

**“The Sociology of Animals in Disasters:  
Exploring the Human-Animal Relationship in  
Emergency Management and Disaster Planning”**

**Michael Rimoldi**

**U88505516**

**POS 6933**

**Fall, 2011**

## Table of Contents

Introduction.....	3
Significance of Study.....	4
Research Question .....	5
Definitions.....	6
Main Topic.....	9
Literature Review.....	10
Methodology .....	13
Findings.....	15
Conclusion .....	18
Bibliography .....	20

## **Introduction**

In the wake of Hurricane Katrina in 2005, some 6,000 animals were housed and cared for in the Lamar-Dixon Expo Center in Gonzalez, Louisiana; which at the time could be recognized as the largest animal shelter in the nation and possibly the world (Irvine, 2010). Pets were lost, abandoned and died during the storm and post-storm event.

One aspect of emergency management and disaster planning deals with how humans cope with the care and needs of their nonhuman animals before, during and after the event. While historically overlooked and undervalued, the human-nonhuman animal relationship is a critical social condition. Recognizing how this relationship develops and its level of magnitude is crucial to understanding how individuals who own pets will act in the face of danger in an emergency event.

It is the intent of this essay to research the human-nonhuman animal relationship in time of disaster as viewed from a sociological perspective. The goal is to determine the fundamental aspect of the human view towards a pet and how it drives the human decision-making process of humans when they find themselves in an emergency situation. What drives an individual to act a certain way based upon the needs of their animals? Why an individual would risk their own life and not evacuate from potential danger to stay with their animal in the face of imminent danger?

This essay is intended as one of the initial components of a larger research project studying emergency management and disaster planning services as they relate to animals. Future research will incorporate other aspects particular to this field of study with the intent of creating a dissertation work inclusive of all of these components.

This research can draw from the fields of sociology, psychology as well as some aspects from veterinary sciences. The interdisciplinary aspect is crucial to the research as the subject matter crosses the boundaries of several disciplines. In an emergency situation, many different fields of study are represented in the form of agencies and field personnel who are involved in rescue, response and recovery; therefore the study benefits from input of any respective discipline that can contribute information for the work. It is this interdisciplinary aspect that gives the research its measure of significance.

### **Significance of Study: Relation to other research**

The significance of the study can be summed up by the words of Leslie Irvine, sociology professor at the University of Colorado who specializes in the human-nonhuman animal relationship. “The pet situation shows how health, safety, economics, well being, and morality are all connected”, said Irvine during an interview as part of this research (Irvine, 2011).

This quotation exhibits the very nature of the study and the cross-discipline arenas that are involved. Ranging from public health to veterinary science to emergency management to economics; the subject of how humans react to disasters with regards to their animals is critical. Although seemingly “just a pet” to some, the degree of importance of why individuals value their pets is crucial to understanding how they might react in the time of emergency. Many studies have shown that individuals can identify and recognize pets as a member of the family (Edmonds & Cutter, 2008). This is especially true for women who are victims of domestic violence (Albert & Bulcroft, 1988). In turn, many individuals will act towards their pets with that same level of care they exhibit towards their children when making emergency decisions (Heath, et.al, 2001). This must be understood by anyone involved in the aspects of public policy, public health or

emergency planning in order to prepare for meeting the emergency needs of such a strong social connection between humans and their pets. Ignoring this emotional and sociological connection for its true value would surely result in the catastrophic failure that has been shown in previous disaster events where animal lives were lost and human lives were impacted. Incidents ranging from the Three Mile Island nuclear plant accident in 1979 where pets were left to stray, to flooding in Georgia in 1994 where pet owners refused to evacuate without their animals (Federal Emergency Management Agency, 1998) to the infamous Hurricane Katrina in 2005, which was recognized to have the largest impact related to pets due to both the evidence of blatant disregard to the animals as well as the recognition of the strength of the human-animal bond (Schaffer, 2009). All these events represent the importance of the human-nonhuman animal relationship and how it requires attention to insure future emergencies are survived successfully.

### **Research Question**

As part of the fundamental understanding of what is hoped to be learned from this essay, a basic research question must be developed. This question shall lay out the goal of the research and the premise of what is to be discovered. For this component of the research, the question shall be:

**How does the human-nonhuman animal relationship influence how an individual acts in the time of an emergency or disaster?**

Utilizing this question as the basis for the research study, the desired goal of determining the significance of this relationship can be reached. This would be the fundamental first step for any future action taken based upon the discovery of the significance of the relationship. Future action might include the creation of public policy, creation of a respective emergency action plan

and even the way emergency response personnel; the common term “first responders”, are trained and prepared to face this particular situation.

## **Definitions**

Within this question lies verbiage that requires some basic definitions to be set forth to delineate the aspects of the study. First and foremost; the definition of a pet is necessary. As defined by the Federal Emergency Management Agency (FEMA), a pet is defined as:

***Household Pet:** A domesticated animal, such as a dog, cat, bird, rabbit, rodent, or turtle that is traditionally kept in the home for pleasure rather than for commercial purposes, can travel in commercial carriers, and be housed in temporary facilities. Household pets do not include reptiles (except turtles), amphibians, fish, insects/arachnids, farm animals (including horses), and animals kept for racing purposes. (Federal Emergency Management Agency, 2007)*

Within this definition of household pets, includes the aspect of service animals and those companion animals that assist humans with disabilities. The definition of a service animal as defined by FEMA is:

***Service Animal:** Any guide dog, signal dog, or other animal individually trained to provide assistance to an individual with a disability including, but not limited to, guiding individuals with impaired vision, alerting individuals with impaired hearing to intruders or sounds, providing minimal protection or rescue work, pulling a wheelchair, or fetching dropped items (Federal Emergency Management Agency, 2007).*

As a supplemental note, the aspect of domestic farm animals also comes into play. This classification of animals would include pigs, horses, chickens, cattle and any other animals

which might not be considered a pet but would still be recognized as a contributing factor to the way humans react to any given emergency situation. For the purposes of this study, these animals are not discussed as this would lead to a larger area of focus than this initial research study sets out to determine. They are however; still an important measure to be considered in emergency and disaster planning. A larger, more broad-based research study could encompass their role in the human-nonhuman animal relationship and their related impacts on the human decision-making process in an emergency.

With regards to emergency and disaster planning, a fundamental definition of those terms is also necessary to understand the overarching aspect of the research. The terms “emergency” and/or “disaster” are used interchangeably within this study but a basic understanding of what is implied by their usage is required. The definition of emergency will be used as the basic premise for the interchangeable use of the terms “emergency” or “disaster”. Emergency, as defined by the United States Department of Homeland Security in the National Incident Management System 2008:

***Emergency:** Any incident, whether natural or manmade, that requires responsive action to protect life or property. Under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, an emergency means any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement State and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the United State* (Department of Homeland Security, 2008, p. 138).

One other parameter of the study must be defined and that is the geographical parameters of the study. For the purposes of this research, the study area will include areas within the United States. Evidence has shown however that the human-nonhuman animal relationship is not restricted by borders or constrained by geography as Japan recently faced similar issues with animals in an emergency during the tsunami in March, 2011. The dangers and relationships may be identical but one interesting aspect of post-event behavior may differ slightly based on cultural norms. It has been noted that some individuals who have pets who survived the tsunami disaster show respect to other survivors by not having their pets in their presence. This prevents them being offensive of others sadness by exhibiting their own happiness of having their animals survive (Wakabayashi & Bellman, 2011).

If the discovery and answer to the research question presents as a common and established social pattern, than it would seem that proper response to address this social condition would be in order. Historical events have shown that often times when a social condition is established as popular or occurring in a high degree, or even due to perceived danger; that some measure of preparation for that condition is taken by those in authority (Cattafi, 2008).

Having established the research question, necessary definitions and general significance of the study, the main concept of the idea can be established. A general idea of the research will be set forth and then a background of previous research in the field in the form of a literature review can be presented.



## **Main Topic**

The fundamental concept of this research is to determine the degree and level of importance of the human-nonhuman animal relationship and how it can affect the way humans will make decisions in the time of an emergency or disaster event. Historical evidence has shown that human lives can be directly affected and even lost due to the actions taken in response to the needs of their pet. Understanding the human-nonhuman animal relationship allows for the conceptualization of such behavior and explains why someone might put their own life in danger for their animal. This might be seen as reckless or irresponsible but the fact remains it has happened in the past and could happen in future disaster events. Therefore; the sociological understanding of why this occurs needs to be understood so action in the form of the creation of public policy and subsequent emergency first response actions can be performed successfully (Leonard & Scammon, 2007).

In addition, emergency response personnel will recognize benefit from any respective action based on their understanding of the human-nonhuman animal relationship. Those individuals who risk their own lives to provide rescue and emergency services to others in peril need to understand why individuals will act a certain way based on the needs of their animals. If the relationship of pet owners to their animals is known, identified and appreciated for its significance, then these emergency service personnel will be prepared to address the situation accordingly. Evacuees from Hurricane Katrina claim that rescue helicopter and boat pilots refused to allow animals into the emergency vehicles (Irvine, 2006) which compounded the difficulty of the rescue and consumed valuable time at the scene as the situation of the animal was debated by the pet owner and emergency rescue personnel. Examples such as this is the rationale as to why this relationship between humans and animals needs to be understood and

planned for long before a disaster occurs and the first of any emergency response personnel arrives on scene.

To fully understand the significance of the study and the importance of understanding the human-nonhuman animal relationship, one must recognize what other research has gone before and what previous measures have been taken to understand this social condition. Recognizing what sociology, as well as other disciplines have discovered in regards to this phenomenon provides for a means of understanding the importance of the relationship and how this sociological concept can be transformed into a beneficial knowledge base for other disciplines.

## **Literature Review**

In order to understand the modern human-nonhuman animal relationship, a brief review of the history of how humans and animals relate must be presented. The condition of how animals are treated by humans has always been a point of contention. Are animals here solely for human purposes or are they an equal and significant species to humans? That and similar questions have long since been debated and in the late 1960s and early 1970s, this sociological impact of the relationship between humans and animals began to emerge in the public eye.

British psychologist and former Mellon Professor at Tulane University, Richard Ryder first developed the idea of *speciesism* in 1970 (Ryder, 2005). This concept was developed during the time of product testing on animals and other practices which many felt were painful and exploitative of animals. Ryder reasoned that if animals had central nervous systems and other similar physical traits that caused them to feel pain much like humans, why should they be treated any differently than humans. He deemed this *speciesism* and indicated that is a prejudice against non-humans based merely on physical differences that are assigned moral value (Ryder,

1975). Subsequently, some 30 years after Ryder's first usage of the term, Princeton philosopher and animal rights advocate Peter Singer would refine the term to the idea, "Speciesism is, in brief, the idea that it is justifiable to give preference to beings simply on the grounds that they are members of the species *Homo sapiens*" (Singer, 2006, p. 3). Understanding the history of how humans became more aware of the significance of animals as an equitable being allowed for the enhanced appreciation of them as a recognizable companion species. This established their level of social importance to humans and in turn, their recognition by many as a member of the family and even their value as a tool for family therapy (Walsh, 2009).

Animals recognized as members of the family unit are derived from several lines of thought. There is the concept that animals do indeed have a "self" and can be identified as an inherent being (Irvine, 2007). Animals can also be placed in roles of importance based upon their contribution to the family unit (Walsh, 2009). Finally, animals can find a measure of importance to humans based on their value to the mental well-being of humans and can lead to subsequent distress when lost in a disaster (Lowe, et.al., 2009). Though these reasons differ slightly in their inherent aspects, the fact remains that many humans do recognize and appreciate their animals as part of their family and in turn would provide their animals with a high level of consideration during the decision-making process in preparation or reaction to an emergency event.

The sheer numbers of households who own pets can be seen as a viable need in itself to require recognition of the importance of the pet owner relationship to their animals. This number is growing as the apparent popularity of pet ownership increases. In the late 1990s, an estimated 50 percent of households in the United States owned at least one animal as a pet (Federal Emergency Management Agency, 1998). In 2008, this number rose to between 60-70 percent

(Centers for Disease Control, 2008). In some instances, states like Vermont and Idaho claim pet ownership rates of 74.5 and 73 percents respectively (Gilbert, 2009). Clearly, when animals are present in this many households, it creates a situation that must be recognized and addressed accordingly in emergency planning purposes.

One of the primary policy actions discovered during the literature review was the passing of the Pets Evacuation and Transportation Standards Act (PETS) in 2006. Also known as the PETS Act, this legislation mandates that state and local governments must include companion animals and assistance animals in any disaster and response planning in order to receive federal funding from the Federal Emergency Management Agency (FEMA) (Decker, et.al. 2010). This federal relief funding comes by way of the inclusion of the PETS Act into the Robert T. Stafford Disaster Relief and Emergency Assistance Act under Disaster Assistance Policy 9523.19 (Federal Emergency Management Agency, 2007). Essentially, this legislation says that if state and local governments want to be able to receive federal assistance and recovery money in the time of an emergency, they must have addressed the needs of animals and animal owners in their respective jurisdiction. Specifics of the Act and how FEMA addressed the cost structure of reimbursement for local governments can be found on the FEMA web site. ([http://www.fema.gov/government/grant/pa/9523\\_19.shtm](http://www.fema.gov/government/grant/pa/9523_19.shtm)).

The PETS Act was initiated after numerous incidents occurred which made Congress aware of the situation of animals in disaster situations. One was the story of Snowball, a small white dog who was taken from a little boy as he was boarding a bus to leave the Superdome in Louisiana after Hurricane Katrina made landfall. The boy and his dog were separated as animals were not allowed on public transportation vehicles used for evacuations. Rep. Tom Lantos from California commented, “The scene from New Orleans of a 9-year-old little boy crying because

he was not allowed to take his little white dog Snowball was too much to bear. Personally, I know I wouldn't have been able to leave my little white dog Masko to a fate of almost certain death" (Whipple, 2010). The PETS Act was approved by the House by a vote of 349-29 and passed the Senate unanimously.

## **Methodology**

The primary methodology for this research was comprised of document review and interviews with specialists in the field of the human-nonhuman animal relationship. The incorporation of these two directions was intended to provide a well-rounded perspective for the research necessary for this project.

The document review consisted of performing a literature review of previous work in this area. This determined what research had been done with regards to the animal-nonhuman animal relationship in the past as well as the current trends in the field of study. There is a long lineage of study associated with this field dating back to the aforementioned works regarding animal rights and welfare from Richard Ryder in the 1970s. Fast forward to the 2000s and a new set of studies can be identified including those of the work mentioned in the literature review of Leslie Irvine of the University of Colorado and Caroline Schaffer, DVM from the Center for the Study of Human-Animal Interdependent Relationships at Tuskegee University. It was the discovery of these individuals that generated the subsequent interview aspect of the study.

During the research and literature review aspects, the legislation known as the Pets Evacuation and Transportation Standards Act (PETS) was determined to be the primary legislative source which many aspects of the intent of this study were based upon. The PETS Act although being a legislative policy in form, does reflect the fundamental sociological

concepts of this study in attempting to determine the importance of the human-nonhuman animal relationship and applying it to the real world situation. It would seem safe to say that the PETS Act could be viewed as being the recognition of a social condition that has been transformed into a political and legislative policy. This was one of the primary goals in undertaking this study for as mentioned in the introduction, the intent was to determine what actions might be taken to address a social condition which could be seen to transform into a condition of public health and general safety concern.

The aforementioned interview aspect of the study was derived from the discoveries made during the literature review. Informal communications by email were conducted with three different individuals. A fourth individual interview was attempted but his retirement from his previous position left him unreachable. These interviews consisted of Leslie Irvine, sociology professor at the University of Colorado and William Bracken, P.E. from Bracken Engineering in Tampa, Florida. Mr. Bracken is a FEMA Urban Search and Rescue Specialist and Senior Member of Florida Urban Search and Rescue Task Force 3. Finally, Caroline Schaffer, DVM from the Center for the Study of Human-Animal Interdependent Relationships at Tuskegee University was contacted as a follow-up to a presentation paper she had given at the *2009 Integrated Medical, Public Health, Preparedness and Response Training Summit* in Dallas, Texas. Dr. Irvine and Dr. Schaffer provided the insight from the academic perspective while Mr. Bracken revealed insight from the technical and field response view of an emergency first responder.

Each interview was conducted informally via email. The questions and email conversations were essentially based on each individual's previous work or publications. Questions posed to Dr. Irvine were based on some of her publications and field experience in

recovery operations during Hurricane Katrina. The inquiry to Mr. Bracken was developed based on work experience and information he had previously presented regarding his emergency response experience with animals at disaster sites. The open-ended format of these discussions was utilized so as to allow the respondent to share what they felt were the important aspects of the research and not constrain them into just answering a series of structured questions. Based on the results and information gained from each respondent, this interview method seems to have worked out quite well.

## **Findings**

The overall findings relating to the research question were positive that there is indeed a significant causality in the way human pet owners respond in the face of an emergency event. It was learned that for every 1,000 households; there will be approximately 1,500 pets that require some form of attention (Irvine, 2011). In addition, another significant fact discovered was that households with pets are usually twice as likely to *not* evacuate their homes in the time of an emergency (Whitehead, et.al., 2000).

Along with the statistical data facts discovered, several important items were gleaned by way of communicating with the experts in the field. Through the email interviews, it was indicated the importance of the interdisciplinary aspects of the human-nonhuman animal relationship. This fact is important as it is not just a concern for the veterinary field or the public manager's realm but for a variety of disciplines that would be affected during an emergency event. One example that exhibits how this situation can cross into the legal realm is that of former Hillsborough County, Florida prosecutor and now Attorney General of Florida, Pam Bondi. Bondi adopted a dog left orphaned after Hurricane Katrina only to have the owners lay

claim to the dog years later. The dog was eventually returned to the original owners but only after 16 months of debate and contention between the two parties (Nipps, 2010). One can only wonder if better preparation prior to the disaster event may have prevented this and other similar instances of animals being separated from their original owners and then have to face separation from their adoptive owners a short time later.

Another point of importance revealed was the answer to the common argument that “they are just dogs and cats” or “human needs should be met first”. These are some of the common rebuttals presented when the discussion of addressing animal pets during emergency planning or a disaster event is conducted. Dr. Irvine presented a strong argument for this debate referring to the chain of events that can occur when pets are overlooked or ignored as part of any emergency response. “We know that people will risk their lives to save their animals, and will delay evacuation if they cannot take their animals with them. These decisions can threaten the lives of pet owners and put emergency responders at risk when they consequently have to rescue people who did not evacuate. The results are costly in terms of labor, lives, and resources. If a policy were to state, for example, that we would not rescue any animals until every human being was out of danger, it would quickly break down because people will put themselves in danger for animals. They feel emotionally attached and morally responsible”, Irvine stated (Irvine, 2011).

The impact of animals, their owners and emergency response indicated by Dr. Irvine was corroborated by Mr. Bracken. “As a first responder tasked with working in wide-area disaster environments, abandoned household pets pose a very real threat. After a few days the animals are scared, confused and hungry. Another perspective is the cruelty of abandoning household pets. These animals are traumatized and often physically injured by the event. As a first responder tasked with search, rescue and recovery of trapped and/or entombed live victims, we



are not able to focus efforts or extend energies on abandoned or injured animals”, stated Bracken (Bracken, 2011). Considering this fact is vital as a delayed response can lead to a life or death situation from an individual in need after a disaster event. In addition, post-disaster recovery operations can be significantly affected both physically and emotionally when the needs of these animals are not addressed before or during the emergency event. The aforementioned dog, “Snowball” and the separation from his owner is a good example. Even after the event, the emotional impact on an individual as well as the negative image that the situation presented for the emergency responder who kept the dog from boarding the bus are developed. That person was likely just doing their job and following the preset guidelines but the seemingly harsh and unsympathetic fashion is what is held in the memory of people seeing the story unfold. This is far from the image that any recovery operation wants to experience as it tries to help residents recover from the already horrific experience of having to live through a hurricane or other traumatic event.

Within the findings related to this study, the analysis of the PETS Act holds as one of the primary legislative and public policy initiatives that is beneficial to the human-nonhuman animal relationship. The passing of this act has made for the establishment of recognized policy to address the needs of animals and their respective owners in the face of an emergency. While the implementation of the PETS Act is recognized as a crucial step in the welfare of animals and the overall preparation of communities to face an emergency, there are some identifiable weaknesses in the act. While this act is instrumental in establishing a baseline for how state and local governments are to act in the time of an emergency, the act itself appears weak in its own implementation. This is based on two reasons. The first is the act only requires that state and local governments have a written emergency action plan established to face future emergency or

disaster events. The act does not indicate *how* these state and local agencies are to respond nor does it define the degree of response necessary for compliance. Recognizing this fact, it is feared that some entities may just create a written document to meet the federal requirement and take no further action. This relates directly to the second identified weakness.

The second matter of concern related to the PETS Act is the available budgetary funding to respond to the human-nonhuman animal relationship by way of the PETS Act. With the current economic situations, state and local governments are extended far beyond their working capacity in both money and resources. It is therefore expected; and already identified in some municipalities, that actions related to the PETS Act will be overlooked due to lack of the state or local agency's resources or available capital (Decker, et.al., 2010). The implications of the human-nonhuman animal relationship and the importance of policy such as the PETS Act must be recognized by local officials. This recognition is vital for providing for the most efficient benefit for local residents and their pets.

## **Conclusion**

Research has shown that the human-nonhuman animal relationship is indeed an important social connection. People do indeed regard their pets as part of their family. In turn, the decisions individuals make in emergency situations are often based upon the existence of their pets and possibly even made based on what might be in the best interest of the animal even if not always in the best interest of the person. Understanding the social implications of how a person thinks and how they view and consider the welfare of their pet is important to achieving a complete understanding of this relationship.

In addition, this study has shown that the social condition of people owning pets can become a matter of public importance which led to policy action with passing of the Pets Evacuation and Transportation Standards Act. Fundamentally, this piece of legislation takes the social practice of people owning pets and creates legislation from it to insure the safety and welfare of those individuals and their pets in time of an emergency. What once may have been considered just a hobby or the simple pleasure act of owning an animal for recreation has been recognized as an important factor in the human condition. Law has been created to insure the success of a social condition. One might consider this quite an achievement for any given developed society.

This study has shown both the importance of the human-nonhuman animal relationship and as mentioned, the public policy actions that have been taken to address that condition. However; this study is not without some inherent weaknesses. One of the primary weaknesses identified is the limited data set that was used for analysis. The literature review yielded a number of reputable sources and in turn, some of these were made inquiry upon for follow up purposes. Although these interviews were beneficial, the amount of data could have possibly been made larger if the number of interviews were increased.

While the study does have its identifiable points of weakness, the fact remains the sociological aspects of how humans view and care for their pets is an important area to be realized and understood. Individuals across disciplines need to recognize this relationship for the important factors it brings to many areas associated with humans and the way they act in time of emergency. Ranging from medical personnel to first responders to public officials charged with recovery after an event, various disciplines can benefit from understanding the importance of the human-nonhuman animal relationship.

## **Bibliography**

Albert, A., & Bulcroft, K. (1988). Pets, Families and the Life Course. *Journal of Marriage and Family* , 543-552.

Bracken, W. (2011, November 22). FEMA Urban Search and Rescue Specialist and Senior Member of Florida Urban Search and Rescue Task Force 3. (M. Rimoldi, Interviewer)

Cattafi, A. (2008). Breed Specific Legislation: The Gap in Emergency Preparedness Provisions for Household Pets. *Seton Hall Legislative Journal* , 1-18.

Centers for Disease Control. (2008). CDC's Disaster Planning Goal: Protecting Vulnerable Older Adults. Atlanta, GA.

Decker, S. M., Lord, L. K., Walker, W. L., & Wittum, T. E. (2010). Emergency and Disaster Planning at Ohio Animal Shelters. *Journal of Applied Animal Welfare Science* , 66-76.

Department of Homeland Security. (2008, December). National Incident Management System . Washington, D.C.: Federal Emergency Management Agency.

Edmonds, A. S., & Cutter, S. L. (2008). Planning for Pet Evacuations During Disasters. *Journal of Homeland Security and Emergency Management* , 1-18.

Federal Emergency Management Agency. (1998, May). Animals in Disaster. *IS-011 Emergency Management Institute* . Washington, D.C.

Federal Emergency Management Agency. (2007, October 24). *Eligible Costs Related to Pet Evacuations and Sheltering*. Retrieved October 15, 2011, from FEMA: [http://www.fema.gov/government/grant/pa/9523\\_19.shtm](http://www.fema.gov/government/grant/pa/9523_19.shtm)

- Gilbert, M. S. (2009, February). Must Love Cats and Dogs. *Idaho Magazine* , pp. 24-27.
- Heath, S. E., Kass, P. H., Beck, A. M., & Glickman, L. T. (2001). Human and Pet-related Risk Factors for Household Evacuation Failure During a Natural Disaster. *American Journal of Epidemiology* , 659-665.
- Irvine, L. (2010, March). A Thousand Dogs Barking. *Natural Hazards Observer* , pp. 1, 12-15.
- Irvine, L. (2006). Animals in Disasters: Issues for Animal Liberation Activism and Policy. *Animal Liberation Philosophy and Policy Journal* , 1-16.
- Irvine, L. (2009). *Filling the Ark*. Philadelphia: Temple University Press.
- Irvine, L. (2011, November 10). Professor of Sociology. (M. Rimoldi, Interviewer)
- Irvine, L. (2007). The question of animal selves: Implications for sociological knowledge and practice. *Qualitative Sociology Review* , 5-22.
- Leonard, H. A., & Scammon, D. L. (2007). No Pet Left Behind: Accommodating Pets in Emergency Planning. *Journal of Public Policy & Marketing* , 49-53.
- Lowe, S. R., Rhodes, J. E., Zwiebach, L., & Chan, C. S. (2009). The Impact of Pet Loss on the Perceived Social Support and Psychological Distress of Hurricane Survivors. *Journal of Traumatic Stress* , 244-247.
- Nipps, E. (2010, September 4). As Bondi runs for attorney general, bitterness over dog lingers. *The St. Petersburg Times* .
- Ryder, R. (2005, August 5). All things that feel pain deserve human rights. *The Guardian* .

Ryder, R. (1975). *Victims of Science: The Use of Animals in Research*. London: Davis-Poynter.

Schaffer, C. B. (2009). Human-Animal Bond Considerations During Disasters., (pp. 1-8).  
Tuskegee University.

Schaffer, C. (2011, November). Director, Center for the Study of Human-Animal Interdependent Relationships, Tuskegee University. (M. Rimoldi, Interviewer)

Singer, P. (2006). Introduction. In P. Singer (Ed.), *In Defense of Animals The Second Wave* (p. 3). Malden, MA: Blackwell.

Wakabayashi, D., & Bellman, E. (2011, March 16). Two Dogs Defy the Wave. *The Wall Street Journal* , p. Asia news.

Walsh, F. (2009). Human-Animal Bonds II: The Role of Pets in Family Systems and Family Therapy. *Family Process* , 481-499.

Whipple, D. (2010, March). Santa Clara County Builds an Animal Rescue Plan. *Natural Hazards Observer* , p. 13.

Whitehead, J. C., Edwards, B., Willigen, M. V., Maiolo, J. R., Wilson, K., & Smith, K. T. (2000). Heading for higher ground: factors affecting real and hypothetical hurricane evacuation behavior. *Environmental Hazards* , 133-142.