasons for parking violation. All of these responses were analyzed and grouped according to common themes. Five themes emerged from this analysis. Each theme reflected a common reason governing handicapped parking behavior. One response did not fit any theme. The themes identified included: *sensitivity and awareness* regarding the problem of handicapped parking abuse, *selfishness* meaning that the respondent felt that abuse of handicapped parking was selfish, *sanctions for abuse* meaning that respondents felt sanctions for illegal parking should be strengthened and lastly the *behavior of others* which included respondents' efforts to explain the reasons that others violated handicapped parking laws.

The theme labeled *sensitivity and awareness* included 2 responses as follows:

"I don't, but the jerks that do should be in the disabled person's shoes for a while if they are too lazy to walk a few feet", and "I do not, and I think many people feel as I about the subject. I honestly don't think about it much but saying that I respect the slots. I am able to walk and freely by the grace of God. So I park far away and walk. I need the exercise anyway."

The theme labeled *selfishness* also included two comments. These comments were:

"I as a person would never do this. It's not right and it's selfish", and "Because someone who really needs to park there could come at anytime."

There were 3 responses that appeared to fit the theme labeled *sanctions*. Specific sanction related comments were: “We don’t! I think there should be a stiff fine for people who use handicapped parking who aren’t disabled”, “I believe their car should be ticketed and towed away.” And “We need better enforcement of the signs by local and University Police. More education of the general public.”

Finally, the theme labeled *others* included comments addressing the behavior of others. There were three responses that seemed to fit the *others* theme. Those comments included “I do not and never have parked in handicapped parking spot. I do believe that people abuse it though”, “I don’t, but 2 of my associates use their non-driving handicapped friends’ parking permits and park in spaces all the time, even when the friend isn’t with them” and “I never do but I see people with something to hang on their rearview mirror that do not need them. Plus overweight people that have them, it’s not my fault they ate too much.” This last comment appeared to have some overtones of attitude about persons with disabilities and their need for handicapped parking. It was included in this *other* category because it did describe the behavior of others. If in fact it indicates a lack of education or awareness of the needs of persons with disabilities it could have been placed in the *sensitivity* category.

This section has reported evidence related to each of the research questions. Some of the findings were as expected, however there were some surprises. These surprises or unanticipated findings are discussed in the next section.

### **Unanticipated Findings**

Based on the information gathered through review of the literature, the number of violators was anticipated to be much higher than was found in this study. Observational

studies have shown that violation of parking laws occurs more frequently than legitimate use of handicapped parking. A slightly reduced violator rate compared to past observational based research was expected since this study relied on self-report. Self-report has been shown to underestimate violation because people fear social sanctions or wish to respond in socially acceptable ways.. Since under-report was expected, a very large pool of respondents was sampled. There were 250 surveys originally mailed. It was therefore expected that the number of reported violators would be large enough to make comparisons with the total sample. Actual report of violation was surprisingly low with only 6 violators identified. This precluded more detailed testing of the statistical hypothesis for each research question.

A second method was used to determine violators who did not report abusing handicapped parking with the addition of the survey question “Do you use either handicapped license plates and/or a handicapped parking permit?” This question was compared to the survey question “Do you have a disability that requires the use of either handicapped license plates and/or a handicapped parking permit?” If respondents indicated they did not have a disability requiring the permit, but responded “yes” to having a permit, this would suggest those individuals were in possession of a permit that was not theirs and would be considered violators. However, as mentioned there was only one respondent who reported having a permit and not having a disability who then explained the permit was for transporting her two sisters who had disabilities. Since abuse in the form of using a handicapped permit that belongs to someone else is a very common form of abuse, it was surprising that no additional violators were determined through this method.

As previously mentioned in Chapter 4, it had not initially been considered that an individual could report both having a disability and having abused handicapped parking. It was a surprise to see 2 of the 6 reported violators did indeed indicate both having a disability and having abused handicapped parking. However, the question asked if respondents if they *ever* parked in a handicapped parking space other than when they or a person they were transporting had a disability and needed close access. Therefore it was possible the violators indicating that they had parked illegally before the permit was issued.

The attitudes of the respondents were also consistently much more positive than was anticipated. This was evident in both the general sample and in the responses of violators. The group as a whole responded to the questions/statements on the survey in a positive manner. This was substantiated by the positive response noted to the open-ended survey question. Many non-violators chose to include their own comments expressing their opinions of how wrong it was to abuse handicapped parking.

Another unanticipated finding with the open-ended research question was that all 3 violators who chose to respond to this item cited reasons of convenience in their explanation for parking illegally. Although 1 of the 3 violators' response included overtones of negative attitudes toward handicapped parking as well, convenience was her primary response.

### **Summary of Findings**

As for Research Question 1, "Do demographic differences (e.g. age, gender) play a part in the abuse of handicapped parking?" as seen in Table 2, the male/female ratio was pretty evenly split for both the total sample 57 (52.3%) and 51 (46.8%) female, and 3

(50%) male and 3 (50%) female for the violators. Out of the 6 reported violators, 3 (50%) were in the 61 or older age bracket. However, the largest percentage of the total sample's respondents fell into this age bracket as well. Also, because the number of reported violators was so small, it was impossible to determine if the number of violators was higher for a specific gender or age group.

As for Research Question 2, "Do attitudes towards individuals with disabilities receiving special privileges influence parking behavior?" as seen in Table 3, Attitudes Toward People with Disabilities, the violators tended to disagree more strongly with the statement "I feel people with disabilities receive too many special privileges" than did the total sample. This difference is consistent with the null hypothesis that there would be no relationship between attitudes toward persons with disabilities and parking behavior. There was also evidence that tended to refute the null hypothesis. Violators did agree more strongly with the statement "I feel many people who have handicapped parking plates or permits do not really need them" when compared to the total sample. This would suggest that for the first statement (Item 3), the violators had more positive attitudes than did the total sample and for the second statement (Item 4), the total sample reported more positive attitudes towards people with disabilities than the violators. This data is inconsistent, but because the number of reported violators was so small, there was insufficient data to accurately examine any differences between the two groups.

As for Research Question 3: "Do attitudes towards handicapped parking in general influence parking behavior?" as seen in Table 4, Attitudes Towards Handicapped Parking, the reported violators tended to agree more strongly with the statement "I feel handicapped parking is abused by the non-disabled" than did the total sample, and

agreed slightly less than the total sample with the statements “ I feel there are too many parking spaces reserved for the handicapped”, “It angers me when I see non-disabled people park in handicapped spaces”, and “I feel it is unethical to park in a handicapped parking space”. Although this data would suggest that the reported violators’ attitudes towards handicapped parking are slightly more negative than the total samples’, as previously mentioned, the number of reported violators was too small to make any reliable sub-group comparisons.

As for Research Question 4: “Does the convenience aspect of handicapped parking influence parking behavior?” as seen in Table 5, Convenience Variable, the total sample disagreed slightly more strongly with the statements “ I feel it is okay to park in a handicapped space if I am only running into the store for a minute”, “I feel it is okay to park in a handicapped space if there isn’t any place near by to park” and “I feel it is okay to borrow a friend or family member’s parking permit”. However, differences in the mean scores were very minimal and once again because the number of reported violators was too small to determine if any differences were just due to chance, the ability to make sub-group comparisons was not possible.

The last item on the survey allowed violators to explain why they had abused handicapped parking. As previously mentioned, only 3 of the 6 reported violators chose to respond to this item. Of the 3 that did, 2 respondents cited reasons of convenience with no negative attitude overtones, and 1 respondent who also cited convenience went on to suggest that police enforcement for handicapped parking was unimportant and a waste of time which implied some negative attitudes towards handicapped parking. However, this was only 1 respondent’s opinion. The size of the violator sample precluded

comparisons or the ability to determine whether it was representative of others involved in the study, much less the population sampled.

## Conclusions and Recommendations

### Conclusions

The hypothesis that demographic differences such as age and gender would affect abuse of handicapped parking was not supported by the results of this research study. As discussed, the original plan was to complete a T test to compare the responses of the reported handicapped parking violators with the total sample's responses. However, because such a low number of respondents were reported handicapped parking violators, there was insufficient data to complete such analysis. Without such analysis, the null hypothesis could not be rejected. Evidence reported in findings indicated that the demographics of the violators were very similar to the demographics of the total sample. Therefore the answer to the research question is no, demographic differences do not explain handicapped parking violation.

The hypothesis that attitudes toward people with disabilities would affect parking behavior was also not supported by analysis of survey results. Again, the low rate of parking violators resulted in insufficient data to complete sub-group comparisons and statistically test the research hypothesis. Evidence did reveal a slight difference in responses to item (4) "I feel many people who have handicapped parking license plates or permits do not really need them". Both groups indicated they were somewhat undecided with this statement, with the violators' mean response (3.67) leaning more towards agreement than the total samples' mean response (2.98). Thus the answer to this research question was no, attitudes toward people with disabilities do not affect handicapped parking behavior.

The hypothesis that attitudes toward handicapped parking in general would affect parking behavior was also not supported by the results of the study. Evidence did show a difference of agreement with the statement “I feel it is unethical to park in handicapped parking spaces”, with the total sample indicating agreement and the violators indicating that they were undecided. Violators were also slightly more apt to strongly disagree with the statement “I feel there are too many parking spaces reserved for the handicapped”. The similarities between the groups on all of the handicapped parking attitude items resulted in mean scores for handicapped parking as a variable being almost identical for the two groups (total sample 3.98, violators’ sample 3.92.). Thus the answer to this research question was no, attitudes toward handicapped parking did not appear to affect illegal handicapped parking behavior.

The hypothesis that convenience would affect parking behavior was also not supported by the results reported here. There was an observed lack of difference between the responses of the two groups but there was insufficient data to test sub-group differences because of the low number of reported violators. However, qualitative data obtained via the open-ended question asking violators to explain why they had illegally parked showed that all 3 of the 6 respondents who responded to this item indicated convenience as a reason for illegally parking. Thus the answer to this research question is, perhaps convenience affects parking behavior.

*Alternative explanations:* This was an atypical sample. It is difficult to say how this may have affected results. As shown in the findings, only 11% of respondents were under the age of 30. This may have affected results and conclusions since past research showed higher rates of violation among the oldest and youngest parkers. The sample

tended to fall into the older age brackets listed on the survey with 32% of respondents indicating that they were 61 or older and 89% indicating they were over the age of 30.

A possible explanation for such a low number of aged 18-30 year old respondents could have to do with the study setting. This study took place in Menomonie, WI. Menomonie is a college town, home of the University of Wisconsin Stout. Individuals were systematically selected using the Menomonie 2000-2001 telephone directory which was the newest available, but the directory was nearing expiration. As mentioned, there were 30 surveys marked "return to sender" since the individuals selected no longer lived at the address listed in the phone book. Many of the 'return to senders' may have been college students aged 18-30 whose addresses listed in the phone book were not their permanent addresses. Another possible explanation could be that individuals in the older age brackets may have been retired, thus allowing them more time to complete the survey. Individuals in the older age brackets may have just placed more importance on completing and returning the survey.

As previously discussed, there were a very low number of reported handicapped parking violators (6 out of 109). There are several possible alternative explanations for this surprising finding. One possible explanation could be that selected subjects who did not return the survey were handicapped parking violators who did not wish to respond in a socially unacceptable way. Also since handicapped parking violation is illegal, violators may have feared legal sanctions despite anonymity assurances. This explanation is less plausible because of the overall positive responses observed in this study. Participants also had a very positive response to the last item on the survey, which, because of its open-ended nature provided freedom for people to make numerous comments in support

of handicapped parking. This evidence suggests that individuals took the survey seriously and so would be less apt to censor their comments (respond in a socially acceptable way).

Cognitive dissonance theory is one alternative explanation for such positive responses to the survey questions by violators. As explained in the introduction, cognitive dissonance occurs when behavior conflicts with attitudes resulting in an uncomfortable state of tension. If one is able to rationalize their behavior this conflict and tension is eliminated or avoided. If one is unable to explain their behavior, the person may change their attitude so that it is in harmony with their behavior. The violators' responses to most attitudes toward handicapped parking items were in close agreement with the total sample indicating overall positive attitudes toward handicapped parking. There was one item on which ratings diverged. As seen in Table 4, the total sample agreed with the statement "I feel it is unethical to park in a handicapped parking space" while the violator mean indicated that group was undecided on the ethics involved.

Cognitive dissonance theory would suggest that for violators to say that violation was unethical would imply that they were unethical. This would result in an uncomfortable state of tension so violators would be less apt to agree with the statement that to park illegally was unethical. It might be expected that the people who needed handicapped parking would see violation as unethical. Examination of individual violator responses showed that one person with disability strongly disagreed and one strongly agreed with this statement. It is possible that the person with disability who strongly disagreed was a person who illegally parked because of mobility restrictions but before they received a permit. That person would then not see their own violating behavior as unethical. The other person with disability did strongly agree that violation was unethical.

Other violator responses were mixed with 1 violator strongly agreeing and 1 violator disagreeing that handicapped parking violation was unethical. There were 2 additional violators who indicated that they were unsure. It is interesting to note that the overall undecided mean score for the group could indicate a fairly high level of honesty in response by violators. If cognitive dissonance was in operation, the fact that not all violators said they felt it was ethical to illegally park could be an indication that rather than answer in a self-serving manner, respondents chose to indicate they were uncertain.

The number of violators was expected to be higher was because violation rates in the observational based literature were much higher. However, much of the literature reports studies done in the 1990s. Lower than expected violation rates in 2001 could reflect a more educated, disability sensitive population. There is another plausible explanation related to this being a very recent study. One past study (Little & Marini, 1995) showed that people aged 70-80 committed the most parking violations. Perhaps at the time of that study some of those older violators could have been eligible for handicapped parking permits but were more unaware of their rights than individuals in the same situation are today. In contrast, another study discussed in Chapter 2 (Cope & Allred, 1990) indicated that the number of violators was higher for individuals under the age of 25. Therefore, a possible reason for such a low number of violators could be that there were so few respondents under the age of 25.

The final possible explanation for such a low number of reported violators could be due to the study setting. The total number of phone book listings in Menomonie and surrounding smaller towns was 17,648. Menomonie is by no means an urban location. According to one study (Taylor, 1998), the number of handicapped violators was

significantly lower (44%) for town locations than for urban locations (76.63). Thus, because Menomonie is a small town, low reported violation rates may be representative of small town parking behavior. As a check on this assumption, data was gathered from the Menomonie Police Department regarding the number of tickets issued for handicapped parking violations for the year 2001.

According to Police Department records, a total of 86 tickets were issued to illegal handicapped parkers in the year 2001. The literature suggested that weather may affect violation rates. According to one study (Cope & Allred, 1990) the number of handicapped parking violations was higher when it rained because a close parking space was even more convenient in poor weather conditions. Therefore, the numbers of handicapped parking citations were examined by month for the year 2001. The numbers of citations per month are as follows: January-9, February-5, March-3, April-9, May-5, June-8, July-4, August-4, September-20, October-10, November-5, and December-4. It is interesting to note that winter weather months did not show the highest violations. This data is not consistent enough to support the theory that the number of violations is higher during poor weather months. Highest violation rates appeared to coincide with the university school calendar. Rates were higher at the start of school terms in January, June, and September. This may suggest violation when students who are unfamiliar with the town, become so desperate for parking spaces that they choose to park in handicapped designated spaces. Rates tended to drop when school was not in session: December, March (Spring Break), May, July, and August. There is limited past research with which to compare these violation rates. Certainly these rates are much lower than studies reported in the literature that suggest violation is very prevalent. Although this data does

seem to give credence to the low number of violators reported in this study, the consistency of police enforcement is an unknown variable.

### **Implications**

If one thing can be learned from this study, it is to not make assumptions. It was originally thought that the public had negative attitudes toward the civil rights of individuals with disabilities, and that this resulted in lack of respect for handicapped parking. Analysis of data certainly seems to refute this. What was found was just the contrary; overall the residents of the Menomonie area had very positive attitudes toward handicapped parking and toward people with disabilities.

Even though several studies identified in review of the literature reported rampant abuse of handicapped parking, this study found very low rates of abuse (5.5%). To aid in understanding the discrepancy in this finding, data was obtained from the Menomonie police department regarding the number of handicapped parking citations issued for the year 2001. There were only 86 citations issued for abuse of handicapped parking for the entire year, a figure that supports the low rates of violation reported in this study. In addition, both violators and the total sample disagreed with the statement “I feel there are too many parking spaces reserved for the handicapped”. This would suggest that there is both broad public respect for handicapped parking and a possible need for more handicapped parking spaces at least in the local area.

An important implication derived from this study is that the public is in support of handicapped parking law. Therefore, if individuals are experiencing problems with finding available parking, it is more likely do to the fact that only 2% of the available parking is required to be reserved for those with disabilities when the number of

individuals requiring accessible parking is well over 2% of the population. Rehabilitation professionals should be taking advantage of such broad public support and leading the way by advocating for more reserved parking and better enforcement of the spaces already available.

### **Recommendations**

As described above, responses throughout this study were very positive and supportive of handicapped parking. The only variable reported by violators as a reason for their decision to violate handicapped parking law was convenience. Efforts to change public parking behavior should capitalize on this finding. Publicity and educational efforts should be aimed at spreading the message that handicapped parking is not an issue of convenience for persons with disabilities. Since even violators were shown to have positive attitudes toward persons with disabilities, violations should be reduced when the public understands the implications of placing convenience ahead of access for people who truly need it.

Two other access related issues were discovered as a result of analysis of data. The first of those access issues relates to past studies that found high violation rates among elders. In this study it is possible that elders were more educated about parking permits for access. The second emerged in comments from violators, specifically the animosity expressed by the parent who ran into the store in the middle of the night to get formula for her baby. The store she described has since reserved spaces adjacent to handicapped parking for elders and parents with small children. Such parking spaces are not prescribed by law, but reflect proactive business decisions that may also help to explain the low parking violations found in this study. Other businesses and communities

may wish to follow Menomonie's lead in addressing such access issues and making their communities more customer and resident friendly. This in turn could enhance compliance with handicapped parking law and make these spaces more available.

Handicapped parking space availability is another area that should be addressed by policy makers, communities and professionals. Respondents in this study advocated for stricter enforcement of existing spaces and indicated that there is insufficient handicapped parking available. As previously mentioned, access throughout the community is critical in the lives of persons with disabilities and in the vitality of the community. Professionals, consumers and members of the community as a whole should band together to ensure that handicapped parking is always available.

Another important recommendation relates to the need to do outreach and education with elders. It was conjectured that lower rates of violation in this study could reflect more awareness of rights and handicapped parking permit availability within the older population. It was conjectured that such awareness could account for lower rates of reported violation. If this is in fact an historic effect, it means that efforts to reach elders within the last 10 years have been successful. Physicians, family members, professionals who serve elders should all continue to spread the word that parking permits are available for those with mobility impairments.

There are also a variety of recommendations for researchers. In this study responses from the total sample were compared to the responses of the reported violators to determine differences in the tested variables. However, the responses of the violators were included in the total sample along with the non-reported violators. Since observed

differences were so small, future research should exclude the violator responses in the total sample to detect any small but important variations.

It had been originally planned to exclude the responses of those indicating they had a disability that required handicapped parking based on the assumption that these individuals would have more positive attitudes about handicapped parking. There was a concern that including their responses would skew results. However, analysis of data for those with disabilities showed attitudes very similar to those of the general public. As previously mentioned, 2 of the 10 individuals with disability indicated that they had abused handicapped parking. Therefore, a recommendation for future research would be to include individuals with disabilities in the total sample, but also incorporate procedures to identify that subgroup.

Although the response rate for this mailed, self-report survey was quite high, a recommendation for future research would be to initiate data collection when the newest edition of the phone book was available. This would increase the likelihood that individuals selected for the study would still be residing at the listed address.

Even though, the survey response rate was quite high and a large sample size (250) was used, the reported violation rate was too low to test the significance of differences between the groups. Differences between groups was small so future researchers must ensure they have sufficient power to identify differences between the groups that may actually exist. In order to collect enough data to allow more detailed T test comparisons, a recommendation for future research would be to begin with a much larger sample size than the 250 used in this study.

Finally, future research should more closely examine the influence of municipality size on parking behavior. In this small town, people appeared to violate handicapped parking at a very low rate. Additional research could examine urban locations to determine if the number of reported violators would be higher in more populated areas. Research should also be done in small towns to see if findings related to parking compliance are similar. If small towns have better compliance then more research to disseminate what small towns are doing right would be highly advisable.

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Anna Tierney  
420 24th Street NE  
Menomonie, WI 54751

Dear Local Area Resident:

Hello, my name is Anna Tierney and I am a graduate student at the University of Wisconsin Stout working towards my Master's Degree in Vocational Rehabilitation. In order to fulfill my thesis requirement, I am conducting a study on handicapped parking. It has been determined that many people park illegally in handicapped parking spaces, but there is little research on the reasons why this is happening.

The population I am interested in is the population of Menomonie and surrounding towns. Your name was chosen by chance from the Menomonie phone book to participate in this anonymous mail survey. I am asking you to please take five minutes of your time to answer the questions on the following two pages that will assist me in my research. There are no risks or benefits to you in completing this voluntary survey except that maybe it will help to understand parking behavior and perhaps promote better use of handicapped parking spaces. Once again this is an anonymous survey so there is no need to include your name or address with the returned survey.

After completion of the survey, please return the survey in the self addressed, stamped envelope provided, by November 19, 2001. Thank you very much for your time and efforts to help make this study successful.

Sincerely,

Anna Tierney

By returning this survey I am volunteering to participate in this research study. Following the completion and return of this survey I will have completed my participation and will not be asked for any further assistance. I understand that the purpose of this study is for the completion of a graduate level thesis designed to explore parking behavior. I understand that my responses are confidential and that no one, not even the researcher will be able to identify me or my individual survey responses and that only group data will be reported. I further understand that there are no risks or benefits to me for participating, but that my responses may increase understanding of handicapped parking practices. If you have any questions or concerns regarding this survey or research study please feel free to anonymously call this researcher, Anna Tierney at (715) 235-2646, or this researcher's advisor, Suzie Eberhard at (715) 232-1442.

### **Handicapped Parking Questionnaire**

**Sex:**

- Male  
 Female

**Age:**

- 18-21  
 22-30  
 31-45  
 46-60  
 61 years or older

**Do you have a disability that requires the use of either handicapped license plates and/or a handicapped parking permit?**

- Yes  
 No

**Do you use either handicapped license plates and/or a handicapped parking permit?**

- Yes  
 No

**Have you ever parked in a handicapped parking space other than when you or a person you were transporting had a disability and needed close access?**

- Yes  
 No

Please answer the following questions by circling the number that corresponds with the response that best describes the degree to which you agree with the following statements. Circle (5) if you Strongly Agree, circle (4) if you Agree, circle (3) if you are Undecided, circle (2) if you Disagree, and circle (1) if you Strongly Disagree.

**SA A U D SD**

**5 4 3 2 1 I feel handicapped parking is abused by the non-disabled.**

5 4 3 2 1 I feel there are too many parking spaces reserved for the handicapped.

**5 4 3 2 1 I feel people with disabilities receive too many special privileges.**

5 4 3 2 1 I feel many people who have handicapped parking plates or permits do not really need them.

**5 4 3 2 1 It angers me when I see non-disabled people park in handicapped spaces.**

5 4 3 2 1 I feel it is okay to park in a handicapped space if I am only running in to the store for a minute.

**5 4 3 2 1 I feel it is okay to park in a handicapped space if there isn't any place near by to park.**

5 4 3 2 1 I feel it is okay to borrow a friend or family member's parking permit.

**5 4 3 2 1 I feel it is unethical to park in a handicapped parking space.**

If you do not have handicapped parking plates or a parking permit but park in handicapped parking spaces, please explain why. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_