Trinkets Left By Katrina: How Changes to New Orleans' Landscape Have Led to Personal Attachment

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Trinkets Left By Katrina: How Changes to New Orleans’ Landscape Have Led to Personal Attachment

A Thesis

Submitted to the Graduate Faculty of the University of New Orleans in partial fulfillment of the requirements for the degree of

Master of Arts
in
Geography
Cultural and Environmental Geography

By
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Abstract

Humans have an innate tendency to attach themselves to objects on their **cultural landscape**. After a **natural disaster** like **Hurricane Katrina**, people seem to hold on to objects left behind by the disaster. This paper examines several of the concepts and reasons as to why attachments may have formed to objects left on New Orleans’ landscape after Hurricane Katrina. I explored human reactions after a natural disaster, and discussed how **memories**, collective and individual, often lead to **personal attachment** to objects. In an attempt to get a better understanding of this phenomenon, 250 surveys were distributed to residents in the New Orleans metro area. The surveys were used as a tool to discover if attachments were formed and if so, what led to the attachment. The results from the survey revealed that 38% of the people surveyed formed an attachment to an object left by Hurricane Katrina.

**Keywords:** Cultural landscape, natural disaster, Hurricane Katrina, memories, personal attachment
Chapter 1

Introduction

New Orleans is a city full of eccentricities. It is a city rich in history that stands firm in its recognition of that history. The cultural heritage of New Orleans is revealed in its street names, distinctive food and interesting vernacular. It is viewed by tourists and locals alike as a melting pot of cultures, a fusion of ethnicities. Many of the citizens of New Orleans are the culmination of several generations, and the sense of pride and loyalty to this city runs deep. Ralph Ellison once said, “The very settlement of the city, in the midst of a swampy deltaic plain with barely a chin above sea level, suggests a deep tenacity among its residents that results from knowing that one is living literally on the edge of the continent” (Wagner 2006, 103). This statement speaks volumes for post-Katrina residents.

Most of the country has distinguished New Orleans as a lively city filled with parties, sounds of jazz, the aroma of Creole-Cajun cuisine and welcoming faces. On August 29, 2005, an abrupt and devastating change occurred to New Orleans’ landscape. The result of this horrific change to the landscape has not only left an enduring mark on the city, but also on its citizens. It is evident through their actions, emotions and even facial expressions. New Orleans will forever be changed, as will its citizens. The sights, sounds and smells have changed, but the culture of our people has not only endured, but is helping them through the worst natural disaster in the history of the U.S. to date.
Awe-inspiring debris

The devastation caused by Hurricane Katrina has led to changes to the cultural landscape of New Orleans. It is most intriguing to see what Katrina left in her wake. Objects and debris have been scattered and laid to rest in some very interesting places and positions. These objects have not only changed the visage of New Orleans, but have possibly crept into the hearts and minds of those left to live in this “new” New Orleans. People unexpectedly became attached to objects left by Katrina that resulted in both temporary and permanent changes to the landscape. Most New Orleanians see or drive past objects that Katrina left behind on almost a daily basis, even now in 2009.

The devastation – permanent and temporary

Not since 1969 with the arrival of Hurricane Camille has the Gulf Coast seen such devastation from a storm until Katrina in 2005. Boats strewn along the coast became the signature of Camille’s wrath. One of these boats in particular, the SS Hurricane Camille as it was named, became one of the permanent changes to the landscape. It was a reminder of the ferocity and heartache associated with that disaster. Hurricane Katrina’s landfall in 2005 once again changed the face of the landscape of the Gulf Coast. Katrina also left a trail of reminders that are scattered throughout the coast. These objects, like the SS Hurricane Camille, are like trinkets that stand to remind one of the devastation, mystery, and loss that is felt from a natural disaster. Whether permanent or temporary, these trinkets have changed or altered the landscape in such a way that the citizens of the devastated areas become personally or emotionally attached to them.
The temporary changes to the landscape, in the case of New Orleans, resulted in many boats and different types of water craft being tossed in amazing and sometimes humorous places and positions. There were boats in trees, on top of cars and homes and nose down in marshlands. Two boats the author became attached to were so grand in size and leaning ever so slightly as if an invisible hand was propping them up. The refrigerator phenomenon was also another temporary change to New Orleans’ landscape. They became canvasses for messages or a mile marker hanging from a tree three miles up the road. Some people even collected magnets from various discarded refrigerators. The FEMA trailer outbreak is yet another temporary change to the New Orleans’ landscape. Little FEMA trailers were placed in King Cakes following Katrina, demonstrating how New Orleanians’ culture may be momentarily altered, but not dispirited.

Many of the permanent changes to New Orleans’ landscape may result in re-molding the citizens’ lives in order to live in harmony with this new environment. Due to the area a person lived in, some have had to forever leave their home. The costs of rebuilding have driven out many local residents, while inviting in non-local residents. The changes in architecture and elevating of homes are also permanent changes that have altered the look of the “new” New Orleans. The ethnic make-up of New Orleans has also been transformed, which only adds to the diversity of our foods and cultures. The disaster brought people to New Orleans from various locations. People came from near and far to assist citizens with the recovery and rebuilding of New Orleans. Many of those people chose to stay and make New Orleans their new home. In turn, their cultural elements integrated into the diverse cultural fabric of New Orleans. For
instance, according to the US Census Bureau the Hispanic and Latino population in New Orleans pre-Katrina accounted for approximately 2.7% of the total population. After Katrina, the Hispanic and Latino population grew about 1.2% to account for 3.9% of the total population. That increase, although small, has had an effect on New Orleans. More businesses now provide bi-lingual signs and employees, and there has also been an increase in the availability of Hispanic and Latino foods in grocery stores and restaurants.

After a natural disaster such as Hurricane Katrina, it is not uncommon for another kind of permanent change to take place on the affected landscape. Memorials, plaques, statues and buildings are common permanent additions to a devastated landscape (Lowenthal 1975). The idea of memorializing a natural disaster has been taking place for centuries in all areas of the world. For instance, Barcaccia Fountain in Italy is said to be a memorial representing a boat that was left in front of the Spanish Steps after a 16th century flood. Memorials range from mining disasters, hurricanes, floods, tornadoes and military related events. The idea of constructing memorials to preserve the memory of a place or event leads to the starting point of attachment, the landscape.

**Landscapes, home regions and cultural symbols**

Why are landscapes an integral part of human life? Landscapes are unique components to the physical environment. A landscape is a story, an autobiography if you will, that tells of the daily lives of the generations that have dwelled upon it. It is a cultural picture that is ever changing. It is a testimony to people that their own world can be molded and defining. Landscapes are filled with cultural symbols that have
different meanings to those who look upon them and allow all those who walk across them to re-experience past events. They are earth’s time capsule.

Although the earth is our home, humans need a place of refuge, one that provides a geographical frame of reference. The geographical location of what one considers a home region is comprised of the interlinking patterns of “habitual association and attachment” (Terkenli 1995, 324). Home regions are the product of cultural constructs that serve the collective and individual needs of humans while being historically and geographically conditional. The idea of home varies among individuals. It is a partnership between geography and symbolism. A New Orleanian, for instance, may see a *fleur de lis* and relate that to New Orleans, his/her home. Cultural symbols help to specify a relationship between an individual and his/her home and seem to be fundamental to human life.

The sense of home, however, is multidimensional. An individual may consider a region home because of its familiarity, which in turn provides comfort, calmness and ease. There may be ethnic or national ties to the particular home region. Repetition plays a big role in the transformation of a region into becoming a home region. Behavioral and cognitive routines become strategies for survival and personal fulfillment. These strategies are the combined trial and errors for success that represent past patterns that now become a familiar point of reference. Personalization of home regions also gives individuals a sense of identification and control. The strongest sense of home, however, is defined spatially with the dwelling. This is in part due to the fact that our dwellings are representations and symbols of ourselves and culture (Terkenli 1995).
After a natural disaster, the collective sense of home may be strengthened. That particular landscape has an intrinsic value and its importance may be amplified. People seem to value what they may lose more than if it were not at risk of being lost. Of course, this collective appreciation and love for the home region depends on several factors (Terkenli 1995).

**Human reactions to a natural disaster: Government at all levels**

Cultural and moral values play a role in a community’s reaction to a natural disaster. The social and economic structure before the disaster will help in determining how the region will come back from the disaster. Another important aspect of determining how an individual or community will come back from the disaster depends on how they respond to the disaster (Edwards 1998). Was the disaster sudden or predictable? Was there little damage or was the community exposed to a lot of damage?

When considering the effect of a natural disaster on a particular region, it is important to first look at the big picture. In the case of Katrina, the big picture is the City of New Orleans. This means looking at the city as a whole, such as the social and economic status of the area and then bring it down to an individual level. This may be an appropriate way of trying to understand how the community reacted as a whole and how that may relate to individual behavior. The intention is not to pick apart the economic or governmental downfalls of this city in order to arrive at a conclusion, but to take a broad glance at the support system within this city at a social and government level. This will be done in an attempt to draw conclusions regarding an individual’s personal attachment to the post-Katrina landscape. The concern is more with
narrowing the focus onto why these attachments occur to landscapes after a natural disaster.

Having described the idea of a home region, New Orleans was and still is the home region for thousands of people, whether they have returned or not. “Refugees”, as they are called, have taken with them their sense of their home region although they have not returned. Being away from your home only increases the value of the place to the person (Terkenli 1995). The fact that a person has not returned home following a natural disaster does not lessen the stress following the disaster. Stress felt collectively and individually is a major component to how people react following a disaster (Edwards 1998). The level of stress caused by a natural disaster dictates how individuals, citizens and government officials alike, will respond. Stress can cause the wheel of progress to begin in a forward motion, or in the case of New Orleans, a backward one. New Orleans has always seemed to move in a backward motion compared to other cities in this country. The financial state of this city and its residents prior to Katrina reinforced the stress felt by the citizens. The lack of respect for the government officials prior to the storm and the “laissez les bon temps roulette” attitude they had, only delayed aid to getting to the city. This stress was surely felt by the citizens of New Orleans during Hurricane Katrina.

Ecological models have been created to describe the framework of the human systems beginning with the family unit, up to governmental organizations and institutions. These models demonstrate the interplay between the components of these models after a natural disaster (Edwards 1998). It is almost like a waterfall effect. If the government officials are collectively stressed and not responding in a supportive
manner, that stress is trickled down to the citizens. How can citizens cope if the officials they are looking to for aid and guidance can not cope? Stress is also conditional, in that it may be lessened or exacerbated depending on the cultural value systems and traditions, as well as the demographics of the area. The social environment of a city dictates the behavioral norms for a citizen in that city (Form 1956). Post-Katrina, the world watched as those who either cracked under stress, or simply could not adhere to social norms, looted some of the most ridiculous items. New Orleans is comprised of many people who are elderly or economically vulnerable. These citizens are susceptible to disaster-related stress, usually because they are denied the aid in getting back to their way of life before the disaster. Hurricane Katrina aid was mishandled in ways that left many people struggling or altogether left out. In April of 2007, Fox News reported on the mishandling of FEMA aid, which led to almost $1 billion in money being fraudulently received. The result was money going into the hands of criminals, not victims. The lack of aid reaching victims only added to the collective stress felt by New Orleanians.

**Human reactions to a natural disaster: The citizens**

Social support is vital when communities suffer from a natural disaster. The nature of the disaster can change one’s sense of reality. The time sequence associated with the disaster is an important factor in anxiety levels. If the disaster was unexpected or happened during the night, the individual may have trouble becoming oriented to the new surroundings. Was the community exposed to large amounts of debris or corpses? In the case of New Orleans, the answer would be yes. When exposed to such horrific changes in one’s landscape, people need to be able to have a support network with
which to share their experience. This social support can start with aid from the
government, Non Governmental Organizations (NGO) such as the Red Cross or simply
people coming to your community from other communities to help. Disaster victims
need to feel like they have someone to turn to, someone with whom they can share their
shock concerning their new reality. Through social interaction, people within the same
culture can arrive at a culturally informed definition of the natural disaster which
influences how they perceive the disaster and how they react to it. Social support also
provides disaster victims with physical and material assistance and expressions of
compassion (Edwards 1998).

The strongest form of support, however, comes from the family. If a family is
tightly knit before a disaster and there are strong friendship bonds, the family is likely to
do better after a disaster than families who do not have strong bonds. Preexisting
stressors within a family will amplify the stress experienced after a disaster. The
reactions of adults to stress after a natural disaster will affect children’s perception of
the disaster. If an adult’s anxiety is increased, the child’s anxiety will in turn increase.
Mothers are often seen as the force that pulls a family together and are sometimes
denied the opportunity to express their feelings after a disaster. If the government does
not provide post-disaster assistance or is slow in its response, the frustration and
fatigue felt by the family will compound their stress (Edwards 1998).

Immediately after a natural disaster comes the response by the residents, non
residents and government to the disaster. In the midst of dealing with the stress of the
disaster itself, comes the stress of dealing with the loss, the cleaning of debris and the
rebuilding of the affected area. The coping mechanisms exhibited by disaster victims
vary from not wanting to deal with this new reality to jumping in head first to begin fixing this new landscape. Problem-focused coping involves taking action by partaking in community clean up or reclaiming possessions from one’s home. Appraisal-focused coping involves thinking about the event and reassessing one’s life in this new reality. Emotion-focused coping is when a disaster victim looks for trust, reassurance and understanding by others to help them get through the change in their life. The ability of a disaster victim to cope varies with factors such as age and developmental influences. Coping skills begin developing at an early age and although children are very resilient, many researchers feel that elderly disaster victims are also resilient (Edwards 1998).

Disasters do not necessarily increase mental illness or mental health problems in the affected area (Kasperson and Pijawka 1985). The disaster may actually increase personal and social stability of the population that is impacted and create a therapeutic community. In post-Katrina New Orleans, the increase of mental health issues is a problem for the city. A therapeutic community has not arisen and not because the citizens do not need the help, but because the help has not been provided. In turn, there is a large population of people who are not only stressed, but fatigued, worried and depressed. It seems like it is almost an epidemic. Katrina has changed people, for the better and for worse. Unfortunately, there are not enough facilities available to help people get back on track mentally so they can physically rebuild their landscape. The first few months after Hurricane Katrina, the suicide rate in New Orleans increased by 300% (USA Today). The facilities that weren’t destroyed lacked the staff to provide help for New Orleans citizens. USA Today stated there were only 22 out of 196 practicing psychiatrists in the area months after Katrina. How do people cope without the help of
professionals? This is when the word resilience comes to mind. The word resilience literally means “to walk back”. It is the ability to absorb the stress until it disfigures you, but as you let bits of the stress go you regain your original form. New Orleanians are resilient and can seem to conform to whatever their landscape throws at them.

It is amazing to think how you can live your whole life on a certain landscape, seeing the same houses, trees, and buildings and within a few hours, not be able to recognize that same landscape. A natural disaster is capable of that. Taking with it the same objects you saw daily, and took for granted. However there is also a change to the landscape by the citizens in response to the disaster. Lee and Charles (1992) described six points of landscape change that was observed and written two years after Hurricane Hugo. They are landscape changes that like New Orleanians, only the residents of that area would notice. The first noticeable change caused by the hurricane is to the vegetation. Since New Orleans is ridden with swamps and marshland, the damage is obvious. Large roots that were so big one would think only the hand of God himself could pull up, lie on their sides. The second change they noticed was the changes to the homes. Damaged homes were renovated, some moderately, some majorly, but enough to where the residents of that area noticed. The third landscape change was the removal of older houses. This is also seen in New Orleans, where so many historic homes and buildings were lost. Many homes of certain architectural styles associated with New Orleans have been torn down. The fourth change the authors state seeing is now a common scene here in New Orleans too. That is, the number of houses being raised on stilts. The fifth change is the building of new houses and the sixth change is the mixture of new houses being built next to older,
renovated houses now on stilts. All of these landscape changes are not just unique to New Orleans. It is also intriguing to think about how changes are made on the landscape by humans in response to the changes made by a natural disaster. Considering all the changes that are being made to the landscape, it is all a vain attempt to create the landscape that was previously there. It is like trying to come full circle, back to the same comfortable, yet obviously changed landscape.

**Understanding attachment**

There is no need to remind anyone of the graphic scene Katrina left in her wake. The home region of thousands of people gone, changed, rearranged forever. The awe and shock can never truly be described in words. Even the pictures can only say so much. One would have to see it up close. A person’s every possession tossed with no care and covered with some type of debris. A person would have to smell it, the mixture of chemicals and dried swamp mud. A person would have to breathe it. Thick, humid, dust filled air. How does one deal with that? How does one cope with such immense losses? This is where the personal attachment arises.

When someone we love dies, we remember them through certain pictures or stories. Our memory is what keeps people and events alive in our minds. The memories may be positive or negative, but we place physical significance on certain objects to help keep these memories alive. The objects that we choose may become symbols or memorials and we form emotional attachments to them. They stimulate the stories or histories that coincide with the memories. It is a way of staying connected to the person or event. In areas where a disaster occurred, creating group symbols or memorials is a way for the survivors or victims to bond. It is also a way for the victims
and survivors to reminisce about what they are going through or went through (Lowenthal 1975).

Human needs and wants manifest themselves on the landscape. Placing cultural symbols on the landscape seems to be a process that is rooted in societal processes (Terkenli 1995). When humans create cultural symbols on the landscape, it alleviates the collective stress that may be felt by a society. The erection of symbols or memorials after a natural disaster makes a claim on that space that validates what occurred. It bonds the people who experienced the disaster. The symbols placed by humans on the landscape have the power to compress an entire event into one object. Memorials especially, are symbolic ways for a victim to communicate with others the pain and distress she/he has experienced (Smith 2006).

Placing memorials on the landscape after a natural disaster is not an uncommon act of preserving people, places and history, especially if the event was monumental or rare. For instance a disaster memorial was constructed in Plainfield, Illinois. This is where an F5, or 5 on the Fajita scale which measures the strength of a tornado, killed several and wounded hundreds more. There were also memorials built for the Chernobyl technological disaster and for the astronauts that died on both Challenger and Columbia. Once again, humans are displaying emotions through physical objects for the world to see.

After Hurricane Katrina, plans for memorials came to the minds of the victims on the Gulf Coast. In Biloxi, Mississippi a memorial was created with the names of victims of the hurricane, as well as a cabinet full of objects salvaged from the storm. St. Bernard Parish created their own memorial which also names the victims of the storm in
the form of a cross on the water. There are hundreds of memorials that people have created online, such as www.katrinamemorial.com. These cyber memorials give victims of Hurricane Katrina as well as the rest of the world a chance to get an inside glimpse into individual experiences. These websites give people the opportunity to share stories, photos and create their own personal memorials to the loved ones they have lost. They have become outlets for people to cope with what they went through, and will continue to go through. Putting such an emotional experience on the internet and allowing the world to read it once again validates to the person the trauma experienced. This opens a broad spectrum of ways to receive the emotional, physical or financial help the victim may want or need.

Tourism is an interesting characteristic of a natural disaster. People have an innate interest in the graphic, mysterious and historical significance of an event. People from all over the world flocked to New Orleans to see the devastation for themselves. Hurricane Katrina was one of those phenomena that you would have to see it to believe it. The influx of tourists gave the city and its citizens the emotional, financial and physical support it needed. Many people from around the country reached out and donated money and material items and others came down here personally to help victims rebuild their homes. They provided emotional support and gave the sympathy that many citizens needed in order to know that they were not alone. In a time of crisis, humans need to know that there are others out there that have either been through it before or someone upon whom to lean. The influx of tourists also helped the city financially by providing businesses with patronage for which it may have been thirsting. One of the main features that the tourist industry provides is the underlying opportunity
for a story to be told. When a tourist comes into a city like New Orleans, she/he will more than likely be guided by, waited on or served by someone who has a story. Sharing personal experiences and stories first hand to an outsider is a way for that experience to become regionally or even nationally recognized. That story will travel by mouth, paper or internet and weaves its way into the fabric of the history of the event.

Humans also have the tendency to give a personal identity to the objects because it is reflecting a person or event. For instance, by naming the hurricanes, we are giving them personal identities. Hurricane Katrina is just Katrina now to New Orleanians. How many times have New Orleanians heard or said, “Katrina took it”? Katrina has been personalized so much, that seeing video of “her” was like finally meeting the person who changed lives so dramatically. Even the events in the lives of New Orleanians seem to revolve around a pre-Katrina or post-Katrina timeline. That reinforces the idea of how Katrina has been embedded into their culture and their new reality. Will Katrina survivors ever stop using the Katrina time line and is it even healthy?

The landscape is the canvas that contains the collective memories of a natural disaster. Collective memories that are fixed to a physical place and constructs meaning to people can be termed as a memory-place. Time can stand still in a memory-place. The physical objects are the evidence that validates the collective memories. It becomes a public history that is physically and spatially embedded in the landscape. A memory-place is not only a physical representation of collective memories, but it is a portrait of a culture. It reflects the important cultural symbols and values of that home region (Flores 1998).
Hurricane Katrina left a feeling of numbness for those who felt her wrath. It is very hard to fathom losing everything you have ever had in your life, as if your slate was wiped clean and there is no trace of your existence. That may be one reason why people may have become attached to objects left by Katrina. It seems to be human necessity to hold on to memories of historic or monumental events with the collection of physical objects. It is a way of dealing with the future by being reminded of the past. After the drastic landscape changes made by Katrina, our new realities and identities are created through the combination of social space and social memory. With these collective memories through objects and memorials, we have given Katrina her place in this world.

It is interesting that people have become attached to such things as the waterlines or the infamous “X” that was spray painted on their homes. These markings left by Katrina and rescue teams, give a visual glimpse into Katrina’s destruction. They are conscious reminders of the beating this city and its citizens took. These are tangible objects that are everyday reminders. There has been an increase in cultural symbols found in the New Orleans area since Katrina. The *fleur de lis*, which has always been a symbol of New Orleans, has twisted and molded itself into other cultural symbols such as fish, deer and ducks that have become stickers that are stuck on cars. New Orleanians wear the *fleur de lis* jewelry and decorate their homes with it. There is even jewelry being made to replicate New Orleans Sewerage and Water Board meter covers. Are these all attempts to remind themselves and others of the resilience and uniqueness of New Orleans?
Research questions and techniques

While conducting the research, the author used surveys (sample on p.19) in an effort to discover if and why people want to be reminded and what these objects symbolize. Are these souvenirs or mementos that remind them of the vanished landscape? Are they symbols of strength, a reminder of the hardship that was overcome and a source for future strength? Perhaps these symbols are a way of tying the past in with the future. Perhaps the attachment to symbols and objects left from Katrina are people’s way of saying, “this is what I went through and I’m still here”. It is a way of enduring identity in this new reality. It all seems like an act of nostalgia, although nostalgia usually requires objects of another time or era to be brought into the present. Some of the objects people have become attached to can be considered nostalgic. Nostalgia requires a feeling of estrangement from an object and nostalgic images and objects are used to help the continuum of adjustment into the future. They are a source of comfort in some instances (Lowenthal 1975).

The objects of attachment range in shape, size and type. Some of the objects of attachment may seem strange, such as refrigerators. Throughout New Orleans there are freshly painted waterlines and iron “X”s placed over the originals. Is this New Orleanians’ way of collectively coping with the stress? Is it their way of reminiscing while preserving a piece of history? Are these symbols the reflection of the strength and resilience of New Orleanians for having overcome such a tragedy? Perhaps keeping waterlines and “X”s are a way of preserving the emotional attachment by constantly being reminded and redefining the negative by sanctifying these symbols in a way that bonds the victims. Are New Orleanians so rooted in their culture, that instead
of letting the worst natural disaster in this country’s history erase that culture, they will take symbols from the culture, such water meter covers and make jewelry out of it? Discovering some of the answers to these questions is the goal of this research. Hurricane Katrina has branded New Orleans in a way that is not only cultural in nature, but temporal, psychological and geographical.

**Survey**

A survey was designed in order to get direct feedback from residents of the New Orleans metro area. Utilizing a survey technique allows the author to ask respondents specific questions regarding attachment and location. The respondents can provide intimate details and reasons as to why attachments may have been formed. Also, by using a survey technique, the author was able to create questions based on the literature. Therefore, the questions were precisely defined and worded.

Test surveys were distributed to a sample of college students to verify that questions were clearly worded. For data collection, the survey was distributed to the doors of 250 houses which were randomly chosen. Using a grid cell technique, a numbered grid was placed over a map of the New Orleans metro area (Map 1 below). Choosing numbers from a random numbers table, the author then chose the grid cells with the corresponding numbers. The surveys were delivered to approximately 25 houses in each cell. There were a maximum of 5 surveys delivered per street. The surveys included return addressed stamped envelopes as an incentive for the participant to return them.
The following is an example of the survey that was used in this research:

This survey will be used for research purposes only. Please do not put your name on this survey.

Hurricane Katrina left objects/debris scattered throughout the New Orleans metro area. Many victims of Hurricane Katrina have become attached to some of these objects and debris. These objects may include anything from waterlines, “X”s on homes, cars or boats in strange places, refrigerators, objects found in your home placed there by Katrina, misplaced building signs, etc… that has special meaning to you. Please answer the following questions:
1. Have you become emotionally attached to an object or debris that was left behind by Katrina? If your answer is no, please do not finish this survey.
   A. yes  
   B. no  

2. To what type of object or debris have you formed an attachment to?

3. If you have formed an attachment to an object/objects, which of the following do you feel influences that attachment?
   A. location where Katrina left the object  
   B. the size of the object  
   C. the type of object  
   D. the position in which the object was left  
   E. other ____________________________

4. Many objects placed on New Orleans’ landscape by Katrina have caused either temporary or permanent changes to the landscape (i.e. temporary changes may be someone’s clothes hanging in a tree or the FEMA trailer phenomenon whereas permanent changes may be a house or boat left forever in the marsh). Is the object that you formed an attachment to a:
   A. temporary change  
   B. permanent change  

5. Which changes in New Orleans’ landscape have had more of an impact on you or holds more memories for you?
   A. temporary changes  
   B. permanent changes  

6. Have the object/objects that you are attached to become a part of your daily routine (i.e. do you drive past it or encounter the object)?
   A. yes  
   B. no
7. If the object can be moved or has been moved, will you feel or did you feel
   A. happy/relieved
   B. sad/distressed
   C. indifferent

8. Why do you feel that you have formed an emotional or personal attachment to an object left by Hurricane Katrina? Circle as many as needed. Does the object:
   A. symbolize what you as a victim have gone through
   B. remind you of the power and devastation of Katrina
   C. remind others what you have been through (badge of courage)
   D. serve as a souvenir or keepsake that makes you part of this historical event or have rightfully earned
   E. helps you to cope with loss and move on
   F. other____________________________________________

9. Given all the changes to the New Orleans landscape caused by Katrina, such as changes in vegetation, building codes, architecture and ethnic make-up, do you see this new landscape as unique?
   A. yes
   B. no

10. What ZIP code did you live in prior to Hurricane Katrina?

11. If you can recall, which area of the city is/was the object of your attachment located?
Chapter 2

Review of Literature

Throughout the history of the Earth, landscapes have evolved. They have been molded to satisfy the needs of humans and they have even been erased. Ingold stated in “The temporality of the landscape” that the landscape “is a living process” and “is never complete” (Ingold 1993, 152). These statements hold true when we as humans look to the landscape for answers to our past and inclinations into our future. They also hold true when survivors, researchers and bystanders look to the landscape for clues and remnants of a life that once was after a natural disaster. Why is this? It is because the landscape tells a story.

Landscapes are the stage of human activity. They are embedded with cultural symbols and memories. It is the daily interaction between people and the environment that helps to shape individual cultures. These culturally enriched landscapes become what Terkenli describes as home regions. Terkenli defines a home region as “a system of interlinked patterns of habitual association and attachment” (Terkenli 1995, 152). He further defines home regions as existing “to serve fundamental individual and group needs, and, as human constructs and cultural products, they also sustain these needs” (Terkenli 1995, 152). Home regions provide a sense of comfort because of the repetition of behaviors coincided with the culture embedded in that region.

Terkenli not only rationalizes the importance of a home region, but explains that “the strongest sense of home commonly coincides geographically with a dwelling” (Terkenli 1995, 152). A dwelling or domicile is a reflection of oneself and one’s culture.
They “fulfill the need for refuge, for a frame of reference, and for a context of self identification” (Terkenli 1995, 152). A dwelling is personalized by being filled with cultural symbols, objects that hold memories or importance and objects necessary for that person’s survival. A dwelling serves as a place of comfort, relaxation and familiarity.

After contemplating the ideas of home regions and dwellings, it becomes easier to understand the concept of humans becoming rooted. Humans live in certain regions which reflect their cultural and moral beliefs. The areas are utilized and manipulated to accommodate group and individual needs. Through repetition, familiarity, and personalization, these areas become home regions and on a smaller scale, dwellings. Terkenli discusses rootedness in his article and explains that it is “a state of mind or being in which a person’s whole life and pursuits are centered around a broadly defined home” (Terkenli 1995, 152). The idea of one being rooted to a home region or dwelling gives a person a sense of belonging somewhere, which therefore leads to an attachment to that place.

The concepts discussed above, home regions, dwellings and rootedness are used in the research as the foundation for understanding why attachments are formed. Emotional attachment to objects and places is magnified in the event of a natural disaster. Terkenli states in “Home as a region” that “as definitions of home change, people yearn more for home and thus tend to become more intensely attached to it”. In other words, “they value more what they seem to be losing” (Terkenli 1995, 152). People are attached to objects that were of little importance before Katrina, but because they were almost lost, hold a lot of meaning to them now. Of course, objects of great
importance hold even more meaning now and new objects that have appeared on the landscape now hold some type of meaning.

When attachment to an object or place occurs, it is usually backed with memories that that specific object or place holds. Flores in “Memory-place, meaning and the Alamo”, describes how collective memories can be fixed to physical places that have meaning. These collective memories are physically and spatially embedded in a certain geographical place. They create a relationship between a past or historical event and a physical place and usually have cultural meaning. After a natural disaster, the concept of memory-place can usually be seen by the building of memorials. The collective memories of the victims are constructed into a physical object that not only provides physical evidence of the event, but may also serve to help the victims move toward the future.

Humans need concrete reminders of things that have been seen or accomplished and places that have been visited. People buy souvenirs, keepsakes or take photos so they can forever remember that time and place. When a natural disaster occurs, the same phenomenon takes place. In “Past time, present place: Landscapes and memory”, Lowenthal discusses nostalgia and the need to keep close estranged objects and even landscapes. Lowenthal states that “we need the past, in any case, to cope with present landscapes” (Lowenthal 1975, 1). Objects provide the nostalgia of the past and the history it holds, “without the past as tangible or remembered evidence, we could not function” (Lowenthal 1975, 1). The memories and keepsakes help to bring normalcy to survivors of a disaster and “substitute for vanished landscapes” (Lowenthal 1975, 1). There seems to be a sense of comfort with the continuity of past with present.
Tangible evidence of the past proves human’s enduring identity. This is why it is not uncommon for victims of a disaster to hold on to remnants of their old life. It is not only to be reminded of what once was, but it is also a coping mechanism to ease the stressful transition into a new life.

Natural disasters result in a “collective stress situation” (Quarantelli 1977, 23). Unruh (1983) in “Death and personal history: Strategies of identity preservation”, describes how emotional attachment and identity preservation are socially accomplished. The largest support system after a disaster is a social support system (Edwards 1998). Therefore, sanctifying cultural symbols, spaces or identities may be a collective undertaking. Although emotional attachment doesn’t always consist of positive feelings, Unruh describes four strategies survivors use in order to preserve their emotional attachment. These include: “reinterpreting the mundane, redefining the negative, continued bonding activities and sanctifying meaningful symbols” (Unruh 1983, 340). Emotional attachment can bring survivors together by forming a support system, preserving the community’s identity and helping the survivors to move forward.

The collective stress situation experienced by a community after a natural disaster disrupts everyday life as well as social systems in that area. The nature of the disaster itself plays an important role in how a community will respond physically and emotionally after the disaster. For instance, if the disaster occurred at night, the survivors may be disoriented which will raise the level of anxiety. Also, if there is a large scope of damage, debris or death that survivors are exposed to, that too will heighten stress levels (Edwards 1998).
The social environment, which includes cultural traditions and value systems of a community, helps to define acceptable behavior after a disaster. Collective stress may cause people to act out of character and social norms may be skewed. The change in reality may have more of an impact on people of certain ages or ethnic groups. If the social system of a community is strong prior to the disaster, this will help to ease the stress and confusion felt by the survivors (Form 1956).

Individual stress felt by a survivor depends on how she/he perceives and responds to the disaster. On an individual level, the family is the strongest support system for a victim. If the family unit is strong before the disaster occurs, it is more likely not to succumb to the stress of the disaster as profoundly as a family with weaker ties. As with collective stress, certain individuals of the community may be more affected after a disaster, such as mothers. Mothers are seen as the one who holds things together for the family. Also, if mothers are showing signs of extreme stress, children’s stress levels will be exacerbated (Edwards 1998).

How a person deals with stress is a reflection of their worldview combined with their coping mechanisms. Edwards (1998) describes ways in which people deal with stress after a disaster. Coping mechanisms range from the victim taking an active role in reclaiming their lives to the victim doing absolutely nothing. Everyone’s coping mechanisms vary, yet emotional attachment is a common coping mechanism among disaster survivors.

After experiencing a natural disaster and its repercussions are dealt with on an individual and collective basis, the community begins to heal. Possessions are reclaimed, stories are told and memorials are erected. The event may forever be
engraved in the landscape as well as the minds of the survivors. Objects of little importance yesterday are of great importance today. Relationships once weak, are now strengthened. There is a shared feeling, a bonding of community members which will be the foundation of bringing that community back to what it once was. It is the strength and resilience of a community, as well as the environment that will bring it back full circle (Gunderson et al 2005).
Chapter 3

Methodology

This thesis reflects the cultural and emotional aspects of a natural disaster. The author seeks to establish if there is a relationship between survivors of Hurricane Katrina and emotional attachment to objects left by Katrina. The best approach to collecting qualitative data of this nature is through the distribution of surveys. Utilizing the survey technique allows the researcher to ask specific questions of participants, decreasing the ambiguity of the results.

The survey was designed to describe the intent in a logical and straightforward way, as seen in the opening paragraph of the survey. It was important for the participant to have a clear understanding of the author’s objective. The opening paragraph, as well as the questions that follow, are worded in such a way so that the participant could relate to the topic and possibly come to the realization that she/he has formed some type of emotional attachment.

The survey consists of eleven questions, some of which are multiple choice and some of which are open ended. The first question asks the participant if she/he has formed an emotional attachment to an object and/or debris left behind by Hurricane Katrina. This is a yes or no question. If answered “no”, the participant is asked not to finish the survey. The participant is asked not to finish the survey if she/he answered “no” because the component of the research that examines the attachment phenomena cannot be examined if an attachment has not occurred. Therefore, only those surveys
by participants who displayed an attachment to an object can be further examined and discussed.

The second question is an open ended question that asks the participant to what type of object or debris she/he has formed an attachment. This gives the participant the opportunity to consider the objects or debris that have become important to him/her and to list those. After listing the item or items that the person is attached to, question three asks the participant what she/he feels influences that attachment. Various objects were laid to rest in unexpected places and positions which made the event that much more surreal. This question was multiple choice. However, the last choice is a fill in the blank in case the participant felt there was another reason that influenced their attachment. The multiple choice answers for this question include: the location where the object was left, the size of the object, the type of object, or the position in which the object was left. The questions and answers that were devised by the author stemmed from the literature reviewed by the author. Many of the articles reviewed by the author pointed out that the type of object, where the object was found or how the object was found influences the attachment to the object. The main point of this question is to give the author an idea as to what seems to be most influential when the survivor of a disaster forms an emotional attachment.

Natural disasters often change the affected landscape permanently. There are changes not only to the physical environment, but also to the social, cultural, economic and aesthetic components of the landscape. It is an interesting phenomenon when a place can be drastically changed and unrecognizable in a matter of hours. There are also temporary changes to the landscape that may come in the form of debris, out of
town workers and even FEMA trailers. Since both permanent and temporary changes occur after a natural disaster the next two questions are geared toward discerning which objects of attachment are permanent changes or temporary changes. Question four asks the participant if the object or objects of their attachment were the result of a temporary or a permanent change. Question five shifts gears to the New Orleans’ landscape as a whole. In this question, the participant is asked which changes to the landscape, either temporary or permanent, have had more of an impact on them or hold more memories for them. The author is aiming to identify what type of change to the landscape has had more of an impact on the survivors of Hurricane Katrina.

After a natural disaster, seeing the object of attachment daily is a common occurrence. The object may become part of a daily routine and may magnify the importance of that object. Question six asks the participant if the object is part of their daily routine. Knowing if the object is encountered or driven past on a daily basis can help the author better understand why the attachment was formed. Terkenli (1995) discusses how people commit themselves to particular places or objects when they are a part of a regular routine. These places or objects become sources of comfort through familiarity. This question will also give the author the chance to decipher how many people actually do or do not encounter their object of attachment daily.

Objects of attachment are used to help people cope with loss and move on or to serve as memories of what once was. Edwards (1998) describes problem-focused coping which explains how people form attachments after a natural disaster in an attempt to move on. Having that object in their lives may provide security or comfort. Taking the object away or moving it could be detrimental when a survivor is trying to
deal with their new reality. The survivor identifies with the object and if she/he doesn’t have the object in their lives anymore, it may increase the sense of loss already felt. Question seven asks the participant how she/he will feel if or when the object is moved. This multiple choice question has answers which include: happy or relieved, sad or distressed, or indifferent. The answers can be compared to see how people with attachments to objects generally feel about that object continuing to be a fixture in their lives.

Question eight gives the participant the opportunity to analyze why she/he feels she/he has formed an attachment to an object or objects. This is also a multiple choice question in which the author provides answers for the person from which to choose, but also allows him/her to state his/her own reasons. The answers range from: symbolize what the victim has gone through, remind of the power and devastation of Katrina, remind others of what you have been through, serve as a souvenir or keepsake that makes the victim part of the historical event or have rightfully earned, or help the victim cope with the loss and move on. This question gives not only the author, but also the participant a clearer understanding as to why attachments may be formed after a disaster.

New Orleans has always been unique, but since Hurricane Katrina it has become unique in different ways. The way New Orleanians live is different in this post Katrina world. FEMA trailers still dot the landscape, architecture and building codes have changed, and the ethnic make-up is more diverse. Question nine asks the participant how does she/he, as a New Orleanian, feel about the changes to the landscape and
culture. It is a yes or no question asking if the participant views post Katrina New Orleans as unique.

This survey was distributed to various areas throughout the New Orleans metropolitan region. The ZIP code that the participant lived in prior to Hurricane Katrina is requested in question ten and the area or ZIP code where the object of attachment is located in is requested in question eleven. In order to bring some cohesiveness into this research and show correlations between attachments and certain areas, ArcGIS software was used to aid in this process. A comparison of the percentage of people who have attachments in each area surveyed was conducted and the results were mapped. The same was also done with the areas where the objects of attachment were located. In other words, were objects of attachment found more in one area of New Orleans compared to others? The results are demonstrated in thematic maps.

In order to distribute the surveys in the most unbiased manner possible, a grid cell technique was used to choose distribution areas. A street map of the New Orleans metro area, which included the north and south shores of Lake Pontchartrain, was used. Grid cells measuring an inch and a half by an inch and a half were drawn onto the map and then numbered. These grid cells equaled one squared mile. A random numbers table was then used and the numbers chosen from the table designated which cell would become a study area. Ten numbers were ultimately chosen from the random numbers table, totaling ten study areas. Of the study areas, four areas were located on the Northshore and six on the Southshore.

Once the study areas were established, 25 survey packets were distributed. Each survey packet contained 2 surveys, a letter of intent and a stamped envelope with
a return address label. The study areas chosen included: New Orleans East, Lakeview, Uptown, Meraux, Harvey, Metairie, Lacombe, Covington and two areas in Slidell (see Map 2 below). For each study area, the main cross streets were identified in each cell. Streets were then chosen on and in close proximity to those cross streets. Due to the rebuilding of the New Orleans metro area, many neighborhoods were still somewhat desolate. The goal was to distribute 5 survey packets per street. Houses on each street were chosen based on occupancy because so many houses are still empty or are in the process of being rebuilt. The goal throughout the whole process was to maintain the randomness of selection. A total of 250 survey packets were distributed throughout the New Orleans metro area.
In order to calculate the results from the surveys from participants who exhibited an attachment, the author used percentages to figure out the most commonly given response for most of the questions. This method was used for questions with two answers to choose from and for questions regarding location. For the remainder of the questions, the author simply counted which answer was given more frequently. For instance, questions three and eight were questions with multiple choice answers. A combination of answers could be given for those questions. Therefore, the number of
each answer given, “a, b, c, d, e, f” was tallied and the author was able to decipher the most common answer given regardless of the combination. This seemed to be the easiest way to break down a multitude of combinations in order to reflect the most common answer.

The author wanted to explore possible spatial relationships between participants who exhibited attachments and the amount of flood water the participant received. Comparing ZIP codes that the participants with attachments lived in prior to Katrina to flood water levels in those ZIP codes may aid in explaining why attachments were formed in some areas more than others. The author examined the same concept with locations of the objects of attachment. Specific locations throughout the New Orleans metro area where objects were located were compared to flood water levels for those locations. The author also wanted to explore the possibility of one parish producing more respondents with attachments than other parishes. In order to achieve this, a Kruskal Wallis test was used. This is a non-parametric test that analyzes variance of 3 or more groups to rank data.

The author downloaded FEMA maps reflecting Katrina surge inundation and advisory base flood elevations. These maps showed the limit of surge inundation, preliminary high water marks, and preliminary surge inundation. Maps were obtained for each of the study areas as well as for each parish overall. The author analyzed the maps in conjunction with survey results to see if a relationship existed between the percentages of respondents who formed attachments in flooded areas versus non flooded areas. A Mann Whitney U test was performed based on the number of respondents in flooded areas versus non flooded areas. The Mann Whitney U is a non-
parametric significance test that ranks two independent samples of observations to measure a difference between the samples. The author hypothesized that there will be more respondents with attachments in flooded areas than respondents with attachments in non flooded areas. Results from the Mann Whitney U test can reveal if there was a significant difference in the number of respondents with attachments in flooded areas versus non flooded areas. Examining flooded and non flooded areas and comparing that with survey results helped to show if flooding influenced the level of attachment for each parish and individual survey areas. The percentage of respondents who had attachments from each parish was compared to the parish surge inundation maps (Appendix A). The author was able to discuss possible explanations as to why attachments were formed in each parish as well as individual survey areas based on the amount of surge inundation.

The surge inundation maps for the parishes contain several cells. Those cells are aerial photographs that were taken of specific locations. Each image, after being georectified, became a cell and the mosaic of cells were put together to form the parish. The surge inundation maps were interactive, in that the author was able to choose a specific cell, see the image and discern if it was a survey area. The author was able to find the cells corresponding to the survey areas and when chosen, the surge inundation and base elevation map for that area was provided. The maps for the survey areas were at the street level, which made it easier to decipher if the study area was a flooded or non flooded area.

Population and median household income data from 2000 were collected from the Census Bureau for each study area. The author used the ZIP codes for each study
area to obtain these data. The author compared these results with the percentage of respondents who had attachments from each survey area to examine relationships between income and attachment. Population and median household income data were used in conjunction with survey results and surge inundation maps to demonstrate any relationships among attachment in flooded or non flooded areas. The author examined a specific survey area to see if it was a flooded or non flooded area. Once determined if the area was a flooded or non flooded area, the number of respondents with attachments from that area was calculated. Population and income data were observed next to assess any possible relationships among flooding, population, income and attachment.

Water level maps for Orleans and St. Bernard Parishes created by the National Oceanic and Atmospheric Administration (NOAA) were used for comparisons in Orleans and St. Bernard Parishes only (Appendix A, Map 16). The color coded map displays how many feet of water were measured in Orleans and St. Bernard Parishes. This information assisted the author in making assumptions as to why attachments occurred more in certain survey areas than others, especially in Orleans Parish. Establishing a relationship between locations of the objects of attachment with water levels in those locations was another use for water level information. The author also used these water level data in conjunction with the survey data, income data and population data to reveal relationships between the number of respondents with attachments and survey areas in Orleans Parish.

A map from the LSU Hurricane Center showing the population who did not evacuate was used to further examine the occurrence of attachment in Orleans Parish.
(Appendix A, Map 17). This color coded map displays how many people per block group did not evacuate for Hurricane Katrina. This information was used in conjunction with survey results from Orleans Parish. The author compared the number of respondents with attachments from each survey area in Orleans Parish to the map. This helped support explanations for attachment and to demonstrate if there was any relationship between the number of people with attachments and number of people who did not evacuate in each survey area.

The first surge inundation map the author examined was the St. Bernard Parish map. St. Bernard Parish experienced Hurricane Katrina surge inundation in most of the parish (Appendix A, Map 1). This map demonstrates how much of the parish was engulfed with water. The survey area of St. Bernard Parish, which was Meraux, was designated as cell CC-36 on the surge inundation map (Appendix A, Map 11). The Meraux survey area was a flooded area. The author analyzed the number of respondents who lived in Meraux prior to Hurricane Katrina who had an attachment and compared that number with median household income, the population prior to Katrina, the water level received and the number of people who did not evacuate (Appendix B, Table 2). By analyzing all the data, the author was able to interpret patterns of attachment within the Meraux survey area.

The Orleans Parish surge inundation and base elevation map shows that the majority, if not all of the survey areas in Orleans, received surge inundation (Appendix A, Map 2). The cell designated as cell DD-30 provides the map for Lakeview (Appendix A, Map 12). Once the survey area was established as a flooded area, the author examined the number of respondents with attachments in that area. Those numbers
were compared to median household income, population prior to Katrina, water levels and the number of people who did not evacuate (Appendix B, Table 2). Those data were analyzed to help interpret patterns of attachment in the Lakeview area.

The cell designated FF-36 determined surge inundation for New Orleans East (Appendix A, Map 13). This survey area was a flooded area also. The number of respondents with attachments was compared to the number of people who did not evacuate, the median household income, the population prior to Katrina and the level of water it received (Appendix B, Table 2). Explanations as to why attachments were formed in New Orleans East were supported using these data.

The survey area in Uptown New Orleans was located as cell CC-31 (Appendix A, Map 14). This survey also received a surge inundation and therefore was a flooded area. The median household income, water level, number of people who did not evacuate, and the population prior to Katrina were compared to the number of respondents who had attachments in that area (Appendix B, Table 2). Explanations regarding attachment in the Uptown area were made by comparing these data.

The St. Tammany surge inundation map showed that all four survey areas in that parish received surge inundation (Appendix A, Map 3). Covington was designated as cell CC31 (Appendix A, Map 5). The Lacombe study area was designated as cell NN39 (Appendix A, Map 6). There were two survey areas in Slidell. The first area was found in cell NN41 (Appendix A, Map 7). The second was in cell LL40 (Appendix A, Map 8). Information regarding water levels and the number of non evacuated people were not provided by NOAA and the LSU Hurricane Center for these areas. Therefore, the author compared the number of respondents with attachments from all of the survey
areas with the median household income and population prior to Katrina to help interpret patterns of attachment (Appendix B, Table 2).

The Jefferson Parish surge inundation map differs from the other maps in that it shows surge inundation and base elevations for Hurricanes Katrina and Rita (Appendix A, Map 4). This was the only map of its kind provided by FEMA. This map reveals that the majority of Jefferson received surge water. The two survey areas in Jefferson Parish were Metairie and Harvey. The cell designated as Z32 is a map of the Harvey survey area (Appendix A, Map 9). This area did not receive any water and therefore is a non flooded area. The second study area in Jefferson Parish was Metairie, which was cell DD-28 (Appendix A, Map 10). This area also did not receive surge water and was designated a non flood area. Water levels were not provided on the water level map by NOAA for Jefferson Parish and the number of non evacuated residents was not provided on the map by LSU. Therefore the author compared the number of respondents with attachments for both survey areas to the population prior to Katrina and the median household income (Appendix B, Table 2). These were the only data used by the author in making assumptions regarding attachment in those areas.
Chapter 4

Results

The surveys that were returned from the study areas chosen revealed that most of the participants did not have an emotional attachment to objects left by Hurricane Katrina. Out of the 250 survey packets distributed, 89 surveys were returned. Less than half of the people who returned surveys, 38.2%, had an emotional attachment to an object left by Katrina. The participant was asked not to finish the survey if she/he felt that she/he had not become emotionally attached to an object/debris left by Katrina. Twenty five survey packets were distributed to 10 study areas.

- 25 survey packets were distributed to St. Bernard Parish. Only 2 surveys were returned from people who said that they lived in St. Bernard Parish prior to Katrina. Assuming these participants presently lived in St. Bernard Parish, 23 households that surveys were delivered to did not respond.

- 100 survey packets were distributed to St. Tammany Parish. Five surveys were returned from people who said that they lived in St. Tammany prior to Katrina. Assuming these participants presently lived in St. Tammany Parish, 95 households that surveys were delivered to did not respond.

- 50 survey packets were distributed to Jefferson Parish. Seven surveys were returned from people who said that they lived in Jefferson Parish prior to Katrina. Assuming these participants presently lived in Jefferson Parish, 43 households that surveys were delivered to did not respond.
- 75 survey packets were distributed to Orleans Parish. Twenty surveys were returned from people who said that they lived in Orleans Parish prior to Katrina. Assuming these participants presently lived in Orleans Parish, 55 households that surveys were delivered to did not respond.

- 55 surveys were returned by participants who did not have an attachment. Because the rest of the survey was not filled out, the author does not know which study area the survey is being returned from. Therefore, assumptions can only be made based on surveys that were completed.

If the participant felt that she/he had not formed an attachment to an object, it is possible that the participant used some other form of coping mechanism to deal with the aftermath of Hurricane Katrina. How an individual deals with the stress of a natural disaster greatly depends on their support systems and how she/he perceives the disaster.

During and after Hurricane Katrina, several parishes received large surges of water that resulted in terrific flooding. Government agencies at all levels immediately began measuring water levels throughout several Louisiana parishes. Aerial photographs, satellite images and ground truthing were tools used to collect water level data.

FEMA’s surge inundation maps (Appendix A) demonstrate how far inland water traveled because of Hurricane Katrina. Although most of the author’s study areas received some type of flooding, Orleans and St. Bernard Parishes received the most. Of the survey areas, there were no respondents who lived in Covington and Lacombe prior to Katrina. These areas did receive a surge inundation and had fairly high median household incomes in comparison to the rest of the survey areas (Appendix A, Table 2).
This could mean that participants who received the survey in that area either didn’t live in that area prior to Katrina or the participants in those areas didn’t experience as much damage as other areas. Although those areas did receive a surge inundation, those areas probably didn’t receive extreme damage, resulting in lower stress and coping tactics exhibited by people living in those survey areas.

The first question of the survey asked the participant if she/he has become emotionally attached to an object or debris left behind by Hurricane Katrina. If she/he answered yes to this question, the participant went on to answer the rest of the questions in the survey. There were 34 surveys returned with “yes” as the answer to question one. Of the surveys with “yes” as the answer to question one, 20 of those respondents lived in Orleans Parish prior to Katrina, 7 lived in Jefferson Parish, 5 lived in St. Tammany and 2 lived in St. Bernard. Approximately 60% of the respondents who had an attachment lived in Orleans Parish prior to Katrina. Of that 60%, 10% lived in Uptown New Orleans, 35% lived in New Orleans East and 55% lived in Lakeview. The respondents who lived in Jefferson Parish prior to Katrina were 20% of the respondents. Approximately 43% of the respondents were from Metairie and 57% were from Harvey. The respondents who lived in St. Tammany Parish prior to Katrina accounted for 14% of those who had an attachment. Of the 14%, all of the respondents came from Slidell. There were 6% of the respondents who lived in St. Bernard Parish prior to Katrina and all were from Meraux.

A Mann Whitney U test was used to test for a significant difference in the hypothesis; There will be more respondents with attachments in flooded areas than respondents with attachments in non flooded areas (Appendix B, Figure 1).
number of respondents with attachments was ranked for flooded and non flooded areas. This test uses U values, with $U_1$ being ranks for flooded areas and $U_2$ being ranks for non flooded areas. The lowest U value is used to compare with a critical value. In this test, the $U_2$ value, which was 6, was the lowest. With $P>0.05$, the U critical value is found using the number of samples from both flooded and non flooded areas ($N_1$ and $N_2$). The U critical value was 0. If the $U_2$ value is greater than the U critical value, than the null hypothesis must be accepted. Therefore, in this test, the $U_2$ value (6) was greater than the U critical value (0) and the null hypothesis; flooded areas did not have a greater number of responses than non flooded areas from respondents with attachments who lived in each study areas prior to Katrina must be accepted ($U = 6$, $N = 11$, $P>0.05$).

The percentage results of question one, which was if the respondent had formed an attachment, revealed that 38% of the respondents did have an attachment to an object. The majority of the respondents, 60%, lived in Orleans Parish and the majority of those respondents lived in Lakeview prior to Katrina. To try to answer the question, why most of the respondents who formed attachments live in Lakeview, the author referred to the surge inundation and water level maps (Appendix A, Maps 12 and 16). Those maps showed that Lakeview was in a flooded area and in fact received 0-10 feet of water. This survey area received the highest amount of water of all the survey areas. The median household income for that ZIP code is $51,684. This was the highest income of all the survey areas. The population in this ZIP code prior to Katrina was 22,951 and the number of people who did not evacuate was 0-158 people per block group. It is possible that this community of people may have formed their own
therapeutic community by becoming attached to objects. The attachment to objects became a social endeavor, in that the objects allowed them to share memories, cope with their new reality and begin the rebuilding process. A community’s social environment defines the limits of acceptable individual and collective behaviors and puts pressure on its members to conform to social norms (Edwards 1998). This may explain the large attachment in this area to specific objects.

Question two asked the participant to what type of object or debris she/he had formed an attachment. The participants expressed attachments to some very interesting objects (Appendix B, Table 1 and Appendix C). Approximately 45 items were listed, although many of the participants displayed attachments to similar, if not the same objects. Out of the 45 items, 9 of those were personal items, such as pictures, clothes and glassware. That makes personal items, the number one answer out of the type of object to which the person is attached. The items were not from one particular area. Trees were the second most common object of attachment. These items were also not from one particular area. Debris and items found throughout the metro area were the next most common items to which people had formed attachments. These items ranged from New Orleans Water Board drain covers, to the debris that was once the respondent’s home. The rest of the objects of attachment included “X”s, waterlines, FEMA trailers, buildings and American flags. The surveys reflected that participants in Orleans Parish, which is the parish home to the most respondents and the location of most of the objects of attachment, displayed more attachments to “X”s on homes and American flags. The area where this occurred in Orleans Parish was Lakeview.
Jefferson Parish had the second highest number of respondents with attachments, 20%. The study areas in Jefferson Parish had similar incomes and population prior to Katrina in comparison to the other study areas. The respondents from these study areas displayed more attachment to objects outside of their parish. The objects consisted of “X”s, religious statues and buildings. Jefferson Parish respondents said more often than not that they felt their attachment was influenced by the type of object. The surge inundation maps show that neither of these study areas was a flooded area. Therefore, the objects of attachment for this parish were located mostly outside of the parish and evidently held memories reflecting past experiences or beliefs.

Question three was multiple choice and fill in the blank. This allowed the participant to explain what influenced the attachment to the object if the answers provided did not suffice. The most common answer for what influenced the attachment was the type of object. This answer was given the most for objects located in Lakeview. Respondents who had attachments to objects in Lakeview said the type of object influenced the attachment 41% more than respondents from other areas who had the same answer. The second most common choice was the open ended option. Many of the answers given in this option centered on the emotion behind the object, or the simple fact that it “survived” Katrina. This answer was given 27% more by people who had formed attachments to objects in New Orleans East. New Orleans East received 1-7 feet of water according to the water level map (NOAA). Therefore, this answer being given by respondents from New Orleans East is understandable. The third most common answer as to why the participant feels what influenced the attachment was due
to the location of where the object was left. This answer was distributed evenly among people who had formed attachments to objects in Lakeview, Slidell and New Orleans East. The fourth most common answer given for what influenced the attachment was the position in which the object was left. Nine respondents gave this answer. Most of them formed attachments to objects in New Orleans East and all of the objects in New Orleans East were boats. The least common answer given by respondents when asked what they feel influences the attachment was the size of the object. Only 6 respondents gave this answer. Two of the respondents had objects located in Slidell, and 2 had objects from New Orleans East. All of those objects were boats. The other 2 respondents had attachments in Lakeview and St. Bernard Parish. Those objects were a memorial and a tree.

Hurricane Katrina resulted in temporary and permanent changes to the landscape in the New Orleans metro area (Appendix D and E). Question four asked the participant if the object of attachment was a temporary change or a permanent change. Approximately 53% said their object was a temporary change, while 47% said it was a permanent change. Out of the 53% who said their object was a temporary change, 61% were from Orleans Parish prior to Katrina. The percentage of people from New Orleans East was 27%, the percentage from Lakeview was 55% and the percentage from Uptown was 18%. The respondents from Jefferson Parish who said their object was a temporary change accounted for 11%. They were all from Harvey. The percentage of respondents from St. Tammany Parish who said their object was temporary was 17%. They were all from Slidell. Finally, the percentage of respondents who said their object was temporary in St. Bernard Parish, namely Meraux, was 11%.
Out of the 47% who said that their object of attachment was a permanent change, 63% were from Orleans Parish prior to Katrina. Approximately 40% were from New Orleans East, 50% were from Lakeview and 10% were from Uptown. Respondents who lived in Jefferson Parish prior to Katrina accounted for 25% of the respondents who said their object of attachment was the result of a permanent change. Half of the respondents were from Harvey and half were from Metairie. Only 12% were from St. Tammany Parish and all were from Slidell. There were no respondents who lived in St. Bernard Parish prior to Hurricane Katrina who said their object of attachment was the result of a permanent change.

The higher percentage of respondents who said their object of attachment was a temporary change may reflect those objects that could be moved or have been moved. For instance, boats, debris, “X”s and waterlines were common objects to which people formed attachments. The respondents with objects that were temporary changes may have had attachments to those types of objects. The percentage of people with attachments to objects that are permanent changes may account for the respondents whose objects are personal items or buildings.

The changes to New Orleans’ landscape hold different meaning or memories to the residents of the area. Question five addresses these changes by asking which changes have had more of an impact on the participant, the permanent changes or the temporary changes. Seventy three and a half percent of the participants said the permanent changes hold more meaning or memories to them, while 26.5% said it was the temporary changes. Out of the 73.5% who said the permanent changes hold more memories or have had more of an impact on them, about 64% lived in Orleans Parish.
prior to Hurricane Katrina. The 64% is comprised of 44% who are from New Orleans East, 44% who are from Lakeview and 12% who are from Uptown New Orleans. Orleans Parish received a great deal of damage from Katrina, resulting in the permanent loss of homes and possessions. Many participants may have been unable to replace those objects. Many people lost their jobs and social outlets such as a favorite restaurant. These may be possible reasons as to why the permanent changes had more of an impact on him/her.

For the 26.5% who said the temporary changes hold more memories or have had more of an impact on them, 44% are from Orleans Parish. All of those respondents lived in Lakeview prior to Katrina. St. Tammany Parish accounted for 33% of the respondents and they were all from Slidell. St. Bernard accounted for 23% and all of the respondents lived in Meraux prior to Hurricane Katrina. Survivors of Hurricane Katrina had to reclaim their possessions that Katrina left behind and rebuild their lives. They faced a new reality without many of their possessions or amenities they had prior to Katrina. It may have been hard to face this new reality without having the normal objects or places that provided comfort. Therefore, the temporary changes had more of an impact on him/her.

Orleans Parish was devastated by Katrina due to high water levels and surge inundation. A large portion of people from particular survey areas in New Orleans did not evacuate, resulting in a great loss of life and property. There is a large variation in median household income for the three survey areas in Orleans Parish. The Uptown area experienced the least damage of the Orleans Parish survey areas and had the lowest income and smallest population prior to Katrina. This may explain why there was
a low percentage of people who felt the permanent changes have had more impact on them. New Orleans East had a lower income than Lakeview, but had a higher number of people who did not evacuate for Katrina. These people may have experienced more loss and damage and are not as capable of replacing or rebuilding what was lost because of their smaller incomes.

Although more respondents said their objects were a temporary change, the permanent changes to the landscape have had more on an impact. As for the respondents who said the temporary changes had more of an impact on them, the majority were from Lakeview. These respondents and those from Slidell and Meraux experienced great loss and devastation from Hurricane Katrina and had a more difficult time with the temporary changes. Their new landscapes and realities will have lasting memories or impacts on them, but it is hard to specify exactly why.

Encountering objects on a daily basis may promote attachment to an object (Terkenli 1995). In question six, the participant was asked if she/he encountered the object of attachment as part of their daily routine. Almost 71% of the participants answered yes to this question and 29% answered no. Of the 71% who encountered their object on a daily basis, 67% of the respondents had an object of attachment located in Orleans Parish. Approximately 38% of the respondents encountered objects in New Orleans East, 44% encountered their object in Lakeview and 18% encountered their object in Uptown New Orleans. About 13% of the respondents encountered their object in St. Tammany Parish and they were all from Slidell. In St. Bernard Parish, 8% of the respondents with attachments in that parish encountered the object on a daily basis. Eight percent of respondents simply said they encountered their objects in all of
the parishes. Finally, 4% of the respondents who encountered their objects on a daily basis encountered the objects in Jefferson Parish, namely Harvey.

Twenty nine percent of the participants said that they did not encounter their objects on a daily basis. Of the 29%, 70% did not encounter their objects located in Orleans Parish. About 85% of the objects were located in Lakeview and 15% of the objects were in New Orleans East. St. Tammany Parish accounted for 20% of the respondents who did not encounter their objects daily, namely in Slidell. Only 5% of the respondents did not encounter their objects daily which were located in St. Bernard Parish.

The larger number of respondents who encountered their objects daily lived in Orleans Parish prior to Katrina. This would make sense because most of the objects of attachment are located in Orleans Parish. More respondents are from New Orleans East, which has been slow to recover from Katrina’s wrath. Due to the slow recovery and rebuilding, it is possible that these people are more likely to encounter their object because it has not been moved yet.

Question seven asked the participants how they would feel if the object they were attached to was moved. This was a multiple choice question and the most common answer given was that the participant would be sad or distressed if the object was moved. Approximately 53% of the participants gave this answer, followed by 31.5% who said they would be happy or relieved if the object was moved and 15.5% said they would feel indifferent. Out of the 53% who said they would feel sad or distressed if their object was moved, 76% had objects of attachment located in Orleans Parish. In Orleans Parish, 61.5% of the participants had objects of attachment located
in Lakeview, 31% of the objects were located in New Orleans East and 7.5% were located in Uptown New Orleans. Respondents in Lakeview had formed attachments to similar objects, which may have been the result of that particular community’s social response. This may also be the case with how people in that particular area react when their object is moved.

The respondents who said that they would be happy or relieved if their object of attachment was moved accounted for 31.5%. Of the 31.5%, approximately 73.5% had objects of attachment located in Orleans Parish, the majority of those being from Lakeview. St. Tammany Parish was the location of 11.8% of the objects of attachment for respondents that said they would be happy or relieved if their object was moved. There was only one respondent whose object was located in St. Bernard Parish, which was the location 8.8% of the objects of attachment. There were no respondents who would be happy or relieved that had objects of attachment located in Jefferson Parish, which was the location of 5.9% of the objects of attachment. The number of respondents with this answer may feel that they will be able to move on or resume some type of normality when the object is gone.

The feeling of indifference regarding the movement of the object of attachment accounted for 15.5% of the respondents. Orleans Parish accounted for 40%, with half of the respondents having objects of attachment located in New Orleans East and half having objects located in Lakeview. St. Tammany Parish accounted for 20%, Jefferson Parish accounted for 20%, with respondents who had objects of attachment located in Slidell and Harvey. The last 20% was from respondents who felt indifferent about their objects being moved and those objects were located in several places in the New
Orleans metro area. This answer shows that the object is not affecting how the person is carrying on with their normal lives or routines.

Question eight of the survey asked the participant why she/he feels that she/he has formed an attachment to an object left by Hurricane Katrina. This was also a multiple choice and open ended question that allowed the participant to provide an additional answer. Although many participants circled several answers, the most common answer given was that the object reminded them of the power and devastation of Katrina. The majority of the respondents with this answer, 62% lived in Orleans Parish prior to Hurricane Katrina. Lakeview accounted for 46.5% of the respondents who lived in that area prior to Hurricane Katrina, followed by 38.5% in New Orleans East and 15% in Uptown New Orleans. Jefferson Parish accounted for 24% of the respondents who said their object reminds them of the power and devastation of Katrina. Of the 24%, 60% resided in Harvey and 40% resided in Metairie. St. Tammany Parish accounted for 9% of the respondents with that answer and St. Bernard Parish accounted for 5%. The ferocity of Katrina was felt throughout Louisiana parishes. Therefore, the fact that their object reflects the power and devastation of Katrina is not surprising.

The second most common answer was that the object symbolized what she/he as a victim has gone through. The majority of the respondents, 69%, lived in Orleans Parish prior to Hurricane Katrina. In Orleans Parish, 55% lived in Lakeview and 45% lived in New Orleans East. Approximately 19% of the respondents who chose the fill in the blank lived in St. Tammany Parish, 6% lived in Harvey and 6% lived in Meraux. After one of the worst natural disasters this country has experienced to date, it is not
uncommon for victims to share what they went through. Feeling the need to share memories and stories which can be better conveyed through objects, may aid in the social, economic and emotional support the victim needs to recover.

The rest of the answers, “c, remind others what you have been through, d, serve as a souvenir or keepsake that makes you part of this historical event or have rightfully earned”, and “e, helps you to cope with loss and move on” were answered by all of the study areas. However, more respondents from Lakeview chose those answers. Those who filled in the blank in the open ended answer, which was answer “f”, had a variety of reasons for why they feel the attachment formed, but the idea of recovery was a recurring theme as to why the respondent felt an attachment was formed.

Hurricane Katrina has altered the physical landscape as well as the cultural landscape of New Orleans. Question nine encourages the participant to think about the changes to New Orleans and asked if they view this new landscape as unique. About 29% said no, that they did not view the new landscape as unique, while 71% said yes. Out of the 71% who said that they viewed the new landscape as unique, 77% were from Orleans Parish. Approximately 40% were from New Orleans East, 47% were from Lakeview and 13% were from Uptown New Orleans. Respondents who lived in St. Tammany Parish prior to Katrina and felt that the new New Orleans landscape was unique totaled 19%, while Jefferson, namely Harvey, accounted for 15%. Meraux accounted for 7%.

Only 29% of the respondents did not view the new New Orleans landscape as unique. Of those respondents, one was from Harvey, two were from Metairie and three were from Lakeview. With more research, the author may have been able to explore
the effects of these perceptions on the attitude of residents who wanted to rebuild versus those who didn’t because of the changes to New Orleans’ landscape.

The final two questions asked for the ZIP code in which the participant lived in prior to Katrina and the ZIP code or area that the object of attachment is located. The answers given for these two answers allowed coinciding maps to be created for comparative purposes. The majority of the participants, 60% resided in Orleans Parish prior to Hurricane Katrina. Approximately 55% lived in Lakeview, 35% lived in New Orleans East and 10% lived in Uptown New Orleans. About 20% of the participants lived in Jefferson Parish, with 57% living in Harvey and 43% living in Metairie. St. Tammany Parish totaled 14% of the residents, all coming from Slidell and 6% in St. Bernard Parish, all of those coming from Meraux. The most common area in which the objects of attachment were located was Orleans Parish, with 73% of the objects being located there. The second most common area was St. Tammany Parish with 12%, followed by St. Bernard Parish with 9% and Jefferson Parish with 6%.

These results demonstrate that the majority of people who participated in the survey did not form a personal attachment to an object left on the landscape by Hurricane Katrina. However, those participants who did form an attachment to an object revealed attachments to a variety of objects. The type of object seemed to be the biggest influence on why the attachment was formed. Most of the objects that the participants formed an attachment to were the result of temporary changes to the landscape, but it was the permanent changes to the landscape that held more meaning or had more of an impact on them.
The majority of the participants said that the object of their attachment had become a part of their daily routine and that they would be sad or distressed if or when the object was moved. When the participant was asked why she/he felt she/he had formed an attachment to an object, the most common answer given was that the object reminded him/her of the power and devastation of Katrina (Appendix B, Table 3).

The changes in New Orleans' landscape have altered the landscape and the majority of participants view the new landscape as unique. The people who participated in this survey although scattered across the New Orleans' landscape, resided mostly in Orleans Parish. The objects of attachment were also concentrated in Orleans Parish, namely the Lakeview area (see maps 3 and 4 below).
Map 3. Where respondents lived prior to Hurricane Katrina

Where respondents lived prior to Hurricane Katrina

Parish lived in prior Hurricane Katrina
- St. Bernard - 5.7%
- St. Tammany - 14.3%
- Jefferson - 20%
- Orleans - 60%
Since most of the respondents lived in Orleans Parish prior to Hurricane Katrina, the author explored the relationship between those respondents and their attachments. A Kruskal Wallis test was used to see if there was a significant difference in the number of respondents who had attachments among three parishes (Appendix B, Figure 2). Those parishes were Orleans, St. Tammany and Jefferson. St. Bernard Parish was not used in this test because the test requires that a category have at least 2 sets of data. St. Bernard only had one, that being Meraux. Only two respondents with attachments lived in Meraux prior to Hurricane Katrina, therefore leaving St. Bernard out did not
appreciably influence the results. Ranking data using the Kruskal Wallis test provides
an H value, which approximates a Chi Square distribution. The hypothesis states that
there is a significantly larger number of responses from Orleans Parish compared to St.
Tammany and Jefferson Parishes. With this test, the H value was 2.25 for P > 0.1 and
the critical value was 4.60, therefore the author had to accept the null hypothesis.

NOAA generated a map displaying water levels in Orleans Parish (Appendix A).
The author compared this map to the ZIP codes of the respondents who lived in
Orleans Parish prior to Katrina. Using Google maps, the author pinpointed specific ZIP
codes and compared their locations with the same locations on the water level map.
Many of the respondents, 45%, lived in ZIP code 70124 prior to Hurricane Katrina,
which is Lakeview. That ZIP code received up to 10 feet of water, which was more than
the rest of the ZIP codes given for Orleans Parish. Lakeview is also the area listed the
most as the location where the object of attachment is located. However, the results of
the Mann Whitney U test previously conducted demonstrated that there was no
significant difference between respondents in flooded versus non flooded areas.

Demographic and water level data for the study areas are located in
Table 2 of Appendix A. Respondents from Lakeview may have been among the almost
23,000 residents in that area prior to Katrina (US Census Bureau). According to the
LSU Hurricane Center’s map which shows the number of people who did not evacuate
in Orleans Parish, about 0-158 people per block group in that particular ZIP code did not
evacuate for Hurricane Katrina (Appendix A). The median household income for
Lakeview ZIP code 70124 in 2000 was $51,684 (US Census Bureau).
Approximately 35% of the respondents lived in New Orleans East. Respondents from that area were exposed to 1-7 feet of water. According to the US Census Bureau, the population in that study area prior to Hurricane Katrina was 20,556 and had a median household income of $42,326 in 2000. That particular population had one of the highest rates of non evacuated residents of all the study areas, with 620-913 people per block group not having evacuated (LSU Hurricane Center).

The Uptown area of Orleans Parish was the least affected of the study areas in Orleans Parish. Respondents from the Uptown area accounted for 10% of the respondents from Orleans Parish. The study area with the ZIP code of 70130 received 0-1 feet of water according to the LSU Hurricane Center’s map of water levels. The population was 14,891 and the median household income was $26,387 in 2000 (US Census Bureau). Also according to the LSU Hurricane Center, about 75-98 people per block group in that ZIP code did not evacuate for Hurricane Katrina.

The results from the surveys and the data collected from the US Census Bureau and the LSU Hurricane Center aided in understanding the possible rationale behind the formation of attachments. There is a relationship between people becoming attached to objects and the Lakeview area. Not only was this the area where most respondents lived prior to Hurricane Katrina, but it was also the area where most of the objects of attachment were located. Several of the respondents displayed an attachment to the same types of objects, more so than any of the other study areas. Lakeview proved to be the more wealthy study area, received the highest water levels of all the study areas and did not have a very high rate of people who did not evacuate.
Chapter 5

Discussion

The purpose of this thesis research was to conduct a study reflecting the general behavior of residents in the New Orleans metro area to a post Hurricane Katrina phenomenon; the phenomenon being the personal or emotional attachment to an object left on the landscape by Hurricane Katrina. The primary tool used in the research was the survey. The survey was created to determine if an attachment was formed by the residents, and to reveal why the attachments were formed. The survey was also used as a way to examine the spatial relationship between the location of the residents prior to Katrina and the percentage of people in a certain areas who had attachments. By asking for the location of the object of attachment in the survey, the author was able to determine if objects are located in one particular area more than other areas. Data from the US Census Bureau and the LSU Hurricane Center helped deepen the spatial relationships between the study areas and level of attachment exhibited by respondents.

There were some areas of the New Orleans metro area that were damaged much more by Hurricane Katrina than others. All of the survey areas were examined for water levels and surge inundation. Most of the study areas with the exception of Harvey and Metairie experienced a surge inundation. Areas such as Orleans and St. Bernard parishes took a devastating hit. The survey was used to see if participants from certain areas demonstrated attachments more than those in other areas. The results showed that the participants from Orleans Parish revealed the most attachments and that the
most objects of attachment were located in Orleans Parish, namely Lakeview. The author took the analysis further with Orleans Parish because of the survey results. Data from the US Census Bureau and the LSU Hurricane Center helped to support the relationship between attachments and the Lakeview survey area. Lakeview proved to have the most water, the highest income, the most attachments, and the area where the most objects of attachment were located. Lakeview residents obviously lost the most of all the study participants because of the water level. The residents of Lakeview possibly had more expensive possessions because of the higher income and agonized more over their loss. The level of devastation in this area, unseen to some of the other study areas, may have resulted in the increase of attachment to objects in the attempt to move forward.

The author used the data from the surveys, the US Census Bureau and the LSU Hurricane Center to perform a Mann Whitney U statistical test. This tested for a significant difference between the respondents who had attachments from each survey area in flooded versus non flooded areas. The test proved that there was not a significant difference between respondents in flooded areas versus non flooded areas. Although the number of respondents with attachments did not come more from flooded areas than non flooded areas, the author was still able to use surge inundation and water level data to help explain why attachments may have formed in one area more than others.

A Kruskal Wallis statistical test was used to test for significant differences in the number of respondents with attachments among the parishes. Three parishes were used for this test, Orleans, Jefferson and St. Tammany. St. Bernard Parish could not be
used because this test calls for each category to have at least 2 data sets. St. Bernard Parish only had one, Meraux. Since only two respondents lived in Meraux prior to Hurricane Katrina, leaving St. Bernard Parish out did not appreciably influence the results. The results from the Kruskal Wallis test showed that there was not a significant difference in the number of respondents with attachments among the three parishes. Although the majority of the respondents did live in Orleans Parish prior to Katrina, there was not a significant difference in those numbers compared to Jefferson and St. Tammany Parishes.

The author performed formal tests of significance for the sake of completeness. However, there are no apparent trends in the number of responses from flooded versus non-flooded areas, or in the number of responses among the parishes. It is not a matter of an apparent trend that was non-significant. Because of the small sample size, there is little pattern to suggest any effects of flooding or spatial location on the respondents.

Approximately 38% of the participants exhibited an attachment to an object and/or debris left by Katrina. Twenty percent of the respondents with an attachment lived in Jefferson Parish prior to Katrina. The respondents who lived in St. Tammany Parish prior to Katrina accounted for 14% of those who had an attachment. There were 6% of the respondents who lived in St. Bernard Parish. Approximately 60% of the respondents who had an attachment lived in Orleans Parish prior to Katrina. Fifty-five percent lived in Lakeview. Lakeview was in a flooded area that received 0-10 feet of water. The median household income for that ZIP code was $51,684 and was the highest income of all the survey areas.
The participants who expressed that they have an attachment to an object may be displaying problem-focused coping. Victims of a natural disaster exhibit problem-focused coping in an effort to take action by reclaiming their possessions from a destroyed home or area (Edwards 1998). Although some participants did not exhibit an attachment to one of their possessions, the attachment process itself is still a form of coping. The ferocity of Hurricane Katrina left victims searching for ways to recover from the damage left behind. Becoming attached to objects is not only a way to cope, but is a social endeavor and is the result of identity preservation. The objects reflect the personal identity of the individual or the identity of the devastated area. The objects stimulate memories and stories that can be shared among victims and signify an important change in their lives. Humans need to hold onto memories of a colossal event by collecting and preserving physical reminders of it (Smith 2006). Residents of the Lakeview area expressed strong attachments to objects in that area. Because so many of the respondents were from Lakeview, the attachment phenomena may be a community’s way of preserving their identity. Being able to have a commonality among a group of victims provides the victims with reassurance and support which is a central factor in emotion-coping strategies (Edwards 1998). The commonality of objects reflects the importance of certain symbols in that community, i.e. the American flag and “X”s on homes. The bond of attachment may be used to help the community resurrect from Katrina’s rubble.

The participants demonstrated attachments to several types of objects. Approximately 45 items were listed, although many of the participants displayed attachments to similar, if not the same objects. Out of the 45 items, 9 of those were
personal items, such as pictures, clothes and glassware. After Hurricane Katrina, personal items seemed to have more meaning. Trees were the second most common object of attachment, however, all of the objects listed above were not from specific areas. Debris and items found throughout the Metro area were the next most common items people had formed attachments to and these items ranged from New Orleans Water Board drain covers to the debris that was once the respondent’s home. More objects of attachment were located in Orleans Parish, namely in Lakeview. The respondents from Jefferson Parish displayed more attachment to objects outside of their parish. The surge inundation maps show that both survey areas in Jefferson Parish were in non flood zones, therefore objects outside of this parish held more meaning to them since there were fewer in Jefferson Parish. St. Tammany Parish seemed to exhibit attachments to boats more than any other parish.

The most common answer for what influenced the attachment was the type of object. This answer was given the most for objects located in Lakeview. The second most common choice was the open ended option. Many of the answers given in this option centered on the emotion behind the object, or the simple fact that it “survived” Katrina. This answer was given 27% more by people who had formed attachments to objects in New Orleans East, which received 1-7 feet of water according to the water level map. Therefore, this answer being given by respondents from New Orleans East is understandable since many people in this area lost everything.

According to the surveys, the object reflected the power and destruction of the storm. The majority of the respondents with this answer, 62% lived in Orleans Parish prior to Hurricane Katrina and Lakeview accounted for 46.5% of that. Jefferson Parish
accounted for 24% and St. Tammany Parish accounted for 9% of the respondents. The objects of attachment allow people to reminisce about what the object looked like before the disaster, how it has changed, and ultimately how their life has changed.

The second most common answer was that the object symbolized what they as a victim have gone through. The majority of the respondents, 69%, gave this answer lived in Orleans Parish prior to Hurricane Katrina. In Orleans Parish, 55% lived in Lakeview and 45% lived in New Orleans East. Approximately 19% of the respondents who chose to write in their own answers lived in St. Tammany Parish. Humans feel a need to validate their experiences and share them with other people. These objects of attachments are physical memories that can do just that.

People who formed attachments to restaurants, churches or buildings (Appendix B, Table 1) on the landscape use those objects to reminisce about how their lives, routines and habits used to be. All the objects of attachment, regardless of how personal they were prior to Katrina provide the victim with a sense of nostalgia. There is a feeling of estrangement with the new post Katrina landscape and “we need the past, in any case, to cope with the present landscape” (Lowenthal 1975).

Nostalgia is a powerful feeling. Patterns and features in the landscape are familiar to us because we share a history with them. They are tangible evidence of our existence that provide a perceived identity. Humans make their environments comfortable with memorabilia from the past. Objects of attachment like those mentioned on the surveys may help to camouflage the present environment victims are trying to get used to.
The residents of the New Orleans metro area were accustomed to their environment before Hurricane Katrina changed its visage. The trees, the swampland, historic homes, all the features that made their home region recognizable were changed. When a natural disaster occurs, the time it happened and the damage it causes may intensify stressful feelings. The first images after a disaster may be the ones that stay with a victim. Much of that damage may be temporary but the memories of those initial glimpses may stay with the victim forever. One the other hand, much of the damage is permanent and home regions will remain altered. Changes to a home region can affect victims differently. In the case of the New Orleans metro area, the participants involved in the survey said that the permanent changes to the landscape have had more of an effect on them. Approximately 73.5% of the participants felt this way. About 64% lived in Orleans Parish prior to Hurricane Katrina, with 44% living in New Orleans East and 44% living in Lakeview. These two areas were devastated by Katrina flood waters and thousands of people lost everything they owned. Aside for personal possessions, restaurants, churches, jobs and other components of a person’s routine were lost. The places people visited, the activities they took part in as hobbies or the jobs that provided for their families were missing. These are permanent changes that affect the person’s reality. The landscape that once shared a history with them and held cherished memories to them is now a fabric of the past. It is the permanent changes that make it more difficult to envision this new environment as being their home region. However, the memories will help in the adjustment.

The temporary changes impacted 26.5% of the respondents more than the permanent. The majority were from Lakeview. What one person feels is temporary
may feel permanent to another. If a person lost his/her home and belongings, it may seem like a temporary situation, but have more of impact on him/her. Obviously, respondents from Lakeview had more trouble with the temporary changes, but without further research, it is difficult to explain exactly why.

Approximately 53% of respondents said their object of attachment was a temporary change to the landscape. Sixty one percent of those respondents lived in Orleans Parish prior to Katrina. The respondents from Jefferson Parish who said their object was a temporary change accounted for 11%. The percentage of respondents from St. Tammany Parish who said their object was temporary was 17%. The percentage of respondents who said their object was temporary in St. Bernard Parish was 11%. Humans are creatures of habit and changes to our landscape or routine, no matter how temporary, will affect us. A large percentage of people, 47%, said their object of attachment was the result of a permanent change. Out of the 47%, 63% were from Orleans Parish, 25% were from Jefferson and 12% were from St. Tammany Parish prior to Katrina. Many of the objects were personal possessions that were destroyed or damaged and will never be the same. They too were victims of Katrina and now they serve as a source of security and familiarity to the change the victim is going through. Other objects such as the water lines and the “X”s on the homes were not personal objects, but were a permanent change and had a dramatic effect on the victim nonetheless.

Every day people interact with their environment through culturally and personally learned behaviors and “the result is regions, landscapes, places and homes that differ on the basis of collective and individual choices” (Terkenli 1995). Over time,
people develop regular routines which usually results in emotionally committing
themselves to an area. The repetition of certain behaviors provides familiarity and
comfort. Hurricane Katrina left a lot of debris and objects in strange places. Almost 71%
of the participants said they encounter their object of attachment on a daily basis and
29% said they did not. Driving daily past a boat on the street or neutral ground can
become common place. That makes the idea of attachment to the object easier to
understand. The repetition of directly or indirectly interacting with the object daily
makes the object more familiar, more a part of their home region and therefore, easier
to become attached to and sad or distressed if moved. Of the 71% who encounter their
object on a daily basis, 67% of the respondents had an object of attachment located in
Orleans Parish. This is understandable seeing that most of the objects are located in
Orleans Parish and many areas of this parish are slow to recover and rebuild.
Encountering the object everyday may aid in explaining why 53% of the respondents
said they would be sad or distressed if/when their object were to be moved. Out of the
53% who said they would feel sad or distressed if their object was moved, 76% had
objects of attachment located in Orleans Parish, with 61.5% of the participants having
objects of attachment located in Lakeview. Respondents in Lakeview had formed
attachments to similar objects, such as “X”s and American flags, which may have been
the result of that particular community’s social response.

Approximately 31.5% of the respondents said that they would feel happy or
relieved if/when the object was moved and 15.5% said they would feel indifferent. Of
the 31.5%, approximately 50% had objects of attachment located in Orleans Parish and
20% were located in St. Tammany Parish. The number of respondents with this answer
may have felt that they did not need the object in order to move on or resume some type of normality.

Hurricane Katrina changed several aspects of the cultural and physical landscape of the New Orleans metro area. The home region of New Orleans residents vaguely resembles what many remember. The people have changed and old buildings were replaced by new ones. Some areas are still bare, yet to be replaced with vegetation or signs of life. New Orleans was viewed as a unique place before Hurricane Katrina and the residents of the area view this “new” New Orleans as unique too. About 29% said that they did not view the new landscape as unique, while 71% said they did. Out of the 71% who said that they viewed the new landscape as unique, 77% were from Orleans Parish, 19% were from St. Tammany Parish, and Jefferson Parish, namely Harvey, accounted for 15%. Meraux accounted for 7%. Only 29% of the respondents did not view the new New Orleans’ landscape as unique. This may demonstrate that amongst all the changes to the landscape good and bad, the residents of New Orleans can still see the distinctiveness in their home region.

The majority of Hurricane Katrina victims surveyed have not attached themselves to objects left by Katrina. It is possible that the participant used some other form of coping mechanism to deal with the aftermath of Hurricane Katrina. Individuals deal with the stress of a natural disaster differently. Stress levels and coping mechanisms greatly depend on support systems and how one perceives the disaster.

Those who have formed emotional attachments may use these objects as a way to cope and connect to the new landscape through memories and familiarity. The objects mostly reflect the devastation and strength of Katrina and are usually part of
daily routines. The permanent and temporary changes to the landscape have not
deterred New Orleans residents from recognizing the unique qualities of the area. The
attachment to objects is a normal behavior after a natural disaster. From the responses
of the surveys, it seems as though most residents have been able to cope without
having to attach themselves to objects. New Orleans residents are resilient but 38% of
respondents have formed attachments to objects. This suggests that approximately 1
out of every 3 respondents had an attachment to an object. If this ratio was compared
to the population in Orleans Parish prior to Hurricane Katrina, this would also suggest
that a fairly large amount of people have attachments to objects left by Katrina.
However, without further research it is difficult to say if this phenomenon is hindering the
rebuilding process in Orleans Parish.

This thesis research uncovered how a percentage of the New Orleans metro
area is handling the post Katrina recovery process. This research provides a foundation
for further examination and testing of the occurrence of emotional attachment after a
natural disaster. With larger sample populations and additional survey questions, this
type of research provides great potential for assessing emotional attachment to objects
in the New Orleans metro area.
References


Kroll-Smith, J. Stephen and Stephen R. Couch. “As if exposure to toxins were not enough: The social and cultural system as a secondary stressor”. *Environmental Health Perspectives* 95 (1991): 61-66.


Appendix A – Maps

Map 1. St. Bernard Parish

Map 2. Orleans Parish
Map 3. St. Tammany Parish

Map 4. Jefferson Parish
Map 13. Study area in New Orleans East

Map 14. Study area in Uptown New Orleans

Map 15. Source: LSU Hurricane Center
Map 16. Source: NOAA

Map 17. Source: LSU Hurricane Center
Appendix B – Tables and Figures

Table 1. Objects of attachment

<table>
<thead>
<tr>
<th>Objects of attachment</th>
<th>Objects of attachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plants/trees/tree roots</td>
<td>Sewerage &amp; Water Board drain covers</td>
</tr>
<tr>
<td>Boats- trapped in trees/on roads/waterways</td>
<td>Debris from what was left of the house</td>
</tr>
<tr>
<td>Billiard balls</td>
<td>25 year job certification</td>
</tr>
<tr>
<td>Travel trailer/FEMA trailer</td>
<td>Restaurant/church building</td>
</tr>
<tr>
<td>Water lines</td>
<td>Large roadside Hurricane Katrina memorial</td>
</tr>
<tr>
<td>Salvaged pictures and videos</td>
<td>Newspaper found between floor and subflooring of damaged house</td>
</tr>
<tr>
<td>“X”s on houses/ &quot;X”s on pieces of what is left of houses</td>
<td>American flags</td>
</tr>
<tr>
<td>Belongings left in the marsh</td>
<td>Sign saying “We will return home someday”</td>
</tr>
<tr>
<td>Hanging mirror/artwork</td>
<td>Clothing worn the day of evacuation</td>
</tr>
<tr>
<td>Statue of Mary/Crucifix</td>
<td>Chandeliers/glassware/collectibles</td>
</tr>
</tbody>
</table>

Table 2. Study area data and demographics

<table>
<thead>
<tr>
<th>Study Area</th>
<th># Respond based on pre-Katrina ZIP code</th>
<th>2000 Population for study area ZIP codes</th>
<th>Median Income</th>
<th>Surge Inundation</th>
<th>Water Level (if available)</th>
<th>Non-evacuated people per block group (if available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covington</td>
<td>0</td>
<td>8,483</td>
<td>$47,447</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slidell 1and Slidell 2</td>
<td>5</td>
<td>23,824</td>
<td>$45,728</td>
<td>Yes and Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lacombe</td>
<td>0</td>
<td>9,165</td>
<td>$39,556</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meraux</td>
<td>4</td>
<td>8,435</td>
<td>$47,958</td>
<td>Yes</td>
<td>4-7 feet</td>
<td>159-209</td>
</tr>
<tr>
<td>Harvey</td>
<td>3</td>
<td>42,582</td>
<td>$36,824</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metairie</td>
<td>2</td>
<td>39,774</td>
<td>$37,094</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Orleans East</td>
<td>7</td>
<td>20,556</td>
<td>$42,326</td>
<td>Yes</td>
<td>1-7 feet</td>
<td>620-913</td>
</tr>
<tr>
<td>Uptown</td>
<td>2</td>
<td>14,891</td>
<td>$26,387</td>
<td>Yes</td>
<td>0-1 foot</td>
<td>0-158</td>
</tr>
<tr>
<td>Lakeview</td>
<td>11</td>
<td>22,951</td>
<td>$51,684</td>
<td>Yes</td>
<td>0-10 feet</td>
<td>0-158</td>
</tr>
</tbody>
</table>
Table 3. Answers to surveys

<table>
<thead>
<tr>
<th>% Temp Object</th>
<th>% Permanet Object</th>
<th>More Impact From Temp Change</th>
<th>More Impact From Permanent Changes</th>
<th>Daily Routine Yes</th>
<th>Daily Routine No</th>
<th>Happy/Relieved if Object Moved</th>
<th>Sad/Distress if Object Moved</th>
</tr>
</thead>
<tbody>
<tr>
<td>53%</td>
<td>47%</td>
<td>26.5%</td>
<td>73.5%</td>
<td>71%</td>
<td>29%</td>
<td>37.5%</td>
<td>47%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indifferent if Object Moved</th>
<th>% Respondents in Orleans Prior Katrina</th>
<th>% Respondents in St. Tammany Prior Katrina</th>
<th>% Respondents in St. Bernard Prior Katrina</th>
<th>% Respondents in Jefferson Prior Katrina</th>
<th>% of Objects Located in Orleans Parish</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.5%</td>
<td>60%</td>
<td>14.3%</td>
<td>5.7%</td>
<td>20%</td>
<td>73.5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% of Objects Located in St. Tammany Parish</th>
<th>% of Objects Located in St. Bernard Parish</th>
<th>% of Objects Located in Jefferson Parish</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.8%</td>
<td>8.8%</td>
<td>5.9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What Influences Attachment Most Common Answers</th>
<th>Why Respondent Feels Attachment Was Formed Most Common Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>The type of object</td>
<td>Reminds them of power and devastation of Katrina</td>
</tr>
<tr>
<td>Other</td>
<td>Symbolizes what she/he as a victim have gone through</td>
</tr>
</tbody>
</table>
Figure 1. Mann Whitney U Test

Hypothesis – There are more respondents with attachments in flooded areas than respondents with attachments in non flooded areas.

Null hypothesis – There are not more respondents with attachments in flooded areas than respondents with attachments in non flooded areas.

Observations:

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of respondents with attachments from each study area</th>
<th>N1 = 7</th>
<th>N2 = 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flooded</td>
<td>11, 2, 7, 2, 5, 0, 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non flooded</td>
<td>3, 4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Obs  Rank

| 11F | 9 |
| 7F  | 8 |
| 5F  | 7 |
| 4NF | 6 |
| 3NF | 5 |
| 2F  | 4 |
| 2F  | 3 |
| 0F  | 2 |
| 0F  | 1 |

Observations  Rank

| 0, 0, 2, 2, 3, 4, 5, 7, 11 | =34 |
| 1.5, 3.5, 5, 6, 7, 8, 9    | =11 |

\[ R1 = \text{sum of ranks for flooded areas} = 9+8+7+6+4+3+2+1 = 34 \]

\[ R1 = 34 \]

\[ R2 = 11 \]

\[ U1 = N1xN2 + [N1(N1 + 1)/2] – R1 \]
\[ 7 \times 2 + [7(7+1)/2] – 34 \]

\[ U1 = 8 \]

\[ U2 = N1 x N2 \times [N2(N2 + 1)/2] – R2 \]
\[ 7 \times 2 + [2(2+1)/2] – 11 \]

\[ U2 = 6 \]

\[ P> 0.05 \ (U_{crit} (N1 = 7, N2 = 2) = 0) \]

\[ U2 = 6 > U_{crit} 0 \]

Therefore, I must accept the Null, that the number of respondents in flooded areas do not have more attachments that respondents from non flooded areas.
Figure 2. Kruskal Wallis Test

Hypothesis – There is a significantly larger number of responses from Orleans Parish compared to St. Tammany and Jefferson Parishes.

Null Hypothesis – There is not a significantly larger number of responses from Orleans Parish compared to St. Tammany and Jefferson Parishes.

<table>
<thead>
<tr>
<th>Jefferson</th>
<th>Orleans</th>
<th>St. Tammany</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Observation 0, 0, 2, 3, 4, 5, 7, 11
Rank 1.5, 3, 4, 5, 6, 7, 8

R1 = Jefferson = (4+5) = 9
R2 = Orleans = (8 + 3 + 7) = 18
R3 = St. Tammany = (1.5 + 1.5+ 6) = 9

\[ H = \frac{X^2}{8} \left( \frac{81}{2} + \frac{324}{3} + \frac{81}{3} \right) - 3 \times (8 + 1) \]
\[ H = 12/72 \times 40.5 + 108 + 27 - 27 \]
\[ H = 2.25 \]

The critical value is 4.60 with a P> 0.1

The H value is greater than the critical value, therefore, I must accept the Null hypothesis which is: there are no significant differences in the number of responses among the parishes. In fact, there is broad overlap among the three parishes.
Appendix C - Example images of objects of attachment

Statue of Mary
Source: maritimemewmedia.com

Church building
Source: maritimemewmedia.com

Replica of “X”
Source: flikr.com

Boats along Highway 90
Source: Hurricane Digital Memory Bank
Katrina Memorial St. Bernard parish
Source: Nola.com

Waterline repainted on Starbuck's building in New Orleans
Source: Brandie Mitchell
Katrina Memorial
Source: gulf-coast.com

Memorial cabinet with objects left by Katrina
Source: gulf-coast.com
Flag that survived Katrina in a restaurant that flooded
Source: Brandie Mitchell

House that still has the markings on it from Katrina
Source: Brandie Mitchell
Appendix D – Example images of permanent changes to the landscape

House left in the marsh in New Orleans
Source: angelfire.com

Residents leaving New Orleans
Source: google.com
Future Katrina memorial
Source: Nola.com

Upended house in New Orleans
Source: Hurricane Digital Memory Bank
Appendix E – Example images of temporary changes to the landscape

FEMA Disaster Recovery Center
Source: Katrinadestruction.com

Contaminated household items
Source: katrinaDestruction.com
Car on roof
Source: uta.edu

State police in New Orleans
Source: mrzine.monthlyreview.org
Vita

Brandie Mitchell was born in New Orleans, Louisiana. She grew up in a small subdivision surrounded by marsh and swampland. She is passionate about the culture, history and physical environment of New Orleans and pursued her education based on that passion. She received her B.A. in environmental geography from the University of New Orleans in fall 2005 amidst the chaos of Hurricane Katrina.

Experiencing the devastation of Hurricane Katrina first hand allowed Brandie to have an insider’s perspective into the recovery and rebuilding of her home region. As a survivor of Hurricane Katrina, she realized that she had formed attachments to objects that were left on the landscape by Katrina. This led to a curiosity about whether or not other Hurricane Katrina survivors had formed attachments to objects as well. Thus, arose the idea for her thesis topic.

Brandie will be receiving her M.A. in environmental and cultural geography from the University of New Orleans in May 2009. Upon graduation, she hopes to obtain a job with a state or federal agency working with hazard and disaster mitigation as well as environmental issues.