

2015

We Left Lassie Behind: Defense Personnel Relocation, Animal Abandonment, and Shelter Impacts

Gabriele Griffiths
Walden University

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Walden University

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Gabriele Griffiths

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Walden University
2015

Abstract

We Left Lassie Behind: Defense Personnel
Relocation, Animal Abandonment, and Shelter Impacts

by

Gabriele Griffiths

MSSI, National Intelligence University, 1994

BS ED, University of Memphis, 1981

BA, University of Memphis, 1978

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy and Policy Analysis

Walden University

August 2015

Abstract

When Department of Defense (DoD) personnel receive orders to relocate to a new duty installation, nearly one third abandon their companion animals, which negatively affects the local shelters' costs, personnel, and capabilities to provide quality care for shelter animals. There is a lack of research on relevant policies among local government policy makers, installation commanders, directors of animal shelters, and animal rights advocates about the abandonment of companion animals by DoD personnel. The purpose of this qualitative descriptive case study was to investigate the relationship between the influx of abandoned DoD companion animals and the management and logistical (including financial) operations of 2 publicly funded animal shelters near a Midwest DoD installation. The theoretical framework was Merton's theory of unintended consequences. Data were collected through interviews with 2 shelter directors, 10 surveys completed by shelter personnel, and a review of the shelters' logistical and financial documents spanning fiscal years 2013 - 2014. Data were analyzed after coding for themes and patterns. According to study findings, the abandonment of companion animals by DoD personnel has a negative impact on the shelters' finances, shelter personnel workload and stress, and the quality of life for incoming animals as well as those already in the shelters. The implications for positive social change are to inform policy makers of the importance of implementing policies to keep DoD companion animals with families, thereby easing transitions for those at risk, which helps to maintain the financial solvency of animal shelters, reduce stress for shelter personnel, and help companion animals to adjust as they are adopted into new homes.

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Dedication

This dissertation is dedicated to the many emotionally fragile DoD children (some of whom have special needs) who come home from school only to find their beloved companion animal gone. This research is also dedicated to the DoD personnel who leave for deployment to serve their country and return only to find their best friend (pet) was disposed of by their spouses. Finally, this study is dedicated to the DoD companion animals who are ripped out of their homes only to find themselves in a strange, cold, steel, cage unknowingly waiting for their time to be euthanized, drowned, or gassed by shelter men and women who themselves suffer from compassion fatigue.

Acknowledgments

I was fortunate to have a committee chair who guided and supported me through this demanding research. It is with much gratefulness that I thank you Dr. Gema Hernandez for teaching me the way and providing the encouragement to keep going and my committee member, Dr. Shawn Gillen who added a new dimension to the word *thoroughness*.

I was able to put to paper my research findings and results with the assistance of Dr. Anne Fetter, Walden University Research Reviewer, whose understanding of research methodology allowed me to lay the ground work for installation commanders and community staff to formulate DoD policy and public policy that will reduce the number of animals abandoned by DoD personnel. Thank you Dr. Fetter.

To the men and women who work in the animal shelters, it is with much appreciation and respect that I thank you for providing information that brings to light the suffering of all involved. I consider my interaction with you an honor and I could not have completed this research without your trust and cooperation.

To my family and fellow students who kept asking *are we there yet*, thank you for your support and collaboration, stay safe and continue to help each other with the challenges ahead.

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Chapter 1: Introduction to the Study

Overview

When U.S. Department of Defense (DoD) personnel receive relocation instructions to move from their current duty installation to another installation, many abandon their companion animals (pets), which has a significant negative impact on local animal shelters. Companion animal abandonment is a particular problem among those shelters located near DoD installations, where relocation of personnel is frequent and ongoing. Sixty-three percent of all U.S. households, including DoD, own companion animals (Walsh, 2009a), and it has been estimated that 29% of the DoD owners abandon their companion animals during a relocation process (Anderson, 1985). Of the 1.4 million DoD personnel, there are approximately 882,000 companion animals ($63\% \times 1.4$ million), of which over 250,000 are abandoned each year ($29\% \times 882,000$). According to Anderson (1985), the abandonment problem is not only extensive but also results in an expensive outlay for shelters located near DoD installations. The findings from my qualitative study are significant in that I examined, from the perspectives of both animal shelter management and personnel, the key factors in the relationship between the seasonal influx of companion animals abandoned by DoD and the logistical (including financial) operations of two local, publicly funded animal shelters in the Midwest. The findings from this study can be used to address the knowledge gap of how a typical shelter is affected by DoD companion animals left behind.

Based on the DoD Directive 1100.4 (DoDD, 2005), officials formulate assignments to ease personnel shortages, to stabilize needed skills, and to keep an

integrated personnel pool. These goals by transfers are optimized relocating DoD personnel from one installation to another. Although DoD civilian personnel are affected by the DoDD 1100.4 (2005), more uniformed military members are relocated because of the constantly changing DoD mission. Of the 1.4 million active duty DoD personnel and their families, companion animals, and household goods (U.S. Census [USC], 2012), about one third of DoD personnel are relocated annually (U.S. Government Accountability Office [GAO], 2001). Civilian and military families move with their children, companion animals, and household goods, sometimes across the continental United States or to overseas installations, depending on the needs of the DoD. When military families move, there is an increase in animal shelter intake paperwork, the number of animals found as strays during the peak relocation cycle, the number of animals in shelters that once belonged to DoD personnel. Using the qualitative case study method, I examined, from the perspectives of both animal shelter management and personnel, the key factors in the relationship between the influx of companion animals abandoned by DoD personnel (at the time of relocation) and the logistical (including financial) operations of two local animal shelters.

Background of the Problem

Though the intent of the DoD relocation policy is a stated, directed action, it has theoretical unintentional consequences (TUC; Merton, 1936) that, according to Merton (1936), may produce negative results, such as animal abandonment. This was the focus of my qualitative case study research. The abandoned animals impacted the shelter operations logistically and financially, the personnel physically and emotionally, and the

shelter animals by decreasing their quality of life. I focused on the key factors in the relationship between the seasonal influx of companion animals abandoned by DoD personnel and the logistical (including financial) operations of two purposefully selected animal shelters near a DoD installation. Because of the lack of literature on this subject, the new knowledge gained from my findings provides the opportunity for positive social change affecting DoD personnel and their families, local animal shelters, shelter personnel, the abandoned animals, and the shelter animals themselves.

There are more than 800 DoD installations throughout the world (Dufour, 2013), with a varying population of personnel stationed on the bases. The missions of these installations differ and include training, logistics, research and development, and combat readiness. The population of each installation fluctuates according to the mission, but a common characteristic is that all of the installations have personnel—some with families, others without families—that are affected by relocation.

Although companion animals are abandoned by DoD personnel, we did not know was the relationship between the seasonal influx of companion animals caused by the animals left behind and the impact on local shelters. Consistent with the findings of Walsh (2009a), Anderson (1985) found that 66% of military members had companion animals at the time of relocation and that 29% of the animals owned by military personnel were abandoned at the time of transfer. What was unknown, from the perspectives of both animal shelter management and personnel, were the key factors in the relationship between the seasonal influx of companion animals abandoned by DoD

personnel (at the time of relocation) and the logistical (including financial) operations of local animal shelters?

Of my literature review of 118 articles, only Anderson (1985) directly addressed the issue of DoD companion animal abandonment. A search of non-peer-reviewed media articles produced an abundance of related articles written in DoD installation newspapers, U.S. newspapers, and overseas newspapers. The large number of non-academic articles speaking to animal abandonment by DoD personnel suggested that DoD was aware of the issue, but because it had not been studied in a scholarly or scientific manner, no action has yet been taken to address the situation.

Problem Statement

When DoD personnel receive relocation instructions, which can be as early as 4 months in advance to as late as 2 weeks before departure, many of them abandon their companion animals, which has a significant negative impact on local animal shelters. The relocation action is based on DoDD 1100.4 (2005), which allows the rebalancing of personnel as needed. Even though companion animals may live with a single DoD person or a large DoD family for several years and would best be relocated along with their owners, they are often abandoned at the last duty installation. Using the qualitative case study design of two local animal shelters, I investigated the key factors in the relationship between the influx of companion animals abandoned by DoD personnel (at the time of relocation) and the managerial and logistical (including financial) operations of local animal shelters. Popular media is filled with stories of companion animals left behind by DoD personnel, which suggests that the problem is well known and significant, but the

extent of the negative logistical and financial impact upon local shelters and their personnel remained unknown.

Purpose of the Study

In this qualitative case study my purpose was to facilitate a social change that would benefit the community by researching the effects of abandoned companion animals by DoD personnel on the management and logistical (including financial) operations, shelter personnel, the abandoned animals, and animals of the local shelters. My research was based on the advocacy and participatory worldview, which addresses the problem of TUC of animal abandonment and its impact on local shelters and advocates for reform (Creswell, 2009). I did not select the postpositive worldview, because it focuses on deductive theory verification. I also did not select the constructivist theory because it emphasizes understanding experiences (Rudestam & Newton, 2007). By basing my research on the advocacy and participatory worldview using the qualitative case study method, I investigated how the seasonal influx of companion animals from DoD personnel into shelters affects all aspects of shelter operations.

Nature of the Study

The qualitative case descriptive study included data collected from semistructured interviews with both shelter management ($n = 2$), a semiquantitative (fill-in-the-blank and multiple choice) personnel survey ($n = 10$), and shelter document reviews ($n = 2$ shelters). I conducted semistructured interviews with shelter managers and focused on animal intake rates, including pickup rates and costs to process and hold the animals at a shelter. The emphasis was on intake rates as they were correlated to the peak DoD

relocation seasons (Samuelson, 2014), May-August of each year, covering a retrospective time span of 2 fiscal years (2013-2014, for a total of 24 months of data). I also included relocations that were the result of a mass DoD unit movement in the data collection schematic.

Research Question

1. From the perspectives of both animal shelter management and personnel, what are the key factors in the relationship between the influx of companion animals abandoned by DoD personnel (per month, at the time of relocation) and the logistical (including financial) operations of a local animal shelter (as measured in U.S. dollars per month)?

Theoretical Framework

The theory used to provide an understanding of why DoD personnel abandon their companion animals when they relocate was Merton's (1936) concept of TUC. Merton (1936) maintained that directed actions may have unanticipated consequences that are generally negative. In this qualitative study, my goal was to explore the negative impact of animal abandonment and after publication, bring it to the attention of local civilian leaders, DoD installation managers, and DoD policy makers. Once DoD managers and policy makers are made fully aware of the consequences of the DoD's relocation policy and the resulting abandonment of companion animals, leaders who are in position to influence policy actions may take steps leading to purposeful social action. Such action may range from creating policy that will keep the DoD personnel family (including companion animals) intact, reducing the abandonment rate, and possibly reimbursing

local shelters for expenses incurred by the shelters as a result of DoD personnel leaving their companion animals behind.

Merton (1936) clarified that the TUC of the purposive action would not occur if the action had not been taken. In terms of my research, the companion animals would not be abandoned if the DoD personnel were not ordered to relocate with no provisions made to keep the companion animals and their families intact. Merton explained the players in TUC and the various motives that players have in choosing between actions. Merton furthered differentiated between the consequences to the doer (DoD personnel) and to other entities (the animal shelter, the animal shelter personnel, the abandoned animals, and the animals already in the shelter) that are affected through the social structure, the culture, or the civilization. In this case, although unintended consequences may have resulted from policy action, the abandonment action was the result of the conduct of the first population, the DoD personnel, the human mechanism (Merton, 1936). The DoD personnel, as the human mechanism, were determined to be the initiators or doers whose actions led to TUC: the additional impact of the abandoned companion animals on the shelter's logistical (including financial) operations and management, the shelter personnel, the abandoned animals themselves, and those animals already in residence in the shelters. Merton claimed that some action is habitual, and that when a certain action happens, a person will, out of habit, react in a certain manner. Whether DoD personnel abandon their companion animals out of habit or the abandonment is a onetime occurrence was beyond the scope of this research.

In this qualitative case descriptive study, using the participatory and advocacy framework, my goal was to fill the knowledge gap on this issue and create the opportunity for social change. My anonymized research data and findings are fully available in electronic format to advocacy groups and DoD policy makers, who in turn may have the opportunity to take actions that address the abandonment of companion animals by DoD personnel.

Definition of Terms

The following are a list of terms with operational definitions that are unique to the DoD, the world of companion animal management, and the research. Several terms may be unfamiliar to the reader of this research and are listed for clarification. Terms were explained to operationally define how they were used in the research.

Abandoned animals: Companion animals (or pets) relinquished by DoD personnel to shelters as well as animals dumped in the local community in such areas as empty housing units or complexes, city parks, or on rural roads.

Animal shelter: Any entity located near a DoD installation that provides shelter or rescue to companion animals. There was no distinction made as to whether the entity was privately funded or publically funded.

Department of Defense (DoD) personnel: This collective term is used to describe individuals who are employed by the DoD. This population includes active duty members, civilian personnel, and individuals employed by the DoD through a contract. Members of this population may have lived on the DoD installation or in the local community in the United States or internationally.

Euthanasia: This occurs when a companion animal is killed through the use of sodium barbiturate, in a gas chamber (Zanowski, 2010), by drowning (Alper, 2008). The directed euthanasia of companion animals by owners through private veterinarians was not included.

Installation: This is a place where DoD personnel are employed. The personnel may live on the installation that provides housing for them and their families. Schools for their children may also be located on the installation.

Relocation: Commonly used term to describe the action of personnel leaving one DoD installation and moving to another. The cost of relocation includes the physical movement of family members, household goods, and automobiles but not the cost to take the companion pet to the new location. Relocation may be made to DoD stateside locations or DoD locations in foreign countries. Relocation may also mean that the person is being deployed.

Assumptions, Limitations, and Scope

My first assumption was that once the unintended consequences of animal abandonment by DoD personnel are known by leaders and policy makers in positions to influence policy actions, those leaders will take actions to bring about positive social change in terms of reducing the animal abandonment rate and minimizing any possible negative effects of animal abandonment on shelters near DoD installation. My second assumption was that once community leaders are aware of the financial impact on local shelters when animals are abandoned by relocating DoD personnel, the leaders will ask that those shelters be reimbursed for expenses that they incur as a result of taking in the

additional animals, caring for them, rehoming them, and/or euthanizing them. My third assumption was that individuals involved in companion animal management and logistical (including financial) operations of the animal shelters under study would share their views and experiences truthfully, willingly, and without the fear of retribution.

Several limitations of my research could contribute to possible weaknesses in the results. Shelter personnel could have attempted to influence the data analysis by making it look as if animal abandonment by DoD personnel had either more or less of an impact on operations at the shelter. In my study, the participants were straight forward and provided valuable data. My personal bias as an animal rescue transporter could have been a limitation, but I attempted to keep it to a minimum and out of the research by seeking continual feedback from the dissertation committee and through bracketing (distancing self). The qualitative nature of my research prevented the generalization or narrowing of data because of wide-ranging answers provided by individuals who were given the opportunity to state their subjective views (Creswell, 2009). The inductive nature of the study provided both suggestions for future research and/or new theories to build on Merton's (1936) TUC.

The scope of my research focused on the relationship between the influx of companion animals abandoned by DoD personnel and the management and logistical (including financial) operations of two animal shelters near a DoD installation. The qualitative research design included interviews with the selected animal shelter management and personnel, open-ended question surveys provided to shelter personnel, and document reviews from the shelter files in a retrospective period from 2013 - 2014.

Significance of the Study

Using the qualitative case study research method, I was able to fill an existing knowledge gap in the field of public administration and public policy about the impact of companion animal abandonment by DoD personnel on local animal shelters. At the same time, the new knowledge contributes to advancing research, practice, and policy. Because a clear picture of the impact of animal abandonment by DoD personnel on local shelters now exists, my research findings will be of significant interest to local governments, DoD policy makers, DoD installation commanders, directors of animal shelters, and animal rights advocates. The results of my research can inform stakeholders of the actual impacts that are TUC of the abandonment actions. Based on the results of my research, DoD policy makers can now reassess the impacts and create innovative programs that will lessen the number of animals abandoned (and euthanized) and lead to positive social change. In addition, new policies may lead to more companion animals and their DoD personnel families remaining intact. The stakeholders, all within the public administration domain, are in the best position not only to make positive changes in public policy, but also to justify reimbursement costs. Using the findings from my research, I will provide information that can be communicated between the DoD stakeholders and community stakeholders, allowing for the development of better ways to assist DoD companion animal owners in relocating without having to leave their companion animals behind.

Summary

Nearly one-third of relocating DoD personnel abandon their companion animals, negatively affecting local animal shelters (Anderson, 1985). Of particular interest,

however, was how animal abandonment by DoD personnel at the time of deployment affected the local shelters in other ways. Research in this area to date was scant to nonexistent. Through my descriptive qualitative case study, I explored and investigated (from the perspectives of both animal shelter management and personnel) the key factors in the relationship between the influx of companion animals abandoned by DoD personnel and a shelter's logistical (including financial) operations, including the effects on its personnel and on the quality of life of abandoned animals, and the shelter animals.

In Chapter 1, I provided a summary of the study background, the problem statement, and the rationale for the research. I also presented an overview of the research, including the research question, along with assumptions, limitations, and the significance of the study. In Chapter 2, I present a review of literature and list various search methods used to locate scholarly peer-reviewed articles and journals on the research topic. Although my literature review was exhaustive, I uncovered only a few related articles that had direct bearing on the research topic of companion animal abandonment by DoD personnel. In Chapter 3, I argue for the case study research methodology along with the rationale for the qualitative case study design and an overview of the research methodology. In Chapter 3, I also list the criteria that I used to purposefully select the two sample shelters, my sampling approach, my role in the research, and how I protected the confidentiality of the participant shelters' management and personnel. In Chapter 4, I present the collected data and the analyses. In Chapter 5, I interpret the findings and present ideas for future research and the implications for positive social change.

Chapter 2: Literature Review

Introduction

In Chapter 1, I presented an overview of the purpose, importance, and theoretical structure of my research on the negative impact of companion animal abandonment by DoD personnel on shelters located near a DoD installation. In Chapter 2, I build on Chapter 1 by presenting my review of the existing literature. After reviewing 118 peer-reviewed articles and journals, I concluded that the topic, while important, had not been extensively and scholarly researched, which supported the necessity of my research. In my general research on sites containing peer-reviewed articles, I found an absence of writing that was directly related to the actual relationship between animal abandonment by DoD personnel and the negative impact on management and logistical (including financial) operations of animal shelters.

In the findings from the peer-reviewed journals, researchers supported the need for further research on this issue. I could not find prior exploration by scholars on the negative effects of animal abandonment by DoD personnel on local shelters. I found scholarly articles on the action of why a particular companion animal may have been abandoned, but not on the impact of animal abandonment on shelters. This gap in the peer-reviewed literature ensured that my study would not duplicate other researchers who have already examined this topic and made this research unique and valuable in that it added to the nomothetical network. By conducting scientifically based research that addressed the stated research question I produced new knowledge and created the opportunity for positive social change.

Search Strategy

The strategy I used to examine existing literature included searches of academic online sources containing peer-reviewed, full-length articles directly addressing the impact the abandonment or surrender of companion animals by DoD personnel on the animal shelter operations of local shelters. The review of literature was based on extensive searches of academic databases, such as Bing, Google Scholar, PsycINFO, ProQuest, and Sage Publications, all of which had the potential to contain pertinent and topic-related, scientifically based, peer-reviewed scholarly articles (Tables 1, 2, and 3). The search terms, incorporating various Boolean combinations, for the literature review included *shelter operations, shelter employees, rescue operations, animal euthanasia, animal abandonment, companion animals, dogs, cats, Department of Defense, military reservation, military installation, military base, Army, Air Force, Navy, Marine, military animals, military pets, military families, military relocation, moving, and permanent change of station.*

I also conducted searches on websites such as Bing (Table 1) that permitted specialized in animal-related topics, including the Society and Animals Forum and the Veterinary Social Network. Both sites are devoted to the international distribution of social science research, and both published several articles that were indirectly related to my research topic. The strength of peer-reviewed sites is that they present high quality research methodology articles on how companion animals are perceived by humans, how they are treated, and how they should be treated under the law (White, 2009).

Table 1

Literature Review Search Results for Bing

Search Engines	Websites	Articles Read	Journals Reviewed	Results
Bing	Society and Animals Forum	6	<i>Journal of Applied Animal Welfare Science</i>	Indirect relevance: Euthanasia, abused animals, companion animals in families
Bing	Society and Animals Forum	2	<i>Journal of Human-Animal Studies</i>	Indirect relevance: Human-animal relations, animals in human-human relations
Bing	Veterinary Social Network	1	<i>DVM News Magazine</i>	Indirect relevance: Feral populations

The contributions of high quality journals can be useful to researchers looking at relationships between humans and animals. But the knowledge gap concerned the following: When DoD personnel abandon their companion animals when they relocate, what is the impact on the management and logistical (including financial) operations of a local animal shelter?

My literature review search included U.S. government sites, including the GAO, with the purpose of finding literature on the impact of abandoned DoD companion animals on the animal shelters of outlying communities. I combed the Congressional Research Services website.. I also explored the website of the Rand Corporation, whose mission is to advance policy and evaluation strategies through investigation and exploration, and my objective was to find any government-directed reports pertaining to DoD relocation activities. In addition, I searched through Walden University's military and government collection for peer-reviewed articles and official government reports on the research topic. Using Boolean search logic, I used ProQuest to look for academic sites (Table 2) that had published relevant literature.

Table 2
Literature Review Search Results for ProQuest and Relevant Academic Sites

Search Engines	Websites	Articles Read	Journals Reviewed	Results
Sage	Sage Journals	2	<i>Armed Forces and Society Journal</i>	Indirect relevance: Military family life
Sage	Sage Journals	1	<i>Anthrozoos</i>	Direct relevance: Why animals are abandoned
Sage	Sage Journals	3	<i>Journal of Applied Animal Welfare Science</i>	Direct relevance: The impact of abandonment on animals
Tufts University	Cummings School of Veterinary Medicine	1	<i>Tufts Veterinary Medicine</i>	Indirect relevance: Health of animals in shelters
Walden University	Academic Search Complete	9	<i>Case Western Reserve Journal of International Law</i>	Indirect relevance: Human-animal bonds at Walter Reed Hospital, temp homes for companion animals of deploying soldiers,
Walden University	Academic Search Complete	1	<i>Prevention</i>	Indirect relevance: Temporary companion animal homes for deployed soldiers
Walden University	Agricola	1	<i>Feline Practice</i>	Indirect relevance: Guilt management of companion animal euthanasia,
Walden University	Agricola	1	<i>Journal of American Veterinary Medical Association</i>	Indirect relevance: Companion animal grief
Walden University	Expanded Academic ASAP	0		No articles found
Walden University	Lexis/Nexis Academic (The News Sections)	4		Direct relevance: Public media, not peer-reviewed
Walden University	Military and Government Collection	10		Indirect relevance: Companion animal care, and commitment, adoption of companion animals of deployed soldiers
Walden University	ProQuest New Platform	2	<i>Armed Forces Journal</i>	Indirect relevance: Killing of soldiers' companion animals in Iraq
Walden University	ProQuest Central	1	<i>International Journal of Liability and Scientific Enquiry</i>	Direct Relevance: Euthanasia impact on shelter personnel
Walden University	PsycINFO	1	<i>Clinical Child Family Psychology Review</i>	Indirect relevance: DoD families, risk to families
Walden University	PsycINFO	1	<i>Family Relations</i>	Indirect relevance: DoD families
Walden University	PsycINFO	1	<i>Journal of Community Psychology</i>	Indirect relevance: DoD families in communities
Walden University	PsycINFO	1	<i>Military Medicine</i>	Indirect relevance: Family abuse
Walden University	PsycINFO	1	<i>Military Psychology</i>	Indirect relevance: DoD families
Walden University	Vanderbilt University	1	All published papers	Indirect relevance: Economics of owning a companion animal
Walden University	Web of Knowledge	1	<i>Conservation Biology</i>	Indirect relevance: Trap-Neuter-Return in Hawaii

The search allowed me to examine dissertations published by Walden University students and dissertations submitted by doctoral students worldwide. These works addressed numerous related topics, including companion animal interactions, family violence, and the healing role of companion animals in posttraumatic stress disorder (PTSD) cases, but research addressing abandoned companion animals and the ensuing impacts on animal shelter operations was absent. The Sage search engine yielded journals that contained articles covering a vast number of research topics ranging from stresses on DoD families (Anderson, 1985; Morton, 2005; Palmer, 2008) to the role companion animals play in human-human relationships (Esteves & Stokes, 2008; Hankin, 2008; Walsh, 2009a, 2009b; White, 2009). Two journals that included articles on why animals are abandoned are *Anthrozoos: A Multidisciplinary Journal of Interactions of People and Animals* and the *Journal of Applied Animal Welfare Science*. I found that literature on the impact of animal abandonment by DoD personnel on the management and logistical (including financial) operations of local shelters was missing.

Using a wider-ranging strategy, I accessed Google Scholar (Table 3) in my search because it contained not only peer-reviewed articles but also books, abstracts, and court opinions from academic originators, qualified societies, and online sources. Because Google Scholar is vast, my query terms had to be carefully selected so that the results were narrow enough for analysis. A vast database search that was not narrow enough, for example, using the phrase *abandoned pets in community shelters* yielded hundreds of articles.

Table 3

Literature Review Search Results for Google Scholar

Search Engines	Websites	Articles Read	Journals Reviewed	Results
Google	Defense Technical Information Center	3	DoD instructions	Direct relevance: Instructions to relocate
Google	Foundation for Interdisciplinary Research and Education Promoting Animal Welfare	8	All published reports	Indirect relevance: Effects of rental property contracts, spay or neuter effectiveness, companion animals in violent homes, abused companion animals
Google		1	<i>2012 Military Family Lifestyle Survey Report</i>	Indirect relevance: Focuses on the initiatives to better DoD families
Google	Government Accountability Office	5	All published reports	Indirect relevance: Costs of relocation of DoD personnel on the taxpayer, spousal employment, temporary lodging facilities, wildlife management
Google	Google Scholar	11	Books, abstracts and court opinions	Indirect relevance: Shelter operations, DoD family adjustment, companion animal attachment during transfer, human-animal bonds, DoD lifestyle
Google	Google Scholar	19	DoD installation newspapers and <i>Stars and Stripes Survey Report</i>	Direct relevance: Public media, not peer-reviewed.
Google	National Military Family Association	1	<i>Survey Report</i>	Indirect relevance: Relocation programs
Google	Social Science Research Network	7	<i>Anthrozoos</i>	Indirect relevance: How communities want to create social change for companions
Google	Social Science Research Network	1	<i>Child Welfare</i>	Indirect relevance: children and companion animal bonds
Google	Social Science Research Network	1	<i>Connecticut Law Review</i>	Indirect relevance: Legislation and companion animal control authorities
Google	Social Science Research Network	2	<i>Fordham Urban Law Journal</i>	Indirect relevance: Euthanasia
Google	Social Science Research Network	1	<i>Mississippi College Law Review</i>	Indirect relevance: Status of companion animals
Google	Social Science Research Network	1	<i>Stanford Journal of Animal Law and Policy</i>	Indirect Relevance: Companion animal legal status
Google	University of Arizona	1	<i>Military Psychology</i>	Indirect relevance: Stresses on the DoD family

The phrase *abandoned military pets during relocation* narrowed the search, but the articles pertained to evacuating animals during emergencies and the characteristics of both the individuals who abandon animals and characteristics of the animals themselves. Most of the 118 articles I found in my literature review, depending on the stated goals of the originating journal, were written by scientists or animal advocacy groups in the framework of sociology or psychology and covered human-animal relationships, family relations, animal abuse, animal rights, and animal laws. Still using Google Scholar, I entered *companion animal shelter operations* which narrowed the results, but the actual content of the findings was wide ranging and included the effect of animal sterilization programs, tick control, fines for animal abuse, and animal evacuations during disasters. Changing the search term to *abandoned pets impact shelter operations* produced articles on families moving and the impact of the housing foreclosure crisis on the abandonment of companion animals. Goselin, Letson, McGuinness, and Walters (2011) qualitatively examined the relationship between an influx of abandoned animals and the possible use of euthanasia to make room for more animals. Goselin et al. found that the manner in which a shelter is run is dependent upon the funding it receives from private sources or the local government. The stress that shelter personnel suffer when animals are euthanized can also negatively affect the operational costs of shelter operations because of resulting personnel attrition (Rogelberg et al., 2007a). Using a cross-sectional study Rogelberg et al. (2007a) found that personnel turnover rates correlated positively with shelter euthanasia rates: this research left a knowledge gap by failing to address the monetary costs to the shelter budget that were created by personnel attrition. What is not

known are (a) how many personnel leave a shelter, (b) the possible medical costs of shelter personnel who require psychological assistance, and (c) the costs of training new personnel to fill the vacated spaces because of the influx of the abandoned animals.

The Google Scholar searches yielded several books, such as *Animal Control Management* (Aronson, 2010), which was a how-to book and did not specifically address the impact of animal abandonment on shelter operations or shelter costs. I used Aronson's how-to information to set up the collection plan which allowed me to establish the knowledge needed to analyze the actual impact of animal abandonment by DoD personnel on shelter operations.

I found numerous articles reviewing the website USA.gov after the term *military abandoned animals* was entered in the query field. Many of the articles, although not peer-reviewed, were written by local community officials or installation commanders. Based on the number of articles I found suggest that installation commanders and animal advocacy groups such as Society for the Prevention of Cruelty to Animals (SPCA) are aware of the issue (Virginia Beach SPCA, 2010). Based on the number of news media articles I found, it was clear that the problem was known; however, academia had not yet explored the impact of the animal abandonment on local shelters.

My search of DoD community public affairs sites yielded many short articles in newspapers published across the United States, as well as in Germany and Japan that dramatize animal abandonment. Some of the anecdotal articles started by reciting cases of dogs being left tied to a fence or mailbox along with a food bowl nearby (Millham, 2006) or describing instances of animals being pushed out of cars (Flack, 2009). Articles

generally closed with a statement informing the reader that the abandoned animal is now in the custody of an animal shelter. What was not covered was the negative impact of animal abandonment by DoD personnel on shelters and what it costs the shelters to take care of the animals, starting with when they are picked up and continuing to the time they were either adopted out or euthanized. The fact that so much newsprint was devoted to the issue of animals being left behind by DoD personnel indicated that there was a need for scholarly research on how animal abandonment affected local community shelters. The qualitative research I conducted surpassed the information provided by the news media and examined the key and scientifically based factors in the relationship between the influx of companion animals abandoned by DoD personnel (at the time of relocation) and the logistical (including financial) operations of local animal shelters.

Based on the absence of literature on the research subject I could not compare and contrast different perspectives on TUC of animal abandonment and the associated negative impact on local shelters as a result of the relocation of DoD personnel. Because of the complete lack of scholarly literature, a relationship between my study's findings and earlier relevant studies could not be established. With the nonexistence of peer-reviewed literature but the presence of many articles about companion animal abandonment in the news media and in DoD post newsletters, a precedent was set that provided the rationale to conduct this case study research. In the following section I describe articles I found that provided information relevant to the research problem.

Indirectly Related Articles

Characteristics of Owners That Abandon Their Animals

Although I found no existing research that specifically addressed, from the perspectives of both animal shelter management and personnel, the key factors in the relationship between the influx of companion animals abandoned by DoD personnel (at the time of relocation) and the logistical (including financial) operations of a local animal shelter, my review of literature does provide a picture of the typical person who abandons animals. Anderson (1985) provided a good basis for information on how DoD owners view the status of their companion animals at the time of relocation. A review of Anderson's work added a social background for my own study. Anderson's research, carried out in 1985, with data listing 66% companion animal ownership among DoD personnel was revalidated by Walsh (2009a) who listed companion animal ownership in the general population at 63%. Anderson's quantitative work provided statistics to researchers on the characteristics of the owners of companion animals. Anderson used three stratified random samples of military families from the Aliamanu DoD Reservation, Hawaii and personally interviewed 184 families on the status of their pets during transfer time. The types of questions established how families acquired their companion animals, who left their pets behind, and who did not have a companion animal at the time of transfer. He noted the military rank of the individuals who owned companion animals and the rank of those who abandoned their animals at the time of relocation. Anderson concluded that the owner's rank did not influence the status of the animal within the family but did play a role when it was time to relocate to another installation. The lower

the rank of the companion animal owner, the more likely it was that the pet was abandoned and the impact and cost of that decision passed on to a local animal shelter near the DoD installation. What Anderson did not address is how the abandonment of DoD companion animals affected the operations of the shelter.

Anderson (1985) outlined the characteristics of military personnel who abandoned their animals, but White (2009) explored the *mind-set* of people who discarded their animal companions. White's qualitative study was based on data gathered in Australia and addressed a person's decision to abandon a companion animal in the context of whether the animal is seen as property or as a member of the family. White used open and closed ended questions to determine the status of the animal within the family. If the animal was seen as property, it was disposed of when circumstances, such as a perceived lack of housing options, demanded abandonment. However, White found that 88% of respondents said they considered their companion animals to be family members. White established that over time, from the mid 1950s to the present, dogs that once would have been kept outside or on the porch are now allowed in the house. White related that companion animals are allowed in private household rooms, such as bedrooms; allowed to lie on furniture; and are included in social rituals such as birthdays and holidays. At the same time, shelters in Australia admitted large numbers of animals that were turned in by their owners and subsequently euthanized. According to White, the killing of the animals occurs practically unseen by members of our society, with the personnel of the animal shelters carrying both the physical and psychological weight of killing perfectly healthy and once-loved companion animals. This demonstrated that my research in which I

examined animal abandonment by DoD personnel had to be conducted in order to bring to light the true impact of animal abandonment on local shelters associated with DoD installations. The research created new knowledge that presents the opportunity for positive social change.

In my review of the literature I found that there are additional wide-ranging impacts that, although not a focus of my research, could be indirectly affected by the new knowledge of my research findings. Wrobel and Dye (2003) found that more than 85% of people described having grief symptoms when a companion animal died, and one-third of these people continued to feel sad 6 months after losing the pet, the circumstances of which may include abandonment. Walsh (2009b) asserted that the companion animals of clients and the use of animal-assisted therapy can help traumatized DoD personnel, their children, couples, and families who are going through the healing process in treatment. Animals in family relations are valuable resources that can be added to the curative work therapists conduct and used as part of the therapists' clinical assessments (Walsh, 2009a).

As I mentioned above, 88% of families consider companion animals to be family members. In that context, White (2009) asked three important questions: (a) why do family companion animals end up in shelters? (b) why are companion animals relinquished to shelters? and (c) why are family companion animals euthanized? White viewed the process of relinquishment as a transfer of property, the companion animals moving either from one owner to another owner or to the animal shelter. Knight and Barnett (2008) found that individuals who had experiences with animals and who had time to form bonds with the animals may have seen animal actions during that time that

indicated mental awareness of conditions such as feeling pain. People who relinquished or abandoned companion animals, as discussed by White, and New et al. (1999), tended to be young and move often, suggesting they lacked sufficient bonding time.

Based on Merton's (1936) concept of TUC, the DoD policy that leads to frequent moving (Anderson, 1985) may not allow the human-animal bond to fully develop, making it easier for animal owners to abandon companion animals before relocation to another installation. Knight and Barnett's (2008) research was important because understanding how an animal owner sees his or her companion animal may explain why some companion animals are left behind, thus adding new animals to the population of animals already in shelters and increasing the financial burden on the local community which supports the shelter.

Characteristics of Abandoned Animals

Although my research question focused on the key factors in the relationship between the animals abandoned and the management and logistical (including financial) operations of local animal shelters, the literature review identified certain characteristics of abandoned animals. New et al. (2000) conducted research in the United States using 2,631 dogs and 2,374 cats by interviewing relinquishers of those animals at 12 shelters. Using the quantitative method, New et al. employed a standardized questionnaire which asked the sex, age, breed, reproductive status, duration of ownership, and cost of the animals: researchers were able to determine the distinctiveness of shelter-relinquished animals. The information is relevant because it sheds light on why some animals are left behind, creating a burden on local shelters, and why others are kept by families during

stressful times. New et al. found that relinquished companion animals were younger, mixed breed, and intact, while the relinquishers were more likely to be male and under 35 years. New et al.'s findings that surgically altered animals were less likely to be abandoned or surrendered suggests that the cost to sterilize reflected owner attachment and was a protective measure against abandonment. The first striking similarity between the findings of Diesel, Brodbelt, and Pfeiffer (2010) and New et al. (1999) is a common factor of maturity of the dogs. Diesel et al. found that the ages of the relinquished or abandoned dogs averaged less than 6 months, whereas New et al. found the ages of relinquished dogs to be less than 2 years. New et al. established that the longer the animal stayed with the family, the less likely the animal was to be relinquished to a shelter or abandoned. The increase in the length of time a cat spent with a family, however, did not provide protection from relinquishment. Anderson (1985) did not include the ages of dogs in the study but found that military personnel move every 3 years, forcing the decision to keep or get rid of the family companion animal. Anderson's findings also suggested that bonding time played a role in whether a companion animal was relinquished or abandoned by its DoD owner. The formation of bonds may be more important than the ages of the animals in determining how animals are treated, and Diesel et al.'s findings supported that idea by noting that some animals that end up in shelters are less than 6 months old, suggesting that not enough time has passed for a strong bond to form between the owners and the companion animals. The issue of how time affects the DoD companion animal owners and animal abandonment would be a topic for further quantitative, qualitative, or mixed methods research which could explain the nature of the

relationship between the strength of the attachment with the DoD family and the propensity to relocate with or abandon the animal.

Another interesting characteristic involving animals that are abandoned or relinquished is how the family acquired their companion animal in the first place. New et al. (2000) stated that dogs and cats obtained from a shelter, pet shop, breeder, or friend were more likely to be left behind, whereas dogs given as gifts had a decreased risk of being abandoned by the family. New et al. found that dogs were left behind if they cost no more than \$100, whereas a price tag was not connected with the abandonment of feline companion animals.

Satz (2009) presented a new paradigm based on the premise that there should be legal regulations of the way humans interact with domestic animals. Satz conducted a review of existing literature found that animal welfare laws fail to protect domestic animals sufficiently. Satz found that abandoned animals are considered to be members of a disadvantaged group that have no constitutional rights or legal protection to their claims to food, hydration, shelter, and bodily integrity (such as keeping safe from pain and suffering). Satz identified that animals are defenseless subjects within our society. When animals are abandoned, such as those abandoned by 29% of DoD relocating companion animal owners (Anderson, 1985), the animals may suffer and can be deprived of basic needs since their protections have been undermined. Satz's work is important because it brings into focus how animals might suffer once they are abandoned by DoD personnel. Satz made a powerful statement reflecting our contradictions of how we see animals: "We coddle them, eat them, we leave our wealth to them, we experiment on them, we

buy them designer collars and clothes, we wear them, risk our lives for them, we abandon them, and we euthanize them” (2009, p. 3). Satz found that animals have a legal defense only when their benefits are parallel with human interests. Although we can change the laws that protect animals, Satz opened a discussion of the moral obligations owners have to animals that are along the same lines as White (2009) who studied the moral stress of shelter personnel who believe they are protecting animals left in their care but instead end up having to euthanize healthy, vibrant animals.

Euthanasia’s Impact on Animals and Shelter Personnel

During the process of carrying out my literature review I produced articles that explored the effect of euthanasia on the personnel who carry out the actual killing perfectly healthy animals. I did not find articles that discussed the monetary aspect of euthanasia as it affected shelter personnel who are forced to euthanize companion animals abandoned by DoD personnel. Hamilton (2010) did a qualitative case study and examined the actions that were employed to bring about social change in Hillsborough County, Florida. Hamilton used euthanization costs and measured progress in Hillsborough County, Florida because the shelter had cost, statistical, and population data. Hamilton reviewed the impact of the animals on the funding resources of the shelter and the type of animals and the numbers of animals that were coming into the shelter. Using baseline data from the Hillsborough County Animal Services (HCAS), Hamilton determined that any companion animal must be killed for one or more various reasons, including overpopulation, lack of shelter space, or lack of funding. Hamilton found that companion animals were most commonly euthanized after a predetermined time period

had passed in the animal shelter. The time allowed for the animal to be adopted could be as little as 3 days or as long as several months, depending on how much space was available in the shelter. Hamilton laid out the lessons learned from coalitions and how field work can bring about social change which in the case of HCAS was a drop in the euthanization numbers which directly also affected the tax money spent on euthanizing companion animals.

Euthanasia can be an emotional subject, as explored by Alper (2008) in a descriptive article which approached the topic of euthanization from the technical aspect, omitting the emotional aspect of killing perfectly healthy but unwanted companion animals. Alper performed a comparison analysis between the manner in which humans are put to death on death row and the method in which animals are euthanized. Alper examined in depth why veterinarians do not use paralyzing drugs, discussed standards of professional conduct, reviewed the state laws affecting animal euthanasia, and provided a legislative history of animal euthanization laws. Most abandoned companion animals are killed using an overdose of sodium pentobarbital, although some are killed by either gassing (Zanowski, 2010) or drowning (Alper, 2008). Based on a review of literature, Alper concluded that the Humane Society established that the most humane and compassionate way of killing a companion animal is through euthanization, an overdose of sodium pentobarbital.

Zanowski (2010) explored the mass murder of abandoned companion animals that occurs in community animal shelters. Zanowski reviewed literature that addressed the impact of euthanization upon the shelter workers, veterinarians, and shelter animals, and

why we should care about the fates of these forgotten companion animals. Zanowski determined that of companion animals entering shelters, 42% are picked up by animal shelter workers, 27% are brought to shelters by their owners, and another 31% come from undetermined sources. Zanowski put the killing percentage at 64% of all animals who arrive at shelters. Zanowski also stated that the average age of a dog at the time of euthanasia is 1.7 years. Zanowski felt that the animals bear the true cost of euthanasia, because they can feel pain and pleasure and are more human than we would like to portray them. Zanowski further said that “animals being led to their deaths feel pure terror [as evidenced by their becoming] skittish” (p. 5). Dogs in gas chambers do not die immediately, but struggle to breathe and stay alive and others undergoing lethal injection experience nausea and disorientation and often struggle to escape the shelter technicians (Zanowski, 2010). Based on the research, Zanowski concluded that as long as shelter management and society agree that killing companion animals is acceptable, shelter staff will continue to quietly euthanize millions of animals.

Rogelberg et al. (2007a) were able to assess the high outlay of recruiting, hiring, and training replacements when a worker left a kill shelter. Targeting 36 shelters with at least five personnel who performed euthanasia on site, Rogelberg et al. (2007a) sent out surveys assessing the effects of the task of euthanasia on the shelter personnel. Rogelberg et al. (2007a) found that the loss of one employee created a domino effect on other personnel by increasing their workload, thus affecting those who are undecided about whether they wanted to stay and amplifying their sense of loss in the environment of a shelter that may already be understaffed and underfunded. Using the quantitative research

method, Rogelberg et al. (2007b) expanded their research on animal shelter personnel turnover with a follow-up article in which they assessed 305 personnel employed in 62 shelters as to what could be done to alleviate euthanasia-induced stress on personnel who must carry out the fatal actions. Using open-ended broad questions with extra space provided for additional comments, Rogelberg et al. (2007b) achieved an 80% response rate and were able to collect data on the work situation, job outlook, and euthanization experience. Rogelberg et al. (2007b) positively correlated the euthanasia rates with personnel turnover. The costs of personnel turnover was relevant to my research. Rogelberg et al. (2007b) were able to show that the abandonment of companion animals not only resulted in the unforeseen consequences of personnel quitting their jobs but also passing on the costs of hiring and training new personnel to taxpayers. Rogelberg et al. (2007b) suggested that additional research should be carried out to study data after some of the solutions to their findings such as euthanasia methods used, variability in job rotation, realistic job previews, and the use of performance appraisal systems were implemented. Rogelberg et al. (2007b) found that suggestions to reduce stress resulting from personnel performing euthanasia included support from others, counseling, a designated euthanasia room, stopping the killing of healthy animals, moving dead animals out before live ones are brought in to be killed, and holding memorial services for those animals killed. As mentioned earlier, Anderson (1985), who examined military companion animals at the time their owners were transferred, stated 29% of that group were likely to leave their animals behind, suggesting there is an increased need to euthanize animals if space is limited at shelters associated with the DoD installations.

Rogelberg et al. (2007b) shed light on how animal abandonment by DoD personnel may be affecting personnel in local shelters. Although Anderson's (1985) work is dated, the research opened doors for further research on this subject, but it has not attracted researchers to the specific topic of animal abandonment by DoD personnel. The thorough search of the literature that is available and presented here described many articles that address the different aspects of the abandonment problem, including the characteristics of owners who abandon their animals, the characteristics of the abandoned animals, and the impact of euthanasia on animals and shelter personnel. What is missing was any theoretical or empirical research that explicitly looks at the impact of DoD companion animals' abandonment on the community shelters.

Existing Gap in Research

There are several reasons why the impact of DoD animal abandonment on local shelters has not been explored by researchers. Hoshmand and Hoshmand (2007) found that there was a need for community-mental health professionals to take on developmental programs supporting DoD families. Hoshmand and Hoshmand argued that the relationships between the DoD community and the civilian community cannot be overlooked, because each is affected by the geopolitical circumstances and the effects of the deployment of DoD personnel. Looking at the relationship between the psychological concerns of the DoD installation population and the community coordinators who could be of assistance to the DoD population, Hoshmand and Hoshmand found that there is an unspoken and incorrect understanding by the local community that the DoD takes care of its own personnel and their families. Hoshmand and Hoshmand also suggested that

historical restrictions separated the DoD on base community from the civilian community that surrounds the base. Hoshmand and Hoshmand further found that because the DoD is concerned with warfare, there is a philosophical ambivalence toward the DoD family population, and in fact, the isolation of the two communities from each other is reflected in the lack of literature that addresses problems created by one entity that affect the other. The detachment between the two communities may have created the gap in the knowledge of how the large number of animals abandoned by the DoD personnel affects the shelters in the contiguous, civilian community.

Conclusion

The lack of peer-reviewed scholarly research articles that address the key factors in the relationship between the influx of companion animals abandoned by DoD personnel (at the time of relocation) and the logistical (including financial) operations of local animal shelters made the case that the topic was understudied, which leaves the problem invisible to the members of our society. Animal abandonment is an unintentional consequence of directed DoD personnel relocation that, according to Merton (1936), results in real impacts that have a negative effect on others. Extensive research is available that addresses the stressors that affect DoD families (e.g. Hoshmand & Hoshmand, 2007; Palmer, 2008). I found the existence of only one article that addressed relocation as a stressor that resulted in the abandonment of thousands of animals (Anderson, 1985) each year but did not fill the knowledge gap of the impact of animal abandonment on shelters. The literature was dotted with non-scholarly articles that discussed the impact of relocation on children, family members, and the animals

themselves, but the impact of the abandonment itself on local shelters was a gap that still needed to be filled with scientifically based research data. The majority of research that examined relocation of DoD personnel focused on the psychological aspects of personnel and their family members. Except for limited information on individuals working in animal shelter operations (e.g. Rogelberg et al., 2007a; Rogelberg et al., 2007b), who are often overwhelmed with either caring for or killing the left-behind companion animals, there was also little research that shed light on the cost effect on shelters. Anderson asserted that future research needed to be conducted to fill in these knowledge gaps by determining what happens to animals that were left behind and what effects the abandonment of companion animals had in the lives of DoD families who were relocating. My research filled one gap: the problem of the TUC of DoD animal abandonment on the management and logistical (including financial) operations of local animal shelters. Using the qualitative case study method, which I discuss in Chapter 3, I conducted my study in order to answer the research question. In Chapter 3, I also present my rationale for the research design method and the theoretical framework of the research.

Chapter 3: Research Method

Introduction

I used a descriptive qualitative case study as the research method for this dissertation, in which I examined the perspectives of both animal shelter management and personnel about the key factors in the relationship between the influx of companion animals abandoned by DoD personnel (at the time of relocation) and the logistical (including financial) operations of local animal shelters. In Chapter 3, I discuss how I address the research question. I include in Chapter 3 a discussion of the central concept, followed by an outline of the research design and my rationale for that design. I then discuss my role as a researcher, including possible biases and potential ethical issues. I also include in Chapter 3 my sampling selection, explaining in detail the criteria and rationale I used to select the animal shelters studied. Further, I explain the data collection in order to allow the reader to understand not only how the data were collected, but also what data were collected. I then discuss the plan for data analysis, including how clarity and validity added to the collection, storage, coding, analysis, and conclusions of the research. I conclude Chapter 3 with issues of trustworthiness in the context of standardization (Rudestam & Newton, 2007), and I address the concern of conclusions that were based on a few exceptions or anecdotalism (Silverman, 2005). Finally in Chapter 3, I include a segment on ethical procedures and the safeguards that I had put in place for the treatment of information disclosed by participants. I close Chapter 3 with a summary that reiterates the chapter's main points.

Animal abandonment may be an unintentional consequence (Merton, 1936) of the relocation of DoD personnel, and based on the wide-ranging social impact of such actions, an understanding of the actual cost effect on a local animal shelter deserved closer examination. Animal abandonment by DoD personnel occurs on a daily basis and in hundreds of shelters. The descriptive, qualitative, case study method was best suited to examine the key factors in the relationship between the thousands of animals abandoned by DoD personnel and the animal shelter management and logistical (including financial) operations of local shelters in everyday language (Sandelowski, 2000). This approach allowed me to examine the actual costs to shelter operations, the perceived impact on shelter personnel, and the quality of life for animals housed in these shelters. This information will help policy makers and public administrators in the DoD understand the budget implications for the local shelters, which directly affect the monetary resources of the communities.

By using a descriptive, qualitative case study approach, I produced new knowledge that sets the stage to allow for positive social change and assist DoD policymakers in understanding the implications of the DoDD. Presenting new knowledge to advocacy groups, shelter directors, local civilian leaders, policy makers, and DoD installation managers creates the opportunity for positive social change affecting the abandonment rate and animal shelter operations. This new knowledge allows for the development of strategies to reduce the number of animals being abandoned, thus producing a positive social change. A more practical goal of my research was to produce knowledge that, now available to policy makers, will allow for the reduction of the costs

borne by the local shelters that must take care of the animals left behind by DoD personnel. My main motivation to conduct the research came from the lack of literature on the subject of animal abandonment by DoD personnel upon relocation and the wide-ranging effects of the abandonment. Other effects, although I did not address them in this research, included (a) children when companion animals accompany them to the new location, and (b) companion animals with couples who are separated because of deployment, and (c) the negative impact of the sudden loss of a companion animal upon children (Walsh, 2009b).

Research Question

1. From the perspectives of both animal shelter management and personnel, what are the key factors in the relationship between the influx of companion animals abandoned by DoD personnel (per month, at the time of relocation) and the logistical (including financial) operations of a local animal shelter (as measured in U.S. dollars per month)?

Research Design and Approach

Through the research question, I could explore the effect on the animal shelter management and logistical (including financial) operations of local animal shelters when DoD personnel had to relocate and who chose to abandon their animals. The descriptive, qualitative, case study method, which focuses on the summary of actions and may contribute to the development of causal explanations, was well suited for researching such effects (Maxwell, 2005). In a review of the relationship between the problem statement, the research question, and data collection used to produce new knowledge, I

found that neither the narrative, phenomenological, ethnographic, grounded theory, nor quantitative or mixed methods approaches was suited for the research. The qualitative, case study, descriptive method allows the presentation of the data in everyday language, was less restrictive, and provides the freedom not to interpret the data and events according to the narrative approach, phenomenological method, ethnographic study, or grounded theory.

The narrative approach would have been best suited for collecting biographical data and was not suited to examine the impact of animal abandonment by DoD personnel on local shelters. This approach would have been appropriate if I examined a person's life and/or lived experiences, including the role an animal played in that person's life or what events led to the animal's being abandoned. However, the research would not have allowed, from the perspectives of both animal shelter management and personnel, an exploration of the key factors in the relationship between the influx of companion animals abandoned by DoD personnel (at the time of relocation) and the resulting logistical (including financial) operations of local animal shelters.

The phenomenological approach was a good candidate for researching the abandonment issue, but not to examine the cost effect on the local animal shelter. The approach is used to examine how humans interpret an experience (Patton, 2002) and then capturing and describing that experience. If the research framework had been phenomenological, a participant's description of an event would need to be reinterpreted in phenomenological terms. The data would have needed to be interpreted using such terms relating to physical existence, an interpretation that would have gone beyond the

data needed to answer the research questions in a descriptive study (Sandelowski, 2000). The research question I presented for my study did not require research to be conducted using the phenomenological terms.

Along the same lines of examining the experiences of the participant as in the phenomenological approach, the ethnographical research approach would have meant that I would examine the cultural themes, basis, and issues (Patton, 2002) that may pertain to the personnel of local shelters. In the data analysis (Creswell, 2009), I would have presented data on the affected group from a cultural viewpoint. The goal of determining the impact of animal abandonment by DoD personnel upon relocation would have been restricted to cultural aspects of the group affected by the abandoned animals, which would have been useful to a policy maker only from an anthropological point of view.

The grounded theory approach was considered as a research method, but the intent of that method is to generate or discover a theory and to explain an action (Reynolds, 2007). The grounded theory method would be useful if the goal of the research had been to theorize if the abandonment of the companion animals by DoD personnel is an unintended consequence of DoDD 1100.4 (2005). Instead, my aim in this case study was to examine the relationship between the animal abandonment and animal shelter management and logistical (including financial) operations of local shelters, which made the determination of *why* the animals were abandoned. If I had used the grounded theory method, the data gathered from exploring the impact of animal abandonment would have needed to be interpreted within consequential steps leading to

theory development (Creswell, 2000). Maxwell (2005) reiterated that the type of method used may inadvertently affect how the data are interpreted. An examination based on the research question did not require the construction of a theory, but instead required, from the perspectives of both animal shelter management and personnel, an exploration of the key factors in the relationship between the influx of companion animals abandoned by DoD personnel (at the time of relocation) and the logistical (including financial) operations of local shelters.

There were several reasons why I did not select the quantitative research method, including the inability to determine the total cost effect of the animal abandonment, which comprised not only the financial cost but also the psychological cost on shelter workers and the quality of life of the animals in the shelter. If I used a quantitative method, the data collection would have been instrument-based, eliminating the opportunity to gather information using open-ended questions, observation data, and document review data. The analysis scheme using the quantitative method would have needed to be based on statistics, whereas the qualitative method allowed for the interpretation of themes and patterns produced by the qualitative narrative data collection.

Rationale for the Employment of Qualitative Research Design

By using the qualitative case design I brought up questions of *how* and *what* which led to deeper questions that resulted in more interesting answers (Booth, Colomb, & Williams, 2008). Using a qualitative case study method that was descriptive permitted low interference, which may allow for a more amenable consensus from other researchers (Sandelowski, 2000). My selection of the qualitative method to research the effect of

TUC of companion animal abandonment was not made on the assumption that the method was easier, but because it was the method that was best suited to answer the research question.

I had selected the case study method as my approach because from the very start it allowed a focus on the impact of the animal abandonment on local shelters associated with the DoD installation (Patton, 2002). Rudestam and Newton (2007) suggested that questions posed during the case study research focus on the *how* and *what*. The focus was on *how* animal abandonment affected the managerial and logistical (including financial) operations of the shelters, the shelter personnel, and the quality of life of the animals living in the shelters. Additionally, Creswell (2007) reiterated that a case study explores an issue within a bounded system, which for my research was the two sample animal shelters, associated with the DoD installation. McNabb (2008) stated that the case study is used mostly in social and administrative sciences and used to categorize five purposes, including (a) establishing theories, (b) testing existing theories, (c) identifying conditions that lead to a phenomenon, (d) establishing the importance of contributing conditions, or (f) establishing the importance of one case study as a potential of other similar examples. By selecting one installation that was representative of other DoD installations, this case study of two local shelters serves as an example of how animal abandonment by DoD personnel affected shelters located near DoD installations.

For my research the descriptive qualitative case study method was the right method to pursue the practical goals and to answer my research question. The descriptive approach allowed me to present the research results in a straight-forward description of

the participants' experiences (Brown, 2014) that stakeholders will be able to understand. The descriptive method allowed me to collect data through the use of interviews, a survey, and a review of documents. My document review included intake, adoption, and euthanization rates, and the cost of feeding and caring for the animals. I reviewed records that pertained to personnel turn over and training records. Using the descriptive qualitative case study method helped me to present knowledge in a straightforward format that will be a venue for further study by future researchers.

Role of the Researcher

My function as the researcher in the qualitative method required a thorough and continuous interaction with the selected participants of the study (Creswell, 2009). As the researcher, I conducted the study and had the sole responsibility for selecting the two subject animal shelters, stating the research purpose of my research, informing and gaining the consent of the participants, collecting data, storing, coding and analyzing the information, and writing the final research report. By using the descriptive qualitative method, any personal biases I had were kept to a minimum (Brown, 2014), because this method required a straightforward retelling of the collected data, which prevented a reinterpretation of the data to reflect my personal views.

The Researcher's Duties

One of the duties I had as researcher was to coordinate with gatekeepers (Creswell, 2009) to ensure access to historical information and to gain the cooperation of not only the directors but also the personnel who were on the front lines of animal shelter operations. An announcement letter was sent to the selected animal shelters located near

the DoD installation, which provided information about the research purpose, data collection, and the steps that would occur during the collection phase of the research. In the introductory letter I also explained to management and personnel that their participation was voluntary, that the information would be kept confidential, and they could withdraw from the research at any time. If any personnel had decided they did not wish to participate or want the information they submitted back, their information would have been returned. If the management of the selected shelters had felt that there could have been negative retaliation from animal donors, such as stopping donations, then that shelter would have been withdrawn from the research and replaced with another shelter that met the criteria.

Researcher Bias

Maxwell (2005) took a positive view and suggested that the researcher's bias often contained intuitions, theories, and rationality checks that should not be disregarded. The challenge was to keep my personal bias in the background and to keep bias out of my data collection and final examination of the data. Patton (2002) maintained that research could not be totally objective and that I should acknowledge my biases, use thorough field procedures, and discuss my biases in the findings of the research. Patton proposed creating an audit trail that would verify the thoroughness of the research. In analyzing the research data, Patton recommended highlighting the empirical results with a triangulated description and not the researcher's own personal viewpoint. Patton added that triangulating the data would increase validity, but did admit that I had to accept that my

research could never be completely objective. In this research, there were multiple sources of data, so I met Patton's suggestions.

One of the last actions I will undertake, as researcher, is to disseminate my findings to the participants of the study, the public, the advocates, and the policy makers. It is important to provide copies of the results to the participants which will allow them to see how their participation assisted in the completion of the research. An important part of dissemination is to distribute copies to the selected DoD offices and officials who can make policy decisions based on the final research results and to advocacy groups who can use the research results to pursue their agendas.

Sample Population

My selection of the two shelters focused on ensuring that they were representative of other shelters found near DoD installations. It was important to show that companion animal abandonment was consistent and that the action of abandonment seasonally related to the mission of the DoD installation. Once an individual received orders to relocate, as directed by DoDD 1100.4 (2005), the owner's thought process on whether to keep the companion animal or leave it behind was dependent upon both the characteristics of the owner and the characteristics of the companion animal itself (Anderson, 1985). For the same reason, it was important not to make a distinction between civilian personnel who were associated with a DoD installation and military personnel who were associated with that installation, because both were susceptible to receive relocation orders as a result of DoDD 1100.4. Individuals in both populations must make a choice and decide the status of their companion animal at the time of

relocation. A companion animal will either move with the family as a family-member, or be treated as expendable property (White, 2009), where the individual owner feels he or she can do with the animal whatever he or she chooses. The fact that more military personnel relocated than civilian personnel had no bearing on the research question. The selection of the two shelters was important in that they were representative of other shelters located near DoD installations.

Strategy

Patton (2002) suggested that purposeful sampling, which allowed for the selection of “information-rich” cases, allowed me to conduct in-depth research. Sandelowski (2000) recommended maximum variation sampling, which permitted me to target and select across a wide range of topics while capturing and relating essential issues back to the research question until data saturation was achieved. Patton suggested that any general patterns that developed in the analysis from the sampling would be the core issues that needed to be addressed in the writing. I searched for the common threads, themes, or patterns that described the key factors in the relationship between the influx of companion animals abandoned by DoD personnel (at the time of relocation) and the logistical (including financial) operations of two local animal shelters.

Following Patton’s (2002) strategy of using maximum variation, I first identified criteria for the selected shelters. The selection of the shelters was directly dependent upon the type of installation the shelters were associated with. There are more than 800 DoD installations throughout the world (Dufour, 2013), with the number of personnel stationed on the bases varying in population. Each DoD installation had either a training mission,

logistical mission, research and development mission, or a combat readiness mission. The population of each installation varied according to the mission, but a common characteristic of the installations was that they had personnel—some with families, others without families—that were affected by DoDD 1100.4 (2005). Critical for the selection was whether the DoD installation had personnel who were stationed there with their families. The population of single personnel was also considered. The reasoning behind the selection criteria was that according to research by Anderson (1985), 66% of military members had companion animals at the time of relocation. The installation had to have personnel who were permanently stationed in the area in order to perform their jobs. Whether they were married or not was not important; what was important was whether they had set up a home where a family and a companion animal could live. DoD has some installations that are mainly for training purposes, where a large population of DoD personnel is housed in dormitory-type living arrangements for a short period of time (less than 6 to 12 months). Such living arrangements rarely allow companion animals. Though a school cadre is present at this type of installation, it is generally small and is often in place for longer periods of time. The problem with training locations was that some allowed the accompaniment of families while others discouraged DoD personnel from bringing their families because of the short time on station.

Criteria for Shelter Selection

My selection of the animal shelters studied was based on the installation near which the shelters were located. I conducted a provisional search to examine the composition of population of the installation to ensure it met the criteria of having

personnel assigned who were accompanied by families or provided living quarters for single personnel where an animal could be kept legally or illegally. During the preliminary exploration phase, I contacted the potential shelters by phone to see if there was any initial interest in participating in the research project. Contact was made with the directors of the prospective shelters to see if there were any barriers that would have kept the shelter from participating. Mason (2010) stated that the sample selected should vary enough to uncover all of the occurrences of the different possible answers to the research questions. In qualitative research the saturation point is reached when the data points or affiliated codes start to repeat, suggesting that no new data is likely to be found (Mason, 2010). Unlike the quantitative method, where one occurrence of a varying answer to a research question could be discarded, in the qualitative method just one occurrence can provide the understanding of why something may be happening, because even one occurrence has meaning (Mason).

Instrumentation

The data collection instruments for this research, in order of completion, included the review of shelter documents, a semi structured open-ended interview with the shelter directors, and semi structured open-ended interviews with the shelter personnel accompanied by a survey. First I collected the documents for review, coded and analyzed the data, and used the findings as a basis for the questions I asked the managers and personnel during the interviews and survey. The documents provided by shelter personnel, either by hard copy or electronically, included monthly intake rates, budget-related paperwork, personnel attrition rates and training, veterinarian expenses, food bills,

kill rates, and adoption rates. The review of companion animal intake rates, along with the analysis on the data acquired through interviews and the survey, were part of the validation and triangulation efforts of the collected data (Maxwell, 2005). The interviews allowed me to collect data through moderately controlled open-ended interview questions (Sandelowski, 2000). The survey allowed data collection from the shelter personnel who were affected by the daily influx of abandoned animals.

The shelter documents I examined retrospectively spanned the 12 months of 2013 - 2014 and provided a picture of how the shelters operated during that time. The intake rates included how animals came into the shelters, whether they were picked up as strays or surrendered to the shelters, and what time of year the animals were admitted. The purpose of the intake rates was to determine the seasonality (if any) that most animals came into the shelters and whether there was an intake surge that correlated with activities that occurred on the DoD installation. I reviewed budget-related documents looking for any spikes when the shelter needed more money. Paperwork recording personnel attrition and training was important, because it showed how many people left the shelter or were added to its workforce. During the director's interviews, I inquired what were the reasons personnel left and also determined any costs associated with the training of new, replacement personnel who had to perform shelter duties. Documents outlining veterinarian expenses were collected and analyzed for any flux in animal medical costs, such as vaccinations and spaying and neutering, during peak intake periods. In addition to examining the veterinarian bills, I reviewed bills for food that the animals consumed. An increase in food bills showed an impact on the financial needs of

the shelter. I examined the kill rates at the shelters because they showed the expense of killing a shelter animal and hinted that there was stress on the personnel that needed to be explored. My justification for reviewing the total budget was to get an overview of the expenditures for the shelters from which the cost per animal was deduced and then included in the data analysis. The shelters did not have specific cost basis for intake rates so I used the overall cost to run the shelters to figure the per animal cost basis which included a total summary of veterinary costs, food bills, personnel salaries, and logistical and maintenance costs.

My preliminary research findings set the stage for the interviews of the shelter directors and personnel because I was able to adjust the questions on the survey, which allowed me to gather written evidence in an unobtrusive manner and at convenient times (Creswell, 2009). The questions I used to interview the directors provided overview information from the management perspective whereas the survey questions provided more detailed data at the nonsupervisory personnel level. I focused on worker-level issues during the interviews with shelter personnel.

My focus during the interviews was to explore the key factors in the relationship between the influx of companion animals abandoned by DoD personnel (at the time of relocation) and the logistical (including financial) operations of the local animal shelters. In addition to the interviews, I used a personnel survey to gather further data. The shelter directors were also asked to complete a copy of the survey. The difference between the questions asked during the director interviews and those posed on the survey was the type of data found at various management levels of shelter management. The directors

provided information on the impact of the animal abandonment at the supervisory and management level, whereas the personnel provided information on how the impact was felt at the worker level. Maxwell (2005) pointed out that the interview questions are the “means” to answer the research question and to gain an understanding—in this case study; they provided an understanding of the relationship between the animals that were abandoned and managerial and logistical (including financial) operations of the local animal shelters. By being creative in the types of questions asked, I was able to present an in-depth view of the relationship between the independent variable (the influx of abandoned companion animals by month) and the dependent variables (managerial and logistical (including financial) operations of the shelters from the perspectives of both management and personnel measured in U.S. dollars per month; Maxwell, 2005).

I had hoped to interview the shelters' directors on site because I wanted to see the emotions, body language, and other visual cues that would have accompanied their responses. Unfortunately their schedules, except for short interactions, did not permit the onsite interviews. In hindsight it might have been better to have conducted the interviews via Skype. Although the interviews were conducted telephonically, the advantages of obtaining data in this manner outweighed other quantitative collection methods (Janesick, 2011).

Because of the advantage of flexibility, my research survey provided an across-the-board view of the key factors in the relationship between the influx of companion animals abandoned by DoD personnel and the logistical (including financial) operations of local animal shelters. The questions listed on the survey were carefully constructed

which allowed the gathering of accurate data (Frankfort-Nachmias & Nachmias, 2008) and contained both factual and subjective questions, and open-ended questions. The factual questions included information about the gender of the person and his or her job duties. This provided the framework and background of the person who filled out the survey. The subjective questions included data about the person's attitudes, feelings, opinions, and beliefs (Frankfort-Nachmias & Nachmias, 2008). The closed-ended questions allowed the participants to give quick answers and the open-ended questions provided participants the chance to state their views, feelings, and opinions (Frankfort-Nachmias & Nachmias). The questions followed a logical order which contained warm-up questions, general knowledge questions, and focused questions (McNabb, 2008). The draft survey had been sent and validated for content by two directors of shelters with whom I have a professional relationship, and I adjusted the survey based on their recommendations to increase both reliability and validity.

Data Analysis

The best data analysis approach for the qualitative descriptive research was the qualitative content analysis (Sandelowski, 2000). Sandelowski explained that the qualitative content analysis is data-driven and that the emergent codes are applied to the data as the research progresses. The purpose of the emergent coding was to establish a clear relationship between the independent variable (the influx of abandoned companion animals by month) and the dependent variables (managerial and logistical) operations of the shelters from the perspectives of both management and personnel measured in U.S. dollars per month).

Coding Method

My initial coding frameworks started with the research question and were based on the independent variable and the dependent variables (Zickmund, n.d.). The independent variable was the number of companion animals abandoned by DoD personnel on a monthly basis. The dependent variables included aspects of the managerial and logistical (including financial) operations of shelters as measured in U.S. dollars per month. I explored the relationship between the number of abandoned companion animals and the managerial operations, by examining the overall climate of the shelter (morale, motivation, stress, and personnel cohesion). I researched the relationship between the number of abandoned companion animals and the logistical (including financial) operations, by reviewing the monthly costs all in U.S. dollars:

- Monetary costs to run the facility (water, electric, and incineration costs)
- Monetary costs to maintain shelter vehicles (maintenance and gas costs)
- Monetary costs to house and care for the shelter animals
- Euthanization and adoption costs

I examined the relationship between the number of abandoned companion animals and the quality of life of animals in the shelter by reviewing:

- Quality of food provided to the shelter animals
- Amount of space allotted for each animal
- Cleanliness of the animal spaces
- Time an animal spent with an attendant (grooming and walking)

By exploring the relationship between the independent and dependent variables, I searched for opinions and attitudes that not only answered my research question but also assisted in the coding procedures. Unlike quantitative research, where preexisting numeric codes are applied to the data, my use of the qualitative research method allowed the development of emergent codes based on the actual collected data (Rudestam & Newton, 2007). I used the constant comparative method which permitted me to develop new categories in which I placed new data (Rudestam & Newton, 2007). During the data collection I also looked for common threads that assisted my data analysis. The first source of data was the document reviews which allowed me to perform coding on several dependent variables such as the cost of picking up stray animals, animal housing costs, veterinarian care, and preparation for adoption or euthanization. The interview data established themes and allowed a textual and emergent coding of responses given by the shelter directors. The third source of data was the shelter personnel surveys, which provided the most detailed data as well as an overview of how the abandonment of companion animals once owned by DoD personnel affected the animal shelter management and logistical (including financial) operations of the local shelters associated with the DoD installation. This group of responses required the most data entry into an Excel spreadsheet but permitted quick retrieval and allowed the placing of additional emergently coded information into categories. I used open coding which allowed me to constantly compare the entire text and place them in descriptive categories. The survey data permitted coding of themes that included the emotional responses provided by

participants. I used the frequency of similar responses in the formulation of conclusions and recommendations.

Themes and Patterns

I performed line-by-line analyses of responses after the Excel filter function was applied which permitted the organization of commonalities between the responses from the interviews. I used a technique that identified themes and built patterns from the examination of word repetition (Ryan, 2014). Exploring the category of shelter climate created patterns of word usage such as personnel not wanting to come to work or perform their duties. Personnel who used words associated with “too much work,” “not enough time,” or, “no end in sight” suggested the theme that the work load was too much and personnel time was stretched thin as a result of the increased influx of additional animals. Another area that produced patterns and themes was the logistical area such as animal care. I explored the veterinarian category and searched for words that were indigenous to veterinarian care which allowed the formation of theme specific categories pertaining to the status of the animals that came into the shelter. Another technique that identified themes was searching for missing data (Ryan, 2014). Going back to the status of personnel, the absence of words that indicated joy or happiness suggested that the atmosphere was not positive in the shelters. Theme and pattern identification was a paramount task of my research. Because little research has been conducted, I created new knowledge by examining (from the perspectives of both shelter management and personnel), the key factors in the relationship between the influx of animals abandoned

by DoD personnel (at the time of relocation, per month) and managerial and logistical (including financial) operations of two local animal shelter (in U.S. dollars monthly).

Issues of Trustworthiness

Credibility

The document review, the survey responses, and the interviews were designed to produce the same information but from different collected sources. It was important that my results were based on data that were consistent throughout the research. By searching for the same data—in the document review, again on the survey, and then again in the telephone interviews, and finally finding the same data in the document review—credibility was established by triangulating the collected data (Patton, 2002).

Triangulation of data occurred when the same information was collected but was produced by different sources.

Transferability

The best effort in ensuring external credibility was the selection of the participating shelters. I made every attempt to select shelters associated with a DoD installation whose mission was representative of other installations. Ensuring that the selected shelters were typical of other shelters near DoD installations added credibility to the collected data on the impacts felt from the abandonment or surrender of animals by DoD personnel. I was able to establish credibility which will counter potential criticism, such as assertions that the research was conducted in order to prove my own thoughts and ideas without regard to other points of view (Maxwell, 2005). Other researchers will be able to confirm the data because of the strategy involved in the type and location of the

animal shelters, which ensured variance in the data collection (Wise, 2011). This study is well documented and replicable. I am an advocate of open sourced data and am willing to share this anonymized and raw data with any fellow scholar practitioners in an effort to duplicate the findings.

Dependability

My strategy to establish dependability was based on an audit trail that I developed with the help of research co-workers who understood the research area. The co-workers reviewed the emergent coding of the data for analysis and followed the research work, which created an audit trail based on their review (Bowen, 2005). They arrived at the same perspectives that I had, based on the notes from the document review, telephone interviews, surveys, and the emergent coding of the data which ensured that the research results were as dependable as possible (Bowen, 2005).

Conformability

Patton (2002) and Wise (2011) explained and expanded the use of reflexivity in establishing credibility and conformability of the research. Patton asserted that it is important for the researcher to reflect on his or her own cultural, social, and political biases. At the same time, as the researcher, I needed to consider the same aspects of the individuals who I interviewed. I used a credible, authoritative, and logical voice so that the reader could see that I had distanced and detached myself from the research (Patton, 2002). My resulting dissertation is based on qualitative case study descriptive research, which involved my retelling of what I found in the field. My use of the qualitative research method did not permit the luxury of using statistical data to present the results of

the research, but a creditable voice reduced the chances of the data being questioned because of a lack of clarity.

Ethical Considerations

Ethical concerns, according to Creswell (2009), should be considered up front during the research design so that participants are not put at risk and, in the case of my research, the individual shelters were also protected. The Walden University Institutional Review Board (IRB) approved the research (# 12-03-14-0291798, expiration date December 2, 2015) and during the research I adhered to the exact procedures described in the final version of the IRB application document. Participants were provided informed consent forms for signature which stated that their involvement was a free choice and that they could withdraw from the research (Maldonado, 2013) at any time without fear of retribution. Participants were provided, in writing, a statement of the research objectives, data gathering methods, and the safety of the collected information (Maldonado, 2013). An important aspect was that I conducted the research in an aboveboard manner with all the participants and had no hidden agendas. The personnel and the directors of the shelters who agreed to participate were assured that the purpose of my research was explained and that there was no deception (Creswell, 2009). The research was conducted in an ethical manner and followed the ethical standards set by the IRB. As far as risks for participating shelter directors and personnel, each participant was protected by building up trust and ensuring that there was integrity in my research project (Creswell, 2009).

Privacy and Confidentiality

The privacy and confidentiality for this research project was categorized into the following areas: collected information from the participants, the participating shelter, and the dissemination of the research data (Frankfort-Nachmias & Nachmias, 2008). My most important concern was the privacy and confidentiality of the participants, who were notified in writing of the limit of the confidentiality of the gathered information (Rudestam & Newton, 2007). Each participant was provided with an informed consent form. Participants were not compensated for their participation. I summarized the responses into group answers so that the answers provided could not be traced back to one particular person. Frankfort-Nachmias and Nachmias also suggested that each individual be assigned a number or code, which I accomplished during the data collection phase. Although some participants were able to return their survey to me before I departed, I provided postage and an envelope addressed to the research to participants if they needed extra time to fill out the survey and mail it to me later. The American Psychological Association (APA, 2009) suggested four strategies to disguise the material, including changing the characteristics, limiting the description, including extra material, and using composites. My plan was to keep the type of installation and the mission of that installation secret in the final results. My concern was not only for the individuals who provided the collected data but also for the participating shelters. The name and location of the shelters was not revealed for the following reasons:

1. Shelters are dependent upon private donations, and the publication of rates may be detrimental to the flow of donations supporting the shelter.

2. The actual cost of the intake of a companion animal may not be known by the general public (taxpayer) and purposely kept private.
3. Shelter personnel could be identified by making known the workplace shelter.
4. Private shelters may not want to be on the record for the true impact of the number of companion animals that come from the related DoD installation because of the effect on public relations with that installation.

An additional privacy and confidentiality concern was the storage of the research data files. With information in electronic form, I kept the data on the hard drive of a computer, thus limiting access to the data. The research data is also stored on a USB flash drive, and kept in a locked file cabinet for 5 years and then destroyed as required by IRB protocol.

Summary

In Chapter 3, I laid out how the descriptive qualitative case study method was applied as the research method for my study. With this pen-to-paper exercise, I was able to work out strategies for problems that were encountered during my research as they arose. In Chapter 3, I provided an introductory paragraph that outlined the chapter's contents and then laid out the central concept, and followed that with the research design as well as my rationale for the design. I discussed my role as researcher along with any possible biases and the potential ethical issues that may have arisen. I further explained the rationale of the selection of the target shelters. For clarification, I discussed the compilation of the information and the complexity of the analysis was discussed for clarification. I described and discussed in detail the ethical procedures and the safeguards that I implemented to protect the participants and the information they disclosed. The

completion of Chapter 3 allowed me to reach my goal of researching the impact of animal abandonment by DoD personnel upon relocation on the animal shelter management and logistical (including financial) operations of a local shelter. In Chapter 4, I discuss the research setting, the demographics of the participants, the data collection, and the analysis of the results. The discussion of the results addresses the impact on the shelters, the personnel, and the animals in the shelter allowing for a summary of the collection efforts. In Chapter 5, I discuss the implication for social change, suggestions and conclusions.

Chapter 4: Results

Introduction

The purpose of my descriptive, qualitative case study was to answer the key research question: From the perspectives of both animal shelter management and personnel, what are the key factors in the relationship between the influx of companion animals abandoned by DoD personnel (per month, at the time of relocation) and the logistical (including financial) operations of a local animal shelter (as measured in U.S. dollars per month)? In Chapter 4, I include a description of the shelters and the demographics of the participants. I further discuss how the data were collected, stored, organized, and emergently coded and how the data analyses addressed the research question. In Chapter 4, I also discuss the trustworthiness of the data and include the implementations and adjustments I made to improve credibility, transferability, dependability, and conformability. I present the results as they address the research question and support major themes and patterns that emerged from the data analysis.

Research Setting

The two chosen shelters were both associated with a DoD installation that met the criteria stated in Chapter 3, where personnel married or unmarried were able to set up living quarters and where animals could live legally with them as companion animals. During the data collection phase, there were no special events scheduled at either shelter, but the operational tempo did not allow all the personnel at each location to participate in the interview and/or complete the survey during my 2-day visit. Both directors were present and allowed me to present the overview slides to shelter personnel in small

groups during their break times. Because of the constant influx of animals, shelter operations could not be suspended to accommodate my collection of research data, and shelter directors could not break away for the time needed to conduct the interviews.

Participant Demographics

The participant demographics and characteristics included those personnel who were salaried employees and volunteers. All participants met the criteria for the case study and were familiar with varying aspects of shelter operations. Both directors were present, although one was an interim director who had worked in the shelter for 6 years and was familiar with all aspects of shelter operations. A total of 10 surveys ($n = 10$) were returned by the participants. By using Minitab, the statistical software program, I determined that the mean time participants worked in the shelters was 36 months or 3 years. The director's tenure averaged 12 years. Two personnel performed euthanizations as a part of their regular shelter duties. Eight participants cleaned cages and interacted with the animals during their daily tasks. Two personnel were administrative personnel, but they interacted with the animals during intake and adoption activities. Both shelter directors had the supervisory tasks, were involved in all stages animal care, and made the final decision of which animals were euthanized.

Data Collection and Organization

The data collection consisted of document reviews, director interviews and surveys, and a survey for the shelter salaried personnel and volunteers. Although not part of the original data collection plan, I included the observations that I made during the time that I spent at each shelter: these included statements made by the directors while I

toured the shelters and while I was waiting to speak with personnel about the research. I also observed the intake procedures as animals were either dropped off at the front desk or brought in as strays by shelter personnel.

For the numerical data I conducted the document reviews of the monthly statistical reports of the shelter animal populations and annual shelter billing sheets for the 12 months during the years 2013 and 2014. I split the 12 month year into three seasonal periods: summer (May, June, July, August, and September), fall-winter (October, November, and December), and winter-spring (January, February, March, and April). The 2 calendar year period (January 2013-December 2014) provided the time frame of 24 months.

The first set of documents I reviewed included a monthly wrap-up of intake, adoption, and euthanization rates covering 2 years. The second set of documents consisted of data covering the operational and financial aspects of running the shelter, paying the employees, and caring for the animals. One issue I encountered was that each shelter used a different software program to keep track of financial and numerical data. For the document review, I tracked the categories that were similar, such as intake rates and euthanization rates. I performed analyses on categories that were common in both data sets which provided additional credibility to the research data analysis. Categories tracked by one shelter and not tracked by the second shelter such as how the animal came into the shelter or how it was adopted out, provided only one numerical data set and did not support my concern of data replication.

To overcome the differences in categories tracked by shelters, I grouped all animals no matter how they entered the shelter as one group, abandoned animals. My rationale for combining all animals into one category was that their influx was related to the shelters' operational and managerial resources and shelter personnel once they were admitted into the shelters in the same manner. Once the abandoned animals entered the shelter, they became wards of the shelter and were given the same food, care, and faced the same consequences of either making it out alive through adoption or being euthanized. The financial records included employee salaries, electric bills, veterinarian bills, and vehicle maintenance costs of each shelter. Although the software was different between the shelters, both shelters had the same types of expenses allowing for a comparison of financial data. I used hard copies of the data from the document reviews and transcribed it to an Excel data sheet for the analysis. I re-entered the data to ensure there were no mistakes during the transcription and double checked it for accuracy.

Neither shelter director found time to allow a face-to-face interview on site, but I was able to conduct one telephonic interview and the second director submitted answers to the interview questions via the Internet. In both cases I was able to follow up with additional questions telephonically or through the Internet, so I was able to member check the responses. I transcribed and emergently coded the data from the telephonic interview into an Excel spreadsheet within 24 hours to maintain accuracy and a high degree of quality.

During my visit, the shelter staff continued to intake and process animals for adoption, but made time to fill out the survey either during their breaks or during their

lunch hours, and then some personally returned them to me before I departed. Some personnel did not have time to fill out the surveys and were provided a stamped envelope with my return address. All shelter personnel were aware of the purpose of the research and filled out IRB approved consent forms. I number coded the surveys to hide the identity of the participants during the research. I added the journal comments that I had collected during the shelter site visits to the data collection. My notes were free flowing and reflected the pace of the work at the shelters as animals were brought in by owners and as animals were either adopted out or were picked up by local rescues.

The variations that affected the data collection were the difference in the software used by each shelter and the lack of interview time with each shelter director. Both deviations from the planned data collection and the actual collection of the data did not reduce the quality of the type of data were collected. The Excel spreadsheets allowed for a meaningful analysis and theory building (Rudestam & Newton, 2007) because I was able to simultaneously compare answers to the same question by different individuals.

Data Analysis

Process

I entered and emergently coded all the raw data from the document review, the interviews, and the surveys into an Excel spreadsheet and/or Minitab for data analysis. The data entry also allowed me to organize the data according to data type for quick retrieval and organization. I used content analysis (Sandelowski, 2000) to sort through the qualitative collected data. The Excel spreadsheet allowed me to filter the text data from the document reviews, interview responses, and participant survey responses. By viewing

all of the responses the participants provided to any one question simultaneously, I was able to emergently code the data which became the basis for my final findings. I repeatedly sorted the data from the interviews and the surveys to find emergent themes (Janesick, 2011) to support the theoretical framework of Merton's (1936) concept of TUC and how the unanticipated consequences of the abandoned animals was related to the managerial and logistical (including financial) operations of the local shelters. The analysis techniques I used to discover themes in the data included searching for words that participants repeated, key words in context (KWIC), missing text, a comparison of the text, and a search of the text from a social scientist perspective (Ryan & Bernard, 2009). I color coded the data according to the categories and themes for easy recognition and quick reference. I labeled specific statements that were relevant to the impact upon shelters caused by the influx of animals abandoned by DoD personnel.

I first entered the data from the document review into an Excel spreadsheet for a general overview and then transferred the data to Minitab for statistical analysis. Because the shelters used different software and tracked different categories, my main focus was on the hard copy data that was the similarity between the shelters. I also considered data that was tracked by only one shelter if it was pertinent to the research question. I used Minitab to establish the costs per animal and the months during which the intake of animals was the highest during the year. The Excel spreadsheet filter function allowed me to develop the main themes which included: the top months for animal intake rates, the impact on personnel, and the impact on the quality of life of shelter animals.

Specific Themes

Specific themes that related to the research question and focused on the key factors in the relationship between the impact of the influx of animals included the costs to run the shelter, physical and emotional impact on personnel and quality of life animals already in the shelter. Using the Excel spreadsheet, I was able to load the data, and then begin filtering the data based on common words in text and then formulated the threads and categories. I set up categories that addressed the research question and used the data from the document reviews to substantiate the themes.

My first task was to determine when the highest intake rates of animals into the shelters occurred during the year. From the document reviews I combined the intake numbers of companion animals from both shelters to find the monthly intake numbers. I used a text search of the participant's responses to validate the times of the year by searching for the actual listing of months. Responses by both directors also added to the contextual coding threads of which months were the high months for animals coming into the shelter. I looked for the data for words that related to the impact of the influx of animals upon the physical and emotional aspects personnel of the shelter. I text searched for words such *more*, *work*, *stress*, and *family* to build common threads. When I found the word *stress* I also found the word *euthanization* within the context of that participant's survey response. One employee used the word *kill* but only to describe the type of shelter and not to describe the killing of a shelter animal. One director used the word *kill* and then explained he or she meant euthanization and other director used the word *put to sleep* and then explained he or she meant euthanization.

To find the common themes relating to the impact on animals by the increase in new animals coming into the shelter, I searched the data for words that participants repeated such *cleaning, food rationing, kennels, euthanization, stress, space, and aggressiveness*. The type of threads developed were directly related to the well-being of the animals with the word *clean* being one of the most repeated key words (Ryan, 2014) in the data. The word *clean* was generally associated with the word *more* and *more work* suggesting that clean kennels and cages are important in the daily caretaking of the animals but increased as more animals entered the shelter. The word *clean* was closely followed by the common use of the word *food* by participants in the survey.

Kennel space was discussed by participants and produced two threads. I found one thread that only allowed one animal was allowed per cage and if the shelter ran out of space they euthanized the overflow of additional abandoned animals. I set up another thread that explained that they not only share cages when the shelter is full but there are rules to how the cages are shared. Males and females are not mixed and food aggressive dogs are left in kennels alone. Shelter personnel even stated that they moved animals around to see which animals were willing to share kennel space with the purpose of not having to euthanize animals because of overcrowding. Euthanization was discussed by all participants not only in the framework of how it affected them but how it was the last resort when the shelter was overcrowded. One study participant stated that if he or she had a large influx of animals, then animals that had been there the longest were euthanized to make room for the new animals. A discrepant case by one participant provided awareness that was not transparent in the responses of other personnel. When

this participant was asked if his or her responsibilities changed when the intake rate increased he or she stated that *shots don't always get administered upon intake, kennels don't get cleaned, water doesn't get changed, and the phones don't always get answered.*

Evidence of Trustworthiness

Credibility

I was able to triangulate numerical data from document reviews and find the same information in the qualitative data gathered from the interviews and surveys. The document review, the survey responses of ten individuals, and the interviews of the directors produced similar data which added credibility to the writing of the final results of the research (Patton, 2002). An example of the data corroboration was the data that reflected the months where there was an increase in animals coming into the shelter. The document reviews showed an increase in intake rates during the summer months of May, June, July, August, and September. The same months were listed in the survey responses submitted by shelter participants. There was also additional data correlation between the euthanization rates, the physical and emotional impact upon the personnel, and the paucity of food and space requirements for the shelter animals.

Transferability

The DoD installation and the two associated shelters' selection was based on criteria and my research process was laid out in a description of the methodology (Chapter 3) and the data collection and analyses (Chapter 4). My research provides enough contextual information about the selected installation, the shelters, and the

research methods that other researchers can be confident in replicating my findings and transferring them to other research situations.

Dependability

Based on my efforts in establishing credibility and transferability, my research could be duplicated by other researchers to verify my findings. I provide sufficient details of how I selected the shelters, and the types of questions I posed in the survey and interviews, that my design may be viewed as a model for other researchers who want to apply my research to settings that include installations and shelters where DoD personnel with companion animals live.

Conformability

At the forefront of my research was my ability to remain objective. Although I had biases, I took care to review the background of participants and I selected the qualitative method because I wanted to show an impact relationship of the additional animals to the personnel and the animals. I gathered numerical data that was not influenced by feelings that participants displayed in their responses to survey questions. My data is solid in that it is not solely based on emotional responses but backed by numerical data analysis. The collection of different types of data allowed me to detach myself from the research adding to the conformability of the data (Patton, 2002).

Data Results

The themes that intersect the research question of what are the key factors in the relationship between the influx of companion animals abandoned by DoD personnel (at the time of relocation) and the managerial and logistical (including financial) operations

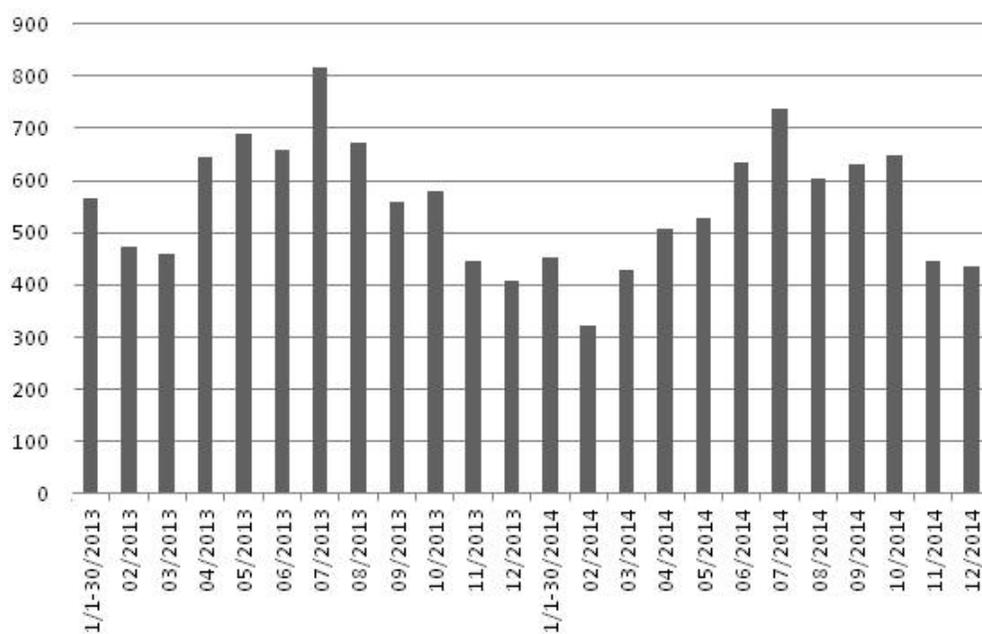
of the local animal shelters revolve around the managerial and operational costs to maintain the shelter, the impacts upon the personnel and the impact on the shelter animals. Relocation intake rates, physical and emotional impact on personnel, the quality of life, and euthanization rates of animals in the shelter provide insight into how abandoned animals by DoD personnel are related to logistical (including financial) operations of shelters located near the DoD installations.

Peak Relocation Intake Rates

The data analysis from the document review, the director interviews, and the personnel survey responses (along with my documented observations) established a relationship between the increase in the influx of animals during the summer season months and peak season for DoD personnel relocating. The average monthly animal intake rates were important because they allowed me to figure out the percentage of animals that entered the shelter during the peak months that were attributable to DoD personnel relocating to other installations. At the same time I was able to add the animals that entered the shelters during the remaining months based on Samuelson's (2014) research of when DoD personnel relocated. Samuelson found that that 65% of DoD moves occurred during the summer season and the remaining 35% occurred in the fall and winter seasons. From the analysis of 2013 and 2014 I created a sample timeline of 24 months which I split into three factors (seasons): summer (May, June, July, August, and September), fall-winter (October, November, and December), and winter-spring (January, February, March, and April).

Using numerical software, I established the averages of the seasonal animal intake rates depicted in Figure 1, and based on the shelter document reviews which covered the 2013 and 2014, 24 months. The summer months, May, June, July, August, and September, show peak intake rates. Anomalies such as the increased rate seen during January 2013 were not attributed to DoD personnel relocations but instead are usually the result of pets given as unwanted gifts during the holidays and then turned in to the shelter because they were not wanted (Diesel et al., 2010).

Figure 1. *Combined Monthly Animal Intake Rates for Both Shelters for 2013 and 2014.*



To perform a one-way *ANOVA* on the intake of shelter animals by season my null hypothesis was that intake rates means for all seasons were equal and my alternative hypothesis was that at least one mean intake per month was different. Table 4 depicts the

mean of the peak animal intake season summer, with 95 percent confidence that there were more animals taken into the animal shelters during the summer months than other months. The $p < 0.001$ forced a rejection of the null hypothesis and an acceptance of the alternative hypothesis that at least one mean intake per month is different.

Table 4.

Statistical Mean of Animal Intake Rates

Season	n	\bar{x}	SD	95 % Confidence Interval
Summer	10	653.0	84.5	(593.0, 713.0)
Fall-Winter	6	494.0	96.3	(416.6, 571.4)
Winter-Spring	8	481.9	95.6	(414.8, 548.9)

Based on the statistical means, the difference between the additional animal intake rates of the summer season compared to the fall-winter season and the winter-spring season is 24.4% and 26.7% respectfully. The average between the summer season and the means of the fall-winter and winter-spring reflects the number of additional animals that enter the shelters each month during the summer season, the peak relocation time for DoD personnel. The additional summer season increase of 25.5% in the intake rates equates on average, between both shelters to an additional 165 animals per month that must be taken in, cared for, and disposed of either through adoption or euthanization. For the summer seasons of 2013 and 2014, both shelters cared for an additional 1,650 animals that are attributable to DoD personnel. The average of additional abandoned animals correlates with Samuelson (2014) who stated that 65% of DoD moves occur during the summer season which establishes that the 1,650 animals are only 65% of the total

animals abandoned by DoD personnel. I added 35% or 782 animals from the remaining fall-winter and winter-spring seasons to bring the total animal intake rate attributable to DoD personnel for 2013 - 2014 to 2,538 animals, for these two shelters alone.

I performed context analysis on the surveys and director interview responses searching for responses that related to the intake rates as perceived by the participants. Of the ten personnel that responded to the survey eight listed summer months as the highest intake rates which confirmed their supervisor's responses. The pattern (Creswell, 2007) between the intake rates from the document review data and the participant survey response data established confidence in the research data. Eight out of ten personnel listed DoD personnel as dropping off their animals or the increase in animals as a result of DoD personnel relocation. In addition, shelter personnel directly stated that the cause of the increased animal intakes rates was due to DoD personnel *deploying, or changing their permanent duty station*. Directors stated that during the summer season, they get more calls from DoD personnel asking where the shelter is located so they can bring in their companion animal that they *won't be* taking with them.

I did not include the newly born animals in the statistical data because they are reflective of the animal reproductive cycles and not the abandonment rates (Marston & Bennett, 2009). Marston and Bennett established that kitten intake rates peaked two times a year with the first peak occurring when the weather warmed and then another peak two months later. Marston and Bennett research reflects that typically kittens were brought in by owners who stated they were surrendering the kittens because they had too many cats but the adult mother cat was neither surrendered nor spayed. During my shelter visits one

director presented me a box full of puppies for which they were trying to find kennel space, but the mother of the puppies was not surrendered or spayed since it was the family dog. Because the parent animals were not surrendered with their young but were kept by their owner does not support their inclusion in the population of animals that are abandoned DoD personnel during location time.

Monetary Cost

To assess the monetary cost of the additional monthly increase of 165 animals between the two shelters during the peak summer season, I first determined the combined cost to run the shelters. There was a variance between the two shelters in shelter employee salaries, employee benefits, animal food, veterinarian cost, vehicle maintenance, and building maintenance costs which resulted in the difference between the cost per animal. But by combining both the intake rates and the cost to run the shelters I was able to establish the overall impact the animals abandoned by DoD personnel on the community. When the cost to operate both shelters for 2013 and 2014 is combined and then divided by the total animal intake rate for the same years, the cost per animal is \$132 from intake to deposition which is well below the national average of \$250 - \$400 per animal nationwide (American Humane Society, Born Free U.S.A., and Pet Finder, 2014). The total cost to intake, care for, and dispose of animals abandoned by DoD personnel at the time of relocation for both shelters for 2013 and 2014 in my research was \$158,853 for each year.

Impact on Personnel

One of the key factors in the relationship between the influx of animals abandoned by DoD personnel and local shelters is the perceived physical and emotional impact on shelter personnel. One survey question directly asked participants if their job duties or their quality of life were impacted by the additional influx of animals and they responded that: *it adds lots of stress to both home and work, there is more work but no additional pay, there is more cleaning, work is busier and more tiring, more euthanizations, and they dreaded coming to work.* Participants stated their responsibilities did not change but there was more cleaning to perform, more calls to pick up animals, and directors stated that they needed more manpower for the additional work but were not budgeted for additional staffing. One personnel stated that teamwork became very important especially if someone called in sick.

The word *stress* was repeated throughout the survey 13 times and 60% of the participants stated they were stressed because of the higher influx of animals. Participants stated their work was busier, more tiring, and they worked harder but were not paid more. To deal with the additional stress participants stated, they would *take a step back and breathe, vent to family members, work out at a gym, keep a journal, take long walks with their companion dogs, smoke cigarettes, pick up trash* which they considered therapeutic, or they *quit their job and came back as a volunteer.* Directors who already saw their personnel overwhelmed (from the euthanization burden and the rudeness from the public because their shelters were considered a kill shelter) also managed work schedules, and decided which animals would be euthanized to make room for the new arrivals. One

participant stated that he or she had no stress but had only recently been hired and had worked in the shelter for only 4 months of which some time was spent in training. Although the shelter animals were the cause of the increase in workload, missing from in the textual analysis of the participant responses was any blame or resentment from the personnel toward the shelter animals for their increase in work and stress. A common thread was that the personnel were more concerned about the impact on the animals such as an increase in aggression and the possibility of euthanization than the workload the animals created for the personnel.

One director who had an employee quit stated, *they can't euthanize anymore, can't deal with the stress due to the euthanization, and the public rudeness*. Another shelter director stated, that the personnel suffer from *compassion fatigue* (Rank, Zaparanick, & Gentry, 2009), *they are exhausted from caring* and with the installation nearby *it is like another city is bringing animals to us*. Davis (2009) found that compassion fatigue is common among animal rescuers who are traumatized by the constant overwhelming feeling of the suffering of animals. The same director stated the biggest problem is with the spouses of deployed DoD personnel. The left behind spouse will bring in the deployed DoD personnel's dog and relinquish all ownership rights leaving the dog at the shelter to be either euthanized or adopted out. When the deployed spouse returns he or she comes to the shelter to retrieve the dog and told the dog is gone.

Euthanization Impact on Personnel. To capture the perceived impact of euthanization of shelter animals as stated by the personnel, I developed the theme pattern by searching the responses using the word repetition method (Ryan, 2014). The word

euthanization was used in responses to questions relating to the perceived impact of the increased animal intake rates to questions pertaining to the impact on personnel and the impact on shelter animals. Shelter personnel used the word euthanize whereas shelter directors used the word *kill*. Shelter personnel listed that their euthanization duties increased and others stated that the increase in euthanization was directly related to the increase in animals coming into the shelters during the summer months, when DoD personnel relocated. Personnel stated they resorted to euthanization as a last resort to keep the numbers of animals within the shelter capacity

One employee stated that euthanization was especially hard on him or her because he or she would spend time with the dogs every day and then the animal would be euthanized because the kennels were full. Another employee whose job it was to find new homes to keep healthy animals from being euthanized found him or herself continually searching for answers, working from home using Facebook to move animals, setting up transfers, putting in long hours, spending less time with his or her family, and constantly thinking about what to do next. One employee stated that among the animals there was more to remember, more personalities, more likes, more dislikes, more medical problems, and illnesses. Both directors stated that their shelter personnel suffered from compassion fatigue (Rank et al., 2009).

Impact on Shelter Animals

Animal Stress and Kennel Space. Although personnel frequently used the word *stress* to describe the perceived impact of the new animals on themselves, they also used the word *stress* when they discussed their concern for the animals already in the shelter.

A common thread that emerged from personnel whose job it was to spend time with the animals and walk the dogs was animal aggression and the risk of euthanizations. In an effort to save lives and create time for adoption or for a rescue, animals had to share cages which brought out aggression in some dogs who were kenneled with dogs they did not know. Male and female dogs were never put in the same kennels but personnel tried to move dogs around and put them in with other dogs that allowed them to buy time for rescue or adoption. One employee stated that when the shelter is consistently at capacity, less attention is given to each animal; which spends more time in its kennel, becomes agitated, gets labeled aggressive, and as a result, is eventually euthanized. One participant quantified the situation by stating that at times there was one person caring for animals where there were three or more dogs per kennel and a total of 20 kennels making it impossible to show attention to that many companion animals.

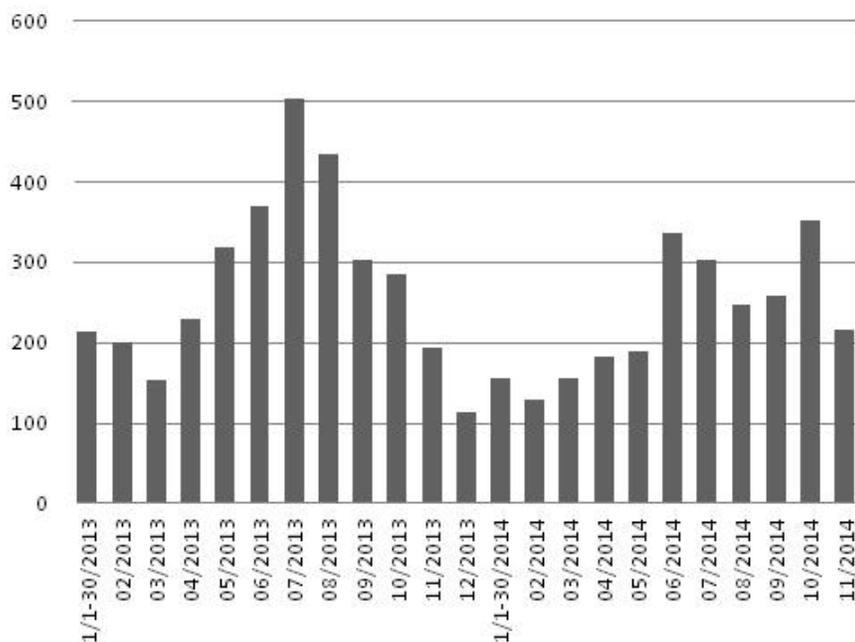
Of the seventeen responses from participants that referenced the cleaning duties of the kennels or cages, 100% stated that their duties increased with some personnel adding that not all the cages were cleaned because there were too many animals and they could not keep up with all the additional work. If the shelter was at capacity, typically in the summer months, animals were kept in cages in the hallway as personnel tried to find rescue or adoption venues to move them out of the shelter and avoid euthanization. Personnel stated they tried not to force animals to share of kennel space because some dogs are food aggressive and the gender of animals prevents them from sharing kennels.

Food Quality. In addition, how the increase in the number of animals in the shelter impacted the quality of food depended on the shelter. Of the responses that

referenced the feeding of the shelter animals 83% of participants stated that the quality of food changed to some degree but shelter personnel stated that if an animal was on a special diet, they would ask for donations to continue to buy the special food. With more animals coming into the shelter, food was a concern (not so much as how much food was given but the quality of food given to the animals) as a result of the high intakes rates associated with the relocation of DoD personnel. One participant stated that wet food was provided to older dogs who cannot chew the dry food. There were conflicting responses to whether or not food was rationed when more animals came into the shelter. One participant stated food was rationed when they began to run low, the quality decreased if they ran out of donated food and they then bought the least expensive food to get the most quantity. Both directors referenced food, stating an increase in animals equaled an increase in the costs to feed more animals.

Euthanization and Shelter Animals. Both numerical and qualitative data established that shelter animals both already in the shelter and those taken in during the peak summer season face the heightened risk of euthanization. Figure 2 depicts data from the document reviews I performed at each shelter and shows the combined euthanization rates for each month that occurs during the peak DoD personnel relocation season.

Figure 2. *Combined Monthly Animal Euthanization Rates for Both Shelters for 2013 and 2014.*



Using numerical software, I depicted the combined euthanization rate for both shelters during 2013 and 2014. The 24 month time frame was split in three factors (seasons): summer (May, June, July, August, and September), fall-winter (October, November, and December), and winter-spring (January, February, March, and April). I performed a one-way *ANOVA* on the euthanization of shelter animals by season, stating my null hypothesis that mean euthanization rates for all seasons were equal and my alternative hypothesis that at least one mean was different. Table 5 depicts the mean of the peak animal euthanization season summer; with 95 percent confidence that there were more animals killed the animal shelters during the summer months than other months. The *p*-value is 0.001 forcing a rejection of the null hypothesis and choosing the alternative hypothesis that one mean is different.

Table 5.

Statistical Mean of Animal Euthanization Rates

Season	<i>n</i>	\bar{x}	<i>SD</i>	95 % Confidence Interval
Summer	10	326.5	91.8	(276.3, 376.7)
Fall-Winter	6	218.8	87.5	(154.0, 283.6)
Winter-Spring	8	177.6	34.5	(121.5, 233.8)

Based on the statistical means the difference between the animal euthanization rates of the summer season compared to the fall-winter season and the winter-spring season is 33% and 46% respectively. The average between the summer season and the means of the fall-winter and winter-spring reflects the number of additional animals that are euthanized in the animal shelters each month during the summer season, the peak relocation time for DoD personnel. The additional summer season increase of 39.5% in the euthanization rates equates on average, between both shelters to an additional 129 animals per month that must be euthanized. For the summer seasons of 2013 and 2014, both shelters euthanized an additional 1,290 animals that are attributable to DoD personnel. Just as the intake rates, the euthanization numbers correlate with the DoD moves that occur during the summer season. Taking the 1,290 animals which represent 65% of the DoD Samuelson (2014) and adding the remaining 35% euthanized during the remaining fall-winter and winter spring seasons, 645 animals the total animal euthanization rate attributable to DoD personnel for 2013 - 2014 is 1,935 animals.

Summary

In Chapter 4, I provided information that showed how the animals abandoned by DoD personnel was related to the operations of two local shelters. I included a description of the shelters and the demographics of the participants. I also discussed how the data was collected, analyzed, organized, and stored according to the IRB research standards. I presented the analyses and how the results help to address the research question. In Chapter 5, I provide an interpretation of the findings in Chapter 4, the public policy implications for social change, recommendations, and conclusions.

Chapter 5 Discussion, Recommendations, and Conclusions

Introduction

In this descriptive, qualitative case study my purpose was to describe the key factors in the relationship between the animals abandoned by DoD personnel and the animal shelter management and logistical (including financial) operations of local shelters. The rationale of the research was to contribute to the current limited knowledge of how animal shelters are affected by the animals left behind by DoD personnel. This research approach, which included document reviews, interviews, observations, and a survey, allowed me to examine actual impact and costs to shelter operations, the effect on shelter personnel, and the quality of life of the shelter animals.

I start Chapter 5 by presenting an interpretation of the data from the document reviews, the interviews, the observations, and the surveys. I also discuss the limitations of the research, implications, recommendations for positive social change, and conclude with recommendations further research. Prior to this research, the impact of companion animals abandoned by DoD personnel has not been documented in scholarly or scientifically based literature.

Discussion of the Findings

My research findings confirm Merton's (1936) concept of TUC that directed actions may have unanticipated consequences that are generally negative. My research findings also add to the existing knowledge of how the animals abandoned by DoD that relocate affect the local shelters. My research findings underscore the need for public policy and command awareness confirming Anderson's work (1985) that a substantial

number of DoD personnel leave their companion animals behind when they are relocated or deployed.

I used the descriptive, qualitative case study method because it allowed me to use emergently coded data to produce a final descriptive narrative of the themes that connect the key factors and research objectives of the study (McNabb, 2008). By being descriptive, my research offers a realistic and accurate picture of the relationship between the animals abandoned by DoD personnel and the local animal shelters. The key factors of monetary cost, shelter personnel workload and stress, and quality of life of animals in the shelter were relevant in depicting the relationship between the animals abandoned by DoD personnel and the local shelters.

Impacts

The annual cost per animal varied between the two shelters, but the influx of the additional animals abandoned by DoD personnel forced the expenditures of additional funding. Both directors stated that more animals equaled more money needed for electricity, water, and animal food. The collected data reflects that the impact on the shelter personnel was felt most by those personnel who worked in the shelter during the summer season when DoD personnel relocation is at a peak. The shelter personnel and directors provided insight on how the shelter animals are impacted by the increase in intake numbers that result in DoD personnel abandoning their companion animals.

Limitations of the Study

The conclusions of my research are directly attributed to only one DoD installation and two associated local animal shelters in the contiguous United States. The

data are triangulated because the results of the research are based on four different sources of data: the document reviews, survey, observations, and interviews. The personnel who left the shelter because of related stress or euthanization issues could not be contacted, and their insight could not be included in the research data, preventing additional understanding. My role as the researcher and my biases are possible limitations to the research, but I believe that I successfully reduced my biases by maintaining an open outlook and by actively seeking direction from my committee members.

Recommendations for Future Research

In this study, I established that local shelters are negatively impacted by animals abandoned by DoD personnel. However, pet ownership has a positive impact on children, creates a constructive family environment, and provides a chance for children to nurture and love unconditionally (Daly & Morton, 2006). Research that compares pet owning with non-pet-owning DoD families should be considered for future researchers to examine the benefit of keeping a companion animal. Children turn to pets for safe haven and see them as family members (Kurdek, 2009); a study examining bereavement of DoD children if the companion animal is left behind because of relocation should be considered for research.

Expanding the study to overseas locations such as Hawaii or Germany where DoD personnel are stationed would provide insight into the relationship between animal shelters run by foreign countries and animals abandoned by DoD personnel who are faced with paying for airfare to take the animals with them to their next duty station. Future studies should include the political and cultural ramifications in countries where

companion pets are seen as family members (White, 2009) and not property that can be disposed of at will. The cost in monetary savings and decrease in the euthanization rates of puppies and kittens if a local veterinarian offered a low cost spay/neuter program should be considered for future research using a comparative method.

Implications for Social Change

The results of my research have many implications for positive social change. While adding to the literature on the relationship between the animals abandoned by DoD personnel and managerial and logistical (including financial) operations of local animal shelters, my findings could be used to reduce the number of animals by designing new public policy at the installation command level to

1. Assist DoD animal owners with relocation costs, allowing companion animals to stay with their families which will positively affect the DoD family members (Daly & Morton, 2006)
2. Lessen the monetary costs of caring for abandoned animals by local governments and local taxpayers (Goselin et al., 2011)
3. Prevent the increased need to care for animals by shelter workers
4. Prevent the needless euthanization of healthy companion animals
5. Mandate the spaying and neutering of DoD companion animals
6. Give installation commanders policy in enforcing animal negligent during relocation
7. Mandate micro-chipping of DoD personnel owned animals during installation in-processing

8. Punish DoD companion animal owners when they illegally dump animals or leave animals behind to fend for themselves.

In addition, and in support of DoD wide level policy, installation commanders could create command awareness programs and include animal abandonment-related articles in the installation paper and outreach programs in the DoD installation schools. Installation commanders generally have a mandatory training program that includes safety on base and numerous personnel regulation classes. Commanders could include a class on animal care and effects of companion and support animal loss on spouses and child.

The potential positive social change from my findings include an increased understanding of the relationship between animals abandoned by DoD personnel and the impact local on animal shelters by DoD personnel, local governments, policy makers, installation commanders, and animal rights activists. The solution to alleviating the impact of the abandoned animals of DoD on local shelters is straight forward; achieving it is not as evident by the continual influx of animals by DoD personnel coinciding with the peak summer season of deployment. It will take an integrated response to implement or change policy and the mindset of DoD personnel. Changing policy has implications that may lead to social change. Making it easier for DoD personnel to find housing at their new installation that allows companion animals may reduce the intake rates at local shelters. Providing transportation costs for companion animals would ease the transportation costs for DoD families relocating to overseas locations, not to mention

maintaining continuity and reducing stress for families by keeping them with their companion animals. This is particularly true for those with special needs.

Public policy change and implementation may be challenging, but new policy is needed to address the issue of animal abandonment by DoD personnel. My research was designed to bring awareness to the leadership at the DoD installation level and the community level to allow for the formulation of policies and procedures that would change the behavior of DoD personnel. Change is needed at the local community level where the impact of the abandonment of companion animals is most evident. A deeper understanding by DoD personnel of the unintended consequences of how their action of abandoning their companion animal impacts the local animal shelters, the shelter personnel, and the animals themselves may force them to reconsider leaving their animal behind when they relocate. Taking their companion animal with them would ease the financial impact their animals have on the shelter and would reduce the stress on the personnel when they have to euthanize shelter animals.

Conclusion

In this descriptive, qualitative case study, I found that animals abandoned by DoD personnel at the time of relocation has a negative impact on the operations of local animal shelters. Key factors emerged from the analyses of the data and the resulting findings from the information provided by the participants of the research study who worked in the animal shelters. DoD abandoned animals are directly and negatively related to the costs to run the shelter and the stress on the personnel and managers feel, and they are positively related to the euthanization rates that directly impact the life span of animals in

the shelter. The findings presented in this study provide installation commanders, public policy makers, and community leaders an increased understanding to change policy and policy implementation, which will affect the abandonment rate of companion animals by DoD personnel.

In Chapter 5, I summarized the results of the research study, presented the findings, and provided explanation of the data. I addressed the need for future research in the area of companion animal abandonment by DoD personnel. In Chapter 5, I included the implications for social change and the importance of the role of public policy to bring about social change. My research findings contribute new knowledge and provide installation commanders and public policy makers suggestions to design sound policy that can be implemented. My research findings enhance the ability of the DoD community and the local community to work in a unified manner to reduce the abandonment rate of DoD personnel when they relocate to another duty station.

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