

August 2015

An Investigation Into Human to Dog Attachment Systems and Their Influence on the Degree of Aversion Used in Training

Shelly Volsche

University of Nevada, Las Vegas, volsche2@unlv.nevada.edu

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AN INVESTIGATION INTO HUMAN TO DOG ATTACHMENT
SYSTEMS AND THEIR INFLUENCE ON THE DEGREE OF
AVERSION USED IN TRAINING

By

Shelly Lynn Volsche

Bachelor of Arts in Psychology
University of Nevada, Las Vegas
2013

A thesis submitted in partial fulfillment
of the requirements for the

Master of Arts – Anthropology

Department of Anthropology
College of Liberal Arts
The Graduate College

University of Nevada, Las Vegas
August 2015

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We recommend the thesis prepared under our supervision by

Shelly Lynn Volsche

entitled

An Investigation into Human to Dog Attachment Systems and Their Influence on the Degree of Aversion Used in Training

is approved in partial fulfillment of the requirements for the degree of

Master of Arts - Anthropology

Department of Anthropology

Peter Gray, Ph.D., Committee Chair

Debra Martin, Ph.D., Committee Member

Levent Atici, Ph.D., Committee Member

Murray Millar, Ph.D., Graduate College Representative

Kathryn Hausbeck Korgan, Ph.D., Interim Dean of the Graduate College

May 2015

Abstract
**An Investigation into Human to Dog Attachment
Systems and Their Influence on the Degree
of Aversion Used in Training**
by

Shelly Lynn Volsche

Dr. Peter B. Gray, Examination Committee Chair
Associate Professor in Anthropology
University of Nevada, Las Vegas

The purpose of my Master's Thesis research is to determine if and what type of relationship exists between owner-to-dog attachment levels and the degree of aversion used in dog training. I also sought to determine if owner characteristics such as parental status, income, gender, and the like influenced the degree of aversion used. My primary hypothesis is that a negative correlation exists between attachment to one's dog and aversion used in training. That is, as attachment scores increase, aversion scores decrease. In addition to testing this hypothesis, I collected data to determine if there are correlations between the following: gender and aversion used in dog training; parental status and aversion used in dog training; and, socioeconomic status and aversion used in dog training.

Data collection took place via online, self-report surveys and included demographic information on owners and their dogs, assessment of owner to dog attachment levels (utilizing the Pet Attachment Life Impact Scale), and a measure of aversion used in training. The survey also included open-ended questions that provided owners with the opportunity to add ethnographic value to the data. To validate the breakdown of training philosophies, I completed a pilot survey of professional trainers in

which I asked them to classify training philosophies and assign degrees of aversion to commonly recommended methods and techniques. The results of this dog trainer survey aided in the construction of the aversion measurement tool included in the dog owner survey mentioned above.

My recruitment strategy involved multiple Internet outlets along with local canvassing. The sample consisted of 673 respondents from across the United States. Of that population, 90.1% were female and 88.0% identified as white. Additionally, 78.6% were not parents, but a large percentage of the population (65%) considered themselves their dog's parent or guardian. A weak positive correlation ($r=.217$, $p<.001$) was found between participants' attachment and the reported frequency of aversion used in training their dogs. These results run contrary to my hypothesis. This thesis discusses the interpretations of these findings, including with respect to changing human-dog interactions in the United States.

This thesis provides a window into a growing phenomenon of "pet parents," with data that could drive future research. The human-canine bond is an area of study still in development. In addition, a growing population of individuals identify as "childfree," choosing not to raise children. Many of these individuals are "parenting" their pets, instead, and the majority of the current sample seems to reflect that population. A large and growing body of research exists concerning the perspective of the dog (cognition, neuroscience, and emotion research in particular), while most data collected from the human perspective focuses on epidemiological and physiological assessments of dog ownership. Future research could focus more on the emotionality of dog ownership to uncover driving factors behind, and to improve, the choices made in care and training.

ACKNOWLEDGEMENTS

I would like to begin by thanking my committee chair and advisor, Dr. Peter Gray. If it were not for taking his course “Anthropology of Animals” as an undergraduate, I would have never discovered the subdiscipline of anthrozoology. I appreciate his guidance over the course of my graduate school and thesis experience.

I would also like to thank my committee members, Dr. Debra Martin and Dr. Levent Atici from the Department of Anthropology, and Dr. Murray Millar from the Department of Psychology. Your input has helped shape the outcome of this project in more ways than you know.

Outside of the University of Nevada, Las Vegas, I would also like to thank Dr. Cheryl Aguiar, Dr. Lori Kogan, and Dr. Monique Udell. You have inspired, guided, and assisted me in this project, each in your own, valuable ways.

I would also like to thank the Graduate & Professional Student Association and the Department of Anthropology for their funding and assistance. There are most definitely parts of this project that would have never been completed without approval of those applications.

Finally, to my friends, family, cohort, and senior students who have tolerated the late nights, random text messages, and frantic emails as I tried to navigate the processes of Internal Review Boards, prospectus drafting, funding applications, and data collection. I especially want to thank Sharon Young, who went above and beyond in helping me learn all about Google Forms and the IRB process. I sincerely appreciate your help in the beginning. A cup of coffee is not nearly enough thank you.

DEDICATION

This document is dedicated to my patient husband, Jeremy Volsche, and my two wonderful dogs, Calvin and Lucy, who have taught me so much and without whom I may never have understood enough to investigate this topic. The three of you are my inspiration.

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Chapter 1

Introduction

Human-animal interaction is a growing area of study, leading to the development of a new interdisciplinary academic field, anthrozoology. Among the ranks of anthrozoologists are psychologists, anthropologists, sociologists, veterinarians, animal behaviorists, and historians (Herzog, 2010). Anthrozoologists focus on the physiological, psychological, and ecological impacts that humans and non-human animals have upon each other by conducting research into attachment, animal welfare, animal assisted therapies, farming practices, and a myriad of other human-animal relationships.

Among these relationships, one of the oldest and arguably most interesting is the human-canine bond. Our growing interest in how dogs think, love, and communicate has spurred the creation of canine cognition labs around the world. An entire genre of popular magazines focus on dog culture, and dozens of best-selling books on topics from biographies of lives lived with dogs to popular science titles on cognition and evolution line bookstore shelves. From John Grogan's autobiography, *Marley & Me*, to Gregory Berns's *How Dogs Love Us*, part autobiography, part neuroscience textbook, it seems many cannot get enough information about dogs. "Without a dog, being one person in one space is surprisingly lonely. With a dog, there is connection" (Goldberg, 2013). These words of attachment are echoed repeatedly in books, poetry, magazine articles, and social media posts. As Temple Grandin quoted the Aborigines, "Dogs make us human" (2005).

Yet there is a disparity in how we treat our “best friend.” Dog training advice ranges from unfounded practices based on long dismissed behavioral information to the scientific application of Skinnerian learning and cutting edge ethological studies. Daily debates rage in training forums over whether dogs need to be controlled with dominance and alpha structure or if they need a consistent but benevolent hand to teach them how to make good decisions. Even as academics, behavior specialists, and veterinarians attempt to educate the general public, outdated methods persist. “Simply put, when these adversarial methods are used on my patients they become more anxious, more pathologic, and potentially more aggressive and dangerous” (Overall, 2007).

The aim of this project was to investigate the relationship between owner and pet dog, especially in terms of attachment and training. Primarily, this project attempted to determine if and to what degree human to dog attachment influences the degree of aversion used in training pet dogs. The primary working hypothesis for this project was that as attachment increases, the degree of aversion used will decrease. It was also hypothesized that gender, socioeconomic status, and parental status may play secondary roles, further influencing the degree of aversion used in training to create an intricate balance. This research has the potential to open communication between owners and trainers by initiating conversations about individual expectations within the human-dog relationship. Additionally, just as there is a range of parenting styles from excessively permissive to abusive, the same is seen in dog training. Indeed, an increased population is beginning to parent their dogs as surrogate children. This research may identify new social factors and provide additional insight into modern parenting approaches.

Chapter 2

Literature Review

Anthropology of “Pet” Dogs

When discussing a topic as nuanced as the human-canine bond, it is important to gain a cross-cultural perspective. The domestic dog was first defined as “man’s best friend” in a poem by an unknown author published in the *New-York Literary Journal* in January 1821. However, in many cultures this is not the case. One must be careful not to assume that an American perspective on dogs is shared worldwide. Rather, this attachment appears to be most prevalent in developed nations, particularly those with a salient middle class such as the United States, Japan, and many Western European nations (Serpell & Paul, 2001; Gray & Young, 2011). Henrich and his colleagues (2010) suggest that many studies on human psychology are biased toward western, educated, industrial, rich, and democratic (WEIRD) people because samples are often garnered from university student populations and local, mostly urban participants. It appears likely that this is the case for the increase in dog parenting, canine cognition, and human-canine attachment research, as well, with a particularly homogenous group of white, middle-class, heterosexual women responding to most self-report surveys on human-animal interactions (Herzog, 2007).

Despite this frequent homogeneity, there are developed and developing nations outside the scope of Henrich’s WEIRD societies that are beginning to show an increasing interest in pet dogs and animal welfare. This includes recent and growing changes in

Thailand and China from dogs as food to dogs as beloved pets and family, resulting in organizations like Thailand's Soi Dog Foundation and China's Chinese Animal Protection Network. Likewise, the opening of doggy daycares in Mexico provide a window into the stark contrast between urban Mexican pets and the unowned dog population seen in many rural areas.

Cross-cultural understanding of "pet" dogs in modern times

Before considering a cross-cultural understanding of dogs, we must define the word "pet" and view dog keeping through this lens. The Oxford Dictionaries Online defines pet as "a domestic or tamed animal or bird kept for companionship or pleasure and treated with care and affection." The key words here are "companionship" and "affection." With this definition in mind, Gray and Young (2011) set out to gather a more detailed picture of pet keeping across societies. Focusing their efforts on the eHRAF (Human Area Relations Files), they discovered that dogs are, in fact, the most commonly kept pet. However, they also found that in many societies, pet does not mean the same as defined above. Most of the dogs in their study were kept for hunting, defense, work, and waste removal. Few cultures keep dogs indoors, feed them high quality diets by western standards, or provide advanced medical care, much less consider them playmates or family members.

Interestingly, this does not mean that small scale societies do not ascribe some level of personhood to dogs. Kohn (2007) writes of an Amazonian tribe, the Runa, and their close connection with their dogs. The Runa believe that the dreams of their dogs can foretell of future hunting success or failure, as well as dangers in the jungle. Their dogs

sleep inside the home and in some cases, provide playmates for the village children; however, the treatment of Runa dogs is still far from what those in a WEIRD society would consider humane. In his ethnography, Kohn details an event in which a dog was “possessed” and bit his master. In an attempt to remove the “spirit” from the dog, the animal was pinned down on his back, his muzzle held tightly closed, and toxin dripped into the nasal opening until the dog remained still. In Runa culture, whether or not the dog survived was determined by his ability to fight off the demons.

Ethnographer and NY Times author James Suzman retells his experiences befriending a dog while studying the Ju/'hoansi Bushmen of the Kalahari Desert in Namibia (Suzman, 2014). Simply naming the dog “Dog,” Suzman describes a canine seeking food and affection, yet afraid of human interaction due to a learned history of unkind hands. Though all the dogs in the village were considered “owned,” they were certainly not treated as family members or “pets.” He paints a movie-esque picture of foreigner and dog, interacting in contrast to those around them. One day, the village children in their curiosity, burnt Dog with acid. Though Suzman sought empathy and justice for his dying friend, the Bushmen showed surprise at his attachment, and informed Suzman that children should not be punished for being curious. In the end, he cannot help but comment on the world of difference in views on human-dog relationships, despite the fact that the Ju/'hoansi claim empathy and personhood for animals. He closes by giving thanks that he is a child of the Neolithic world.

We can see, in the case of the Runa and the Ju/'hoansi, the role that subsistence stress and culture play on the interactions and expectations of animals in their world. Both of the examples stand in contrast to the idea of pampered pets with the best

veterinary care, traveling with their owners, and receiving meals that, in many cases, provide more nutrition than the Runa and Ju/'hoansi obtain for themselves, much less their dogs. Yet in both small scale and WEIRD societies, a cultural meme exists for the ascription of personhood, individual drive, and agency to non-human animals. Likewise, they both have the ability to empathize with the dogs in their presence, anthropomorphizing even slightly to consider the world from the perspective of the dog. Yet it is clear that the Runa and the Ju/'hoansi do not empathize to the extent of sympathy, as found in developed nations.

In the middle of the spectrum are those societies who do not revere dogs as an ideology, yet in which individuals exist who maintain affiliation for them. Dr. Alyssa Crittenden is an anthropologist who works closely with the Hadza, a foraging tribe of East Africa. When I queried about this egalitarian hunter-gatherer society in 2014, Crittenden acknowledged that, like most small scales societies, dogs were often treated as “just animals.” However, a particular member of the camp appeared to have an affinity for his dogs, regarding them with affection and speaking of love, even feeding them on occasion. She mentioned being aware of how the dogs were noticeably calmer around this one individual. This relationship contrasts with the more common behavior of shooing and throwing things at the non-human animals in the area, and speaks to the individual variability of human-dog relationships.

Is it possible that this could be the beginnings of a cultural meme that spreads to other Hadza, even other tribal groups within Africa? Possibly, but given the environment and high subsistence stress, not likely. However, consider a thought experiment in which the Hadza begin to find their dogs helpful in provisioning for the camp, even to the extent

that surplus is available. Perhaps, they discover that dogs are useful in acquiring larger game on a more regular basis, and accordingly, are worthy of receiving their share of the kill. This could become the basis of a pragmatic friendship, and is the premise for the “village dog” model of domestication, discussed in the next section.

Domestication of “the dog”

The origins and timeline of the domestic dog are still topics of debate in many academic circles. The most recent data suggest that humans and canids began to share space, and possibly resources, as long as 32,000 years ago (Bradshaw, 2011). The genetics and timeline of domestication are beyond the scope of this thesis, but it is valuable to note that the genetic data suggest speciation between 14,500-32,000 years ago (Thalmann et al., 2013; Freedman et al., 2014), and it is possible that the first “proto-dog” dates back even further (Bradshaw, 2011; Ovodov et al., 2011). We do know that dogs were the first domesticated animal, dating to before the agricultural revolution (Bradshaw, 2011; Hare & Woods, 2013). The important point is that humans and dogs have spent many millennia together, much longer than human relationships with any other domesticated species.

There are a variety of hypotheses for the domestication process, but they can be grouped into three primary models, as discussed and reviewed in Braude and Gladman’s 2013 paper. Each has its merits for and against the early development of a strong human-canine bond. First is the “white fang” model, made popular by Konrad Lorenz in 1952. This model proposes that early humans adopted wolf cubs as potential pets, perhaps even to help younger individuals practice alloparenting skills. While some cross-cultural data

show this pattern of pet keeping still takes place (Serpell & Paul, 2011), it is unlikely that sufficient numbers of wolves would have been adopted or bred in this manner in order to result in a new species. While it puts humans in a position of control, as is the case with most domestication events, it seems quite a leap to consider that we were so quickly able to dominate a social carnivore as successful as ancient wolves.

The “village dog” model, made popular by Coppinger and Coppinger in their 2001 book and further explored by Hare, Wobbler, and Wrangham as the “self-domestication hypothesis” (2012) suggests a two stage process in which less fearful wolves first scavenged seasonal camps and butchering sites during the Paleolithic. Upon realizing the potential benefits of having these wolves present, humans began to place further selection pressure, culling the aggressive animals in defense and raising the more social individuals as pets, guarding animals, and hunting partners. One of the challenges that Braude and Gladman (2013) raise against this model is the jump from scavenger to companion and guard. It is not a parsimonious transition, particularly since it discounts the most common reason for domesticating animals: food. While this is true, it does resolve the issue of human dominance by suggesting a mutualistic relationship, similar to what we see in many human-dog relationships today.

The third model is Braude and Gladman’s (2013) suggestion for allopatric evolution. In essence, they suggest that wolves may have been scavenging human camps and following human hunting parties, as suggested by the “village dog” model. The additional and most important step in their model broadens the transition by suggesting that dogs were just as likely to become food as companions. It would not be until these proto-dogs proved their value as guards that the final transition to companion would take

place. The acknowledgment of this important step makes sense, given the lingering history of the dog meat trade in Southeast Asia. If dogs were scavenging human settlements or hunter-gatherer camps, subsistence pressures may have just as likely made them food as friend.

There appears to have been a Eurasian bottleneck in early canine gene flow (Freedman et al., 2014). This data suggests that multiple domestication events likely took place for the domestic dog. If this is the case, it is plausible that the “village dog” model and Braude and Gladman’s allopatric evolution in Asia may have both occurred, simultaneously or in succession. For each domestication event, the determining factor as to whether dogs would have begun as food or hunting partner likely depended on the availability of other food sources.

Recently, the “Canine Cooperation Hypothesis” has been presented by researchers at the Wolf Science Center in Vienna, Austria (Range & Virányi, 2015). By researching the attentiveness and social cooperation of both wolves and dogs on a variety of tasks, Range and Virányi suggest that wolves are equally willing to cooperate. This is particularly the case when food motivation is available. Supposing their hypothesis is correct, it adds further support to both the “village dog” model and the “allopatric evolution” model by providing the plausibility that ancestral wolf populations may have been willing to benefit from a cooperative relationship with humans.

Each of these models has their merits, particularly since residuals of each are present in today’s world. Humans still value exotic animals as pets, in many parts of the world village dogs are viewed as pariahs, barely a step above rodents, and the dog meat trade is still alive and well. Regardless of which model of domestication one supports, an

important fact stands out. Dogs have been with humans for many millennia. It is important to keep this reality in mind when considering the novelty of pet dog keeping.

Origins of “pet” dog keeping and breeding

By 8000-10,000 years ago, it was already possible that distinct breeds of dog existed, particularly in much of Europe, Asia, Africa, and the Americas (Coppinger & Coppinger, 2001; Bradshaw, 2011). This would account for the “ancient breeds” as noted by Hare and Woods (2013). Most of these dogs were bred as herders, guarders, and hunting partners. Many of these original breeds still exist and continue to work as they did thousands of years ago (Coppinger & Coppinger, 2001).

There is evidence that pet keeping, at least among the imperial elite, dates as far back as the second century, with Han emperor Ling (Schaffer, 2009). King Charles II was so enamored with dogs that a breed of spaniel holds his name, and the seventeenth century Japanese shogun, Tsunayoshi, made it illegal to speak ill of, or impolitely to, dogs in his presence (2009). Though it may seem that keeping companion dogs as pets is a new phenomenon, evidence suggests that the practice had already begun thousands of years ago among the higher social classes, particularly the elite.

Advancing to 300-500 years ago, most dog breeds have succumbed to selective pressures from humans resulting in a wide range of shapes, sizes, behavioral conformations, and coat colorings (Coppinger & Coppinger, 2001). While early dogs were selected primarily by and for their abilities to successfully guard or herd livestock, industrialization and human awareness of fashion began to influence how and why we bred certain dogs. This spurred the growth of dogs as status symbols, from standard

poodles in nineteenth century London and Paris to Chihuahuas in modern day Los Angeles.

Human influences on dog breeding have not always been positive for the dogs, however. The most current reasons against purebred dogs have their roots in pet overpopulation and the American spay and neuter campaign, yet, data suggest that human influence on the form of dogs may have dire consequences on function and behavior. In a 2013 paper, McGreevy et al. (a team that included James Serpell), found an association between head shape and body size and behavior in canines, particularly those associated with anxiety and aggressive displays. This association suggests that due to reduced size and the rotation of the brain within the brain case, smaller bodied and/or brachiocephalic dogs are more likely to suffer from Napoleon Syndrome (defined in human psychology by behavioral overcompensation for small stature).

Dogs in many societies have now come in from the land and share the home (Schaffer, 2009; Bradshaw, 2011; Coppinger & Coppinger, 2001). This has resulted in the rise of a new industry focused on better food, veterinary care, toys, bedding, and clothing that rivals the human infant market (Schaffer, 2009). . The American Pet Products Association (2014) estimates that pet owners will spend \$58.51 billion on their pets in 2014, with nearly half of that spent on the over 80 million dogs in U.S. homes. With world-wide pet keeping on the rise, researchers are attempting to understand the mechanics that drive this trend.

Current research

The theory that dogs may have affected our own evolution and self-domestication process (Hare & Woods, 2013) provides further evidence for the uniqueness of the human-canine bond. Did we, in fact, affect change on the aggressive behavior of dogs, while at the same time, learning to be a less aggressive species ourselves? In canine cognition labs world-wide, researchers attempt to unlock the secrets behind the communication systems, emotional attachments, and cognitive abilities that drive dogs to be “man’s best friend.”

An understanding of dogs’ ability to display empathy to humans is one result of this revolution in human-canine research. The contagious yawn is thoroughly documented in humans and is now considered behavioral evidence of empathy (Campbell & de Waal, 2011). Expanding on the primate literature, many researchers have begun to investigate the contagious yawn in human-dog relationships. As evidence for cross-species empathy, Madsen and Persson (2012) investigated the contagious yawn in dogs. Older dogs were found to display the contagious yawn in response to human yawning more frequently than younger dogs. Additionally, more dogs responded to their owner’s yawn than to that of an unknown female experimenter. These results suggest that responses were influenced by the age of a dog, as well as its emotional closeness with the yawner. Custance and Mayer (2012) showed that dogs responded to human distress with what appear to be attempts at comfort. When owners and experimenters alike pretended to cry in the presence of a dog, 15 out of 17 dogs displayed empathic like signals including approaching, whimpering, licking, and pawing at the actor. Of the two who did not approach, one displayed a play bow, a signal known in canine behavior as a stress

relieving signal or attempt to reduce tension (Rugaas, 2006). It is possible that this dog's play signal was an attempt to distract the person or redirect them into more pleasant behavior.

Dogs have also evolved to pay close attention to our signals and respond by, seemingly, reading our minds. Brian Hare and Vanessa Woods (2013) provide detailed accounts of research completed regarding dogs' ability to follow human pointing and gaze gestures, often keying in on the slightest changes in our behavior. Even when compared to chimpanzees and human infants, they found that dogs are more capable of understanding and responding to subtle shifts in human body language. This becomes less of a surprise once one understands that dogs have developed a unique, second socialization period in which they are keenly sensitive to human body language, environments, and contact. In essence, they have evolved a special developmental stage to allow them to adapt to us (Bradshaw, 2011).

In addition to the ability to read our body language, Fugazza and Miklósi (2013) found that dogs were capable of learning by imitating humans. After observing a human demonstrator completing a task, dogs were taken out of the room for predetermined periods to allow latent learning to occur. Upon returning to the experimental environment, the human spoke a single phrase, "do it" and then gestured the dog to the environment. In 90.28% of the total trials ($n = 130$), dogs successfully copied the last behavior they observed the human demonstrator complete. Not only was this evidence of cross-species imitation, but it showed just how attuned dogs are to human behavior.

In fact, one could argue that dogs are more like us, and we them, than once thought. Biochemical and neurological research is beginning to suggest that the process

of emotion building and experiential learning in humans and dogs is extremely similar. Patricia B. McConnell (2006) conducted an extensive review of literature spanning the mechanisms behind the primary emotions – love, anger, fear, and joy – providing evidence for the neurological and behavioral similarities in how these emotions are expressed. Also, Gregory S. Berns and his team (2012) conducted the first functional magnetic resonance imaging (fMRI) on two fully awake, unrestrained canines, showing that the caudate nucleus, a key structure in the role of learning and positive emotion building, is in fact at play in canine learning, just as it is in human learning.

In December 2013, Berns and his team published a second study with a total of 13 dogs, showing replicability and heterogeneity of the initial results. To add to these data, Berns discusses in his book preliminary, unpublished data that canine cortical activity supports the likelihood for a canine theory of mind. Berns states, “The evidence continues to accumulate that not only are dogs sensitive to where humans’ attention is directed, but dogs are also sensitive to the social context. They know when it is appropriate to attend to their human’s attention...they have a *theory of mind*” (Berns, 2013, pg. 173). Their work to map the canine brain continues today as an increasing number of dogs are trained to be fMRI “certified.”

Cross-species attachment

Simply sharing cognitive abilities, emotional development, and behavioral traits does not necessarily result in a close bond. If so, canines would not be so unique in the animal world, and humans would maintain attachments to a wide variety of species. Because of this, research is being conducted specifically on the dynamics of attachment

from both the human and dog's perspective. In 2013, Steiner et al. conducted a survey of pet owners to determine attachment levels. They found that many dog owners have begun to apply traditional parenting strategies to dogs within the home. This included a difference between "parent" and "stepparent" investment of time and resources that echoes the human parenting literature. In spite of the altruistic nature of pet keeping, an increased number of Americans are sharing their homes with dogs and investing in quality foods, veterinary care, and comforts that are on par with those provided to human children.

Data suggest that this attachment is not one sided. In 2013, Horn, Huber, and Range found that canines performed similarly to young children in the Ainsworth Strange Situation Test (ASST). Though this was not the first time the ASST had been performed successfully with dogs, this study added an important aspect to the results. It was the first time that dogs had been shown to hold stronger attachment to their specific bonded owners, as opposed to a generic human presence. In essence, the dogs' attachment behaviors mirrored the parent-child bond first studied by Ainsworth in 1969. Additionally, Mongillo et al. (2013) found that dogs' attachments towards their humans deepen with age and length of relationship. Essentially, the younger a dog is when brought home and the longer the dog is with his or her human, the stronger the attachment behavior. Similar to humans who seek comfort and security as they age, elderly dogs display increased stress behaviors and accompanying rises in salivary cortisol levels when separated from their owners. It is becoming clear that many dogs are as attached to humans as their humans are to them.

Kaminski, Pitsch, and Tomasello (2012) found that dogs know when they are being watched, can determine gaze direction, and are more likely to steal food when the human is not looking. After a series of trials, Kaminski and her team found that dogs only steal food in a dark room when a light is not shining on the food. In contrast, when the food was in the dark but the human was lit, the dogs were more likely to risk the behavior. This suggests that it is not the presence of the human, but whether or not the dog feels the human can see them that determines the safety of stealing. This is consistent with data reported by Hare and Woods (2013) in which dogs were more likely to steal when the human either left the room or turned their back to the dog. This resembles the classic Norman Rockwell scenario of a child checking for the presence of their parents before sneaking from the cookie jar or candy dish.

In contrast to sneaking food without being caught, dogs will also seek human assistance in obtaining food from an unsolvable puzzle task. Miklósi, Pongrácz, Lakatos, Topál, and Csányi (2005) found that 85 percent of dogs in their trials displayed gaze alternation between their bonded human and the food in an unsolvable puzzle task. This has been interpreted as a request for assistance in obtaining the food, which any dog owner will tell you is a parsimonious conclusion to make.

The attachment in human-canine relationships is not always so parental. Some studies have begun to suggest that for some subcultures dogs are still mere status symbols. Though more research needs to be done, it has been suggested that an owner's preference for particular breeds may be a reflection of that individual's personality (Egan & MacKenzie, 2012). Likewise, at risk youth report specific dog breeds and behaviors can improve one's status amongst peer groups (Maher & Pierpoint, 2011). Even seemingly

average, middle class persons show acculturation in their perception of breeds and the behavior and potential danger associated with those breeds (Clarke, Cooper, and Mills, 2013), with experience and contact improving the overall perception of dogs within a specific breed group. Yet other groups still view dogs as tools meant to provide a function for humans, including the guarding of livestock and home (Coppinger & Coppinger, 2001) while other cultures, such as parts of China, continue to make headlines for selling dogs in the meat market (Dicker, 2013).

It is also important to note that not all humans have the same level of comprehension when it comes to dogs' internal lives or capabilities. From showing empathy to keying on body language, from the secure base effect to stealing in the dark, dogs display a myriad of behaviors that feed the human tendency to anthropomorphize. This tendency can lead to its own misunderstandings in which behavior problems are excused, undiagnosed, or simply dismissed (McConnell, 2006). In *For the Love of a Dog*, Patricia McConnell, a well-known canine ethologist and aggression specialist, notes that failure to understand that a dog is still a dog, and hence, its own unique, beautiful animal, can result in the dog's friendly "handshake" turning into a serious biting issue.

Are owner interactions gendered?

Psychometric surveys among owners, mixed with behavioral observations of interactions with known and unknown dogs, have been employed to assess the human side of attachment. This is beginning to open into a deeper investigation of gendered interactions with dogs, as well. In 2014, Mitchell and Sinkhorn attempted to investigate why people laugh during dog-human play interactions. The expectation was that this was

a form of communication to the dog. However, they found that women laughed significantly more when trying to play with a known dog, especially when being observed by male investigators. Ultimately, the investigators came to the conclusion that women were more embarrassed by failed attempts to play or inappropriate behaviors on behalf of their dog. They also suggest that the cultural acceptance of overall female expressiveness in the U.S., to the extent that men are often viewed as unemotional, likely played a role in the more vocal female expression.

Prato-Previde, Fallani, and Valsecchi (2006) also found differences in the behaviors of men and women when interacting with known dogs. They studied the behavior of owners while observing stress responses in their bonded canines during a revised Ainsworth Strange Situation Test (ASST). Before beginning the experiments, owners were asked to complete the CENSHARE Pet Attachment Survey to assess their reported attachment to their dog. While the strength of the attachment showed no variation between men and women, there were interesting differences in the behavioral responses to their dogs' stress. Overall, women were found to speak to their dogs more, using "a higher overall frequency of diminutives, endearments and pet names (2006:69)," as well as using baby-talk with repetitions and rhetorical questions (commonly known as motherese). The men spoke less, and more frequently used instructive language.

Additional studies on gender and human-canine interactions have investigated the role of oxytocin in bonding behavior. Miller et al. (2009) sought to determine if and how gender influenced oxytocin levels when bonded owners interacted with their dogs. During the initial interview, a Lexington Attachment to Pets Scale was completed by each owner. There was no significant difference found in the reported attachment

between genders. While this would lead one to expect a lack of difference in oxytocin response, that was not the case. Surprisingly, while women's oxytocin levels increased after interacting with their dogs, overall, men's oxytocin levels decreased. In contemplating the reasons for this unexpected result, we can refer back to Prato-Previde, Fallani, and Valsecchi's (2006) gendered study using the ASST. They found that women had a more difficult time leaving the test room due to increased stress and attachment behavior on the part of their dogs.

In 2007, Herzog attempted a meta-analysis of gender within human-animal research. While the data on gender differences in attachment were minimal, he explains that this may have been a by-product of the analysis. Specifically, most attachment studies did not collect sufficient data to accurately determine whether gender had a significant effect on attachment. Likewise, this analysis did not look solely at pet dogs, and it is quite possible that attachment differences to dogs alone may be present. However, the resulting lack of gendered difference in pet dog attachment has been found repeatedly in research seeking attached owner participation (e.g., Prato-Previde, Fallani, & Valsecchi, 2006; Miller et al., 2009), suggesting that once attachment is obtained, gender variation becomes minimal. It may only be that the display of attachment varies with context, while the actual attachment formed by men and women is the same.

This idea is further supported by Stoeckel, Palley, Gollub, Niemi, and Evins' (2014) recent magnetic resonance imaging (MRI) study comparing mothers' attachments to their child and their dog. Comparing fMRI data on maternal responses to images of own dog, other dog, own child, and other child, the authors found that neural signaling was similar in the own dog and own child conditions. However, when comparing the

activity of specific brain regions, it was clear that the neurological and hormonal formation of these attachments were different. Regions responsible for mother-child bonding suggest a deep, phylogenetic adaptation. In contrast, the regions responsible for mother-“furchild” bonding suggest a learned relationship, reinforced by dopamine and oxytocin. In essence, the mechanisms maintaining these two bonds, with their deep formative differences, were indeed incredibly similar. This suggests that when women speak of “mothering” their dogs, they may very well be doing just that.

Unfortunately, the comparable literature on men is still lacking. Given the facultative nature of human paternal behavior, in particular, we could hypothesize that both the own child and own dog bonds would form in similar ways. Hrdy (2009) discusses the concept of paternity uncertainty and its role in human paternal behavior. The inability to be absolutely certain of one’s paternity may suggest that paternal behavior is learned, even when it involves one’s own offspring. Contrary to maternal bonding, which begins while the infant is in utero via a host of hormonal processes, paternal bonding has no immediate biological impetus upon which to grow. While it is true that a host of psychobiological changes take place in invested fathers (Gettler, 2014), it is possible these changes take place after paternal behavior is reinforced. Perhaps we would find the fMRI reflects this with even more similarities between the own dog and own child conditions.

Additional data from Herzog’s (2007) meta-analysis do show trends in gender variation in other forms of interaction with pet species. These include a higher proportion of men involved in animal abuse and bestiality and more women involved in animal protection and hoarding (commonly viewed as a maladaptive extension of animal

protection ideals). Although these data are certainly relevant, it is important to note that this is a wider sample population, reaching beyond the scope of bonded pet dog owners.

Training Philosophies

It could be argued that there are as many training philosophies available to American dog owners as there are trainers. One need only peruse the websites of training companies or forums to realize the plethora of methods and techniques. From forceful control to “force free” training, there is something for every attachment level, pocket book, and paradigm of what a dog should “be.” Ultimately, most techniques and methods can be categorized into one of six primary philosophies (seven when counting the use of medications). It is important to note, however, that many trainers, regardless of their core ideology, may often borrow techniques from another philosophy resulting in frequent overlap in actual practice.

Due to this wide gradation of training techniques taught to today’s pet dog owner, it was ultimately advised to survey dog owners regarding specific techniques as opposed to philosophies or categories. However, the paradigm of what a dog “is” remains at the core of which techniques trainers are most likely to teach. While I am attempting to define useable descriptions in the literature review of this thesis, I also completed a pilot survey of educated, professional trainers before using these categories or techniques in my final survey of dog owners. By doing so, I was able to verify and validate the degree of aversion in specific training techniques.

For purposes of discussion, I have described the six philosophies in the following paragraphs. Also see Table 1 (page 26) for a condensed comparison.

Traditional training

Built on the Koehler method developed during World War II, traditional training generally views the dog as a tool for work and protection. The dog is expected to obey and please his owner, regardless of environmental stimuli or behavioral health. Common methods and skills applied tend to be physical and anthropocentric, with the human having complete control, though many of these trainers have progressed towards offering verbal praise once the dog has improved his responses. In recent decades, owners seem to be looking for more dog friendly training methods that are easier for the average owner to use, and traditional trainers have adapted. Even the Monks of New Skete, popular for their book *How to be Your Dog's Best Friend*, began to remove extreme physical methods from their teachings. None the less, at the core of this philosophy is a belief that dogs should always obey and respect the owner's wishes.

Dominance theory

Dominance theory has made a significant comeback in popularity due in large part to television trainers in both the United States and Canada. At the core of this philosophy, dogs are seen as wolves, following a strict pack hierarchy (Milan and Peltier, 2006). Unfortunately, significant ethological and cognitive research has proven that dogs are not wolves (Coppinger and Coppinger, 2001; Bradshaw, 2011; Hare and Woods, 2013). Key phrases among trainers who teach this philosophy include “calm submission”

and “calm assertive.” They encourage owners to never back down from their dog, asserting human dominance in the home, even using physical contact to establish this status (mimicking bites, foot taps to the groin, or rolling the dog on his side or back). Dogs have spent thousands of years developing ritualized aggression and body language, known as calming signals, in order to avoid such physical conflict with humans and conspecifics (Hare and Woods, 2013; Rugaas, 2006). However, given fight or flight, ignoring these signals can result in owner directed aggressive behavior which feeds the cycle.

Lure-reward training

Lure-reward training was first defined and used by Dr. Ian Dunbar, a veterinary behaviorist who designed and taught the first ever off-leash puppy class (Dunbar, 1996). In general, lure-reward trainers believe the dog is a pet who needs to be taught the rules and offered guidance. Use of food treats to “lure” the dog into position and reward good behavior are the primary mechanical skills of this philosophy. Corrections applied are usually verbal (“un-uh” or “ack”) and do not generally involve physical contact, although molding (hands on guidance, such as a hand pressing on the rump of a dog who did not sit) may be applied when an environment is too distracting for the dog to focus on a food lure. Shaken soda cans filled with pennies and spray bottles filled with water are often used as deterrents or to interrupt inappropriate behavior by startling the dog. While certainly less aversive than traditional methods, lure-reward training still sees the dog as a companion animal who should obey.

Humane hierarchy training

Since 1991, the Certification Council for Professional Dog Trainers (CCPDT) has attempted to guide trainers on how to more scientifically apply learning theory, canine ethology, human instruction skills, and animal husbandry while educating dog owners on how to successfully teach and live with a dog. As taught in certification prep classes and within the many books on the candidate reading list, dogs are autonomous, aware beings who need guidance and education to function effectively in the human world (McConnell, 2002; CCPDT, 2009). Accordingly, the CCPDT adopted the position statements, “Application of the Humane Hierarchy” (2009) and “Dog Training and Behavior Intervention Practices” (2011) as guidelines for trainers when faced with training daily skills or working with behavior challenges. As part of this training philosophy, proper health and management of the dog’s behavior are key. A dog can only learn when in good health, receiving proper nutrition, and set up to succeed by preventing mistakes. After management is in place, treats, play, praise, or freedom are used to reward good behavior and teach the dog how to make proper choices in the future. Corrections may be used as a last resort when all other applicable options have been exhausted. Frequently, humane hierarchy trainers are referred to as “balanced” trainers because they understand that the dog is an autonomous being with whom humans share their life, while at the same time, being aware that feedback is necessary and sometimes must come in a mildly aversive form.

Clicker training

Clicker training was developed from methods used in training marine mammals to perform husbandry tasks or for entertainment (Pryor, 2009). Though there are exceptions to any rule, generally speaking, clicker trainers view the dog as a neutral learner operating upon its world to obtain resources. Based upon Skinnerian behaviorism, markers (box clickers or words such as “yes”) provide reinforcers, resulting in the action being repeated. By playing a numbers game of reinforcement rates, clicker trainers shape a dog to live successfully in the modern human world (Pryor, 2009; Alexander, 2003). Many clicker trainers refer to themselves as “force free” because they do not train using aversives, some going so far as to avoid feedback such as “no” or “try again.” Instead, the dog is encouraged to take the lead in training sessions by “offering behaviors.”

Anthropomorphism

The ascription of human cognitive abilities and emotions to non-human animals is called anthropomorphism (Herzog, 2010; Bradshaw, 2011). The dog, often seen as a furry human, receives little to no formal training, and family members may argue that the dog is pampered. In extreme cases, severe aggression or house soiling, both potential health concerns, can be ignored by an owner who feels their dog is misunderstood. Owners attempt to logically reason with their dogs, negotiating with words for acceptable behavior. Owners may also believe their dog is capable of guilt and premeditation, exacerbating behavior problems with emotional reactions as opposed to educated action to help their dog succeed. Alexandra Horowitz has researched extensively on the dog’s ability to premeditate, and hence, feel guilt. However, to date, she has not found evidence

to support this anthropomorphic claim (Horowitz, 2009). Hecht, Miklósi, and Gácsi (2012) further explored this misunderstanding between owner and dog, finding that owners' perceptions of guilt within their dog had no direct correlation with the actual obedience or disobedience of their canine companion.

It is easy to see that while some key components of the defined training methods are distinct, there is also significant overlap. As previously mentioned, the reality for most trainers and dog owners is a blend of methods, with gradation and mixing of techniques. It is for this reason that I ran a pilot study in which professional trainers validated category assignment and degrees of aversion for a series of common training techniques. I then offered dog owners the opportunity to rate the frequency with which they use specific techniques ("0=never" to "5=daily") in order to generate a training aversion score.

Table 1: Training Philosophies

This table provides a condensed list of the six primary training philosophies including their theory of dog, an example trainer, and common methods.

Training Philosophy	Theory of Dog	Famous Trainer	Common Methods
Traditional Training	Dog is a tool or work animal	Monks of New Skete	Collar corrections; Forced downs; scruff shakes (The Monks of New Skete, 2002).
Dominance Theory	Dog is a wolf seeking dominance	Cesar Milan	Alpha rolls; stand offs; mimicking bites with hand (Milan & Peltier, 2006).
Lure-Reward Training	Dog is a pet who must be taught	Ian Dunbar	Treat lures for positioning; verbal corrections; squirt bottles (Dunbar, 1996).
Humane Hierarchy Training	Dog is an autonomous being needing guidance	Patricia McConnell	Environmental and health management; Life rewards (food, play, freedom) for good choices (McConnell, 2002).
Clicker Training	Dog is a neutral learner operating in environment	Karen Pryor	Shaping by rewarding appropriate behaviors; No wrong answers (Pryor, 2009).
Anthropomorphism	Dog is a furry human		Assigning human emotions, motives, and reasoning to the dog (McConnell, 2006).

Medications

Just as with human mental health, medications have become increasingly common when working with behavior problems among animals. This is particularly apparent in the pet dog world. In her 2014 book *Animal Madness*, Laurel Braitman details the history of animal mental illness and the rise of medication use, particular for disorders based in anxiety, aggression, and impulse control. While it may be tempting to categorize the use of medications as a separate training philosophy, it is wise to be aware that, as with human psychology, medications are often viewed as a stopgap until behavior modification techniques can be successfully introduced. Karen Overall, DVM (1997) specifies the importance of identifying if and when to properly wean small animals from psychotropic medications.

Aversion in training

Psychologists have identified four parenting styles: authoritarian (high control and low warmth), authoritative (high control and high warmth), permissive (low control and high warmth), and indifferent or neglectful (low control and low warmth) (Baumrind, 1971 as cited in Wolfradt, Hempel, & Miles, 2002). These parenting styles have been studied in connection with childhood and adolescent outcomes, consistently finding authoritarian parenting associated with negative outcomes such as depersonalization and anxiety (Wolfradt, Hempel, & Miles, 2002) and increased drug abuse (Calafat, García, Juan, Becoña, & Fernández-Hermida, 2014). Authoritative parenting has been associated with more positive outcomes such as higher self-esteem and life-satisfaction (Milevsky, Schlecter, Netter, & Keehn, 2006) and improved school achievement (Spera, 2005).

There are many similarities between dog training techniques and human parenting styles. Authoritarian parenting, marked by discipline, physical control, and a lack of warm interactions, can easily be compared to traditional training and dominance techniques (Table 2). Similarly, lure-reward, humane hierarchy, and clicker training mimic authoritative parenting styles, focusing on teaching the dog to make good decisions from the beginning, while providing guidance, boundaries, and warmth. Permissive and uninvolved parenting styles are mimicked in the anthropomorphic owner who is either indulgent, offering little structure to the dog, or indifferent, expecting the dog to be autonomous. In essence, this is the owner/parent who never says “no” to the individual in their care. These owners expect little more than love from their dogs, much like the excessively lenient parent.

It is important to take a moment to discuss corporal punishment. While it is not identified as a parenting style, nor does it connect cleanly to a specific training philosophy, corporal punishment is present in both parent-child and human-canine

Table 2: Parenting vs. Training

Comparison of human parenting styles and dog training methods.

Human Parenting Style*	Dog Training Method	Hallmarks of Methods
Authoritarian Parenting	Dominance Theory Traditional Training	Focus on control; physical correction and punishment; expectations that learner should “know better.”
Authoritative Parenting	Humane Hierarchy Lure Reward Clicker Training	Focus on guidance; management of environment to mitigate behavior; reward of “good choices;” expectations that parent/owner should teach and guide towards proper choices.
Permissive Parenting	Anthropomorphism	Focus on lack of control; rationalizing beyond learner’s age/capacity; expectations that love will result in proper choices.
Uninvolved/Indifferent Parenting	Anthropomorphism	Focus on autonomy; neither guidance nor control; expectations of “pre-programming”

Note: A sometimes interesting distinction between uninvolved parenting and anthropomorphism is the desire for reciprocation of emotion in the case of anthropomorphism.

*Parenting styles as listed in Wolfradt, Hempel, & Miles, 2002

relationships. Straus and Stewart (1999) defined corporal punishment as “the use of physical force with the intention of causing a child to experience pain, but not injury, for the purpose of correction or control of the child’s behavior.” This same definition could easily be expanded to include dogs, quickly blurring the line between many traditional techniques and corporal punishment. The use of corporal punishment in children has been associated with stress and depression (Turner & Finkelhor, 1996) and conduct disorders and externalized behaviors such as aggressive displays (Bender et al., 2007). Similar responses are found in dogs, with the use of physical force often resulting in a dog who either withdraws or becomes aggressive toward the owner (Overall, 2007; Fisher, 2009).

Due to the comparisons with parenting styles, as well as the extremes of advice given to pet dog owners today, it is worth noting that neither extreme (nearly abusive control nor complete lack of discipline) is suggested as a healthy training approach. On one hand, extremely physical methods and intimidation are seen as abusive and often lead to owner directed aggression (Overall, 2007). On the other, avoidance of all aversive feedback in exchange for “purely positive” training can result in a dog who does not learn to avoid dangerous or inappropriate behavior. That is to say, even positive reinforcement used to an extreme can result in negative effects (Perone, 2003).

Chapter 3

Research Questions and Hypotheses

Given the history and evolution of the human-canine bond, the recent research in attachment, canine cognition, and emotion, and the wide range of training methods being taught to the average dog owner, I feel it was time we begin to investigate how owners are teaching their dogs. This is particularly important since more Americans are “parenting” their dogs (Steiner et al., 2013).

How owners teach their dog to successfully navigate a human world could provide a window into the world of parenting styles in 21st century America. If owners who love their dogs like children are still applying physically aversive methods, could they, in turn, be more punitive with current or future children? Are the training methods used by dog owners indicative of the cultural script for educating others in our care? If so, an understanding of social pressures influencing pet dog training could provide valuable insight into similar pressures on today’s parents. Additionally, if the trend is one in which dogs are replacing children altogether, the education of owners in regards to training methods could have long term implications on shelter populations (Patronek, Glickman, Beck, McCabe, & Ecker, 1996), canine welfare, and overall improvement of the human-canine bond. While the current project does not propose to vet out whether dogs are replacing children, it could produce new insights that may drive future research.

Primary question: Is there a relationship between owner to dog attachment level and degree of aversion in training?

The primary goal of this research was to determine the presence or absence of a relationship between human to dog attachment level and degree of aversion used in training pet dogs. I hypothesized that as attachment increases, the reported degree of aversion used will decrease. It seems likely that owners who are more attached to their dogs will report less frequent use of potentially harmful or fear inducing methods such as collar corrections, electronic stimulation collars, or alpha rolls to train their dogs.

Discussions on this topic with certified behavior and training professionals, including Certified Professional Dog Trainers (CPDT-KAs), Certified Dog Behavior Consultants (CDBC), Certified Applied Animal Behaviorists (CAABs), and PhD or DVM level behavior specialists, as well as social psychologists involved in human-animal research at other universities, suggested a disconnect between the anticipated results and the preferred outcome. Although it seems intuitive that attachment would negatively correlate with degree of aversion in training, the hopeful responses of my cohorts in the dog world seem to present the desire that there will be no significant relationship. One dog trainer told me, “I think most dog owners think they love their dogs. Everyone defines ‘love’ differently.” A social psychologist who specializes in educating trainers stated, “Most dog owners don’t really know anything about dog training; the education just isn’t ubiquitous enough. They continue to do what they have always done until someone shows them a better way.” I believe that this is a telling trend, indicating that dog professionals are not yet ready to accept the possibility that owners who report being attached to their dogs would willingly participate in physically aversive training

methods that could result in increased behavior problems, particularly with inconsistent applications (Schalke, Stichnith, Ott, & Jones-Baade, 2006; Rooney & Cowan, 2011). I feel that the results of this survey could spawn future research that asks why I achieved the results I did.

Secondary question 1: Does gender influence the use of aversion in training?

While my primary question is one of attachment, I also intended to collect sufficient demographic data on the owners, home environment, socio-economic status, and lifestyle of the survey participants that I may look for additional correlations with aversions in training. In particular, I sought to determine if there is a relationship between gender and the degree of aversion being used in training.

My experience as a dog training and behavior professional suggests there may, in fact, be a story within this data. Most notably, my personal observations over hundreds of clients, combined with those cases on which I have consulted or provided hands on assistance, suggest that heterosexual males tend to ascribe more to control focused methods seen within dominance theory or traditional training. These methods are inherently more aversive than other, guidance focused methods. In contrast, women of all orientations tend to ascribe more to “force free” methods set forth in the humane hierarchy or clicker training philosophies.

This would be consistent with the human and primate research in which females tend to provide direct care such as holding, comforting, and feeding, and males lean towards indirect care such as provisioning and protection (de Waal, 2005; Gray & Anderson, 2010). While neither strategy necessarily suggests specific levels of

attachment, “mom” and “dad” may differ in how they interact with their “offspring.” Interestingly, when attempting to find demographics on the use of corporal punishment in human parenting, contrasting data existed as to whether mothers or fathers were more likely to rely on these methods. Drawing the comparison between parenting human children and raising canine “children” could provide further insight, as an individual may be more likely to acknowledge the use of these methods with their dog than their children. Yet, many of the rationales for use of this behavior with each species is the same (Straus & Stewart, 1999; Lansford et al., 2010).

Secondary question 2: Does parental status influence the use of aversion in training?

I hypothesized that a trend towards lure-reward and traditional training exists in homes with children. If this is the case, additional research could answer the question as to whether these methods are used in an attempt to control problem behavior, or, as I suspect is more likely, it may be due to a lack of owner education on the potential fall out of aversive methods. Documented examples include owner directed aggression that could be counter-productive to the intentions of the parents to provide security and joy for their children (Arhant, Bubna-Littitz, Bartels, Futschik, & Troxler, 2010). If there is a relationship in this data, it could provide a future dissertation question.

Secondary question 3: Does socioeconomic status influence the use of aversion in training?

Finally, reviewing the demographic data against the training aversion score may produce a picture of socio-economic status relating to dog ownership. As stated

previously, there are data to suggest that specific dog breeds are used more as status symbols than companions (Egan & MacKenzie, 2012; Maher & Pierpoint, 2011) and certain training approaches may follow these social trends. Accordingly, I hypothesized that as income increases, the degree of aversion decreases.

Chapter 4

Methods

This research utilized an anonymous survey format, delivered via Internet form. Approval from the University of Nevada, Las Vegas' IRB was obtained before any data were collected or stored. In both the Dog Trainer Survey and Dog Owner Survey, participants were required to acknowledge that they were at least 18 years of age, lived in the United States, and consented to participate before any questions were delivered. In the case of the Dog Trainer Survey, all participants were also asked to verify that they were a working professional in a training or behavior related industry. All data were stored on a password protected Google Drive to further protect the participants' anonymity. The only potentially identifying data collected consisted of email addresses provided at the end of the Dog Owner Survey. Inclusion of this information was optional, and participants were asked to select "yes" or "no" before providing their email address. Email addresses were then used to select individuals to be awarded available incentives (1 of 5 - \$50 Amazon Gift Cards).

Dog Trainer Survey

Recruitment

Before launching the Dog Owner Survey, it was important to obtain consensus from professional dog trainers on the degree of aversion ascribed to individual training techniques. In this vein, I completed a pilot survey of dog training and behavior

professionals. The survey was provided online via GoogleForms and made available for approximately five weeks. Recruitment took place via industry specific Yahoo-listservs, Facebook feeds, and Facebook groups.

Survey

The survey consisted of two primary questions. The first question was a list of “theories of dog” containing statements such as: “the dog is a tool for protection;” “the dog is an autonomous being whose species-specific needs should be considered;” “the dog should obey and respect his owner at all times;” and “the dog is a behaving animal operating upon its environment.” Participants assigned categories (i.e., clicker training; traditional training; dominance theory) to these statements based upon their experience and knowledge of the field.

The second question consisted of an extensive list of mechanical methods, industry jargon, responses, recommendations, and tools commonly used in dog training and behavior practices. This list included statements such as: “use a box clicker or marker word to signal the delivery of a treat to the dog;” “knee the dog in the chest for jumping up on people;” “grab the dog by the scruff and pinning him to the ground;” “squirt the dog in the face with a water bottle to stop barking;” “provide legal outlets for chewing;” “offer the dog a stuffed kong to provide mental stimulation;” and “allow the dog to whatever he wants at all times.” Participants were asked to assign a degree of aversion for each technique, ranging from “0 = not aversive” to “5 = abusive/extremely aversive.”

A third, optional question was offered at the end of the survey. This gave trainers an opportunity to add techniques they felt were omitted from the list. If there were a

significant number of trainers adding a particular technique, this item was added to the final list presented to dog owners. However, that did not occur, and ultimately, all questions presented on the Dog Owner Survey came from the original list. A complete copy of the survey can be found under *Appendix A*.

Analysis

The mode for each of the 75 questions were tabulated in Microsoft Excel 2013. This established the baseline degree of aversion (“0=none” to “5=aversive/abusive”) by confirming the response that was given most frequently by the responding dog trainers ($N=49$). The median was then calculated and compared with the mode to obtain a variance score that could be used to select questions with the highest degree of agreement among dog trainers. The smaller the score, the more agreement on each question. The 3 questions for each degree of aversion that had the smallest score were then used in the Dog Owner Survey (most scores were less than 0.10 points from the mode).

Additionally, two questions were selected to provide checks for random responding. They were “Provide a remote shock to the groin when the dog lifts his leg in an inappropriate location” and “Use known skills (sit, down) to prevent inappropriate behaviors.” These two questions represent the commonly accepted extremes in dog training. The first representing an excessive use of punishment and the second using management and positive reinforcement. The resulting list of techniques are referred to hereafter as “Dog Training Philosophies” to be consistent with the survey as presented to participants.

Dog Owner Survey

Recruitment

A convenience sample of dog owners was obtained via Internet recruitment. Post cards were also placed in Las Vegas area pet businesses, including veterinary hospitals, grooming shops, pet supply retailers, and with rescues with whom contact could be made. This included one location of a well-known big box retailer. Facebook advertising, post sharing, and group posts were utilized, and posts were made to Yahoo list-servs. In all cases, University of Nevada, Las Vegas' recruitment protocols concerning identification and consent were utilized.

Survey

A self-report survey was made accessible online via GoogleForms. No identifying data were collected from participants in order to provide anonymity and increase confidence in the validity of the responses given. The only exception was the optional disclosure of an email address should the participant wish to register for the Amazon gift card drawing. The survey consisted of four main parts: demographic data, the *Pet Attachment and Life Impact Scale (PALS)* (DeMarni Cromer & Barlow, 2013), the Dog Training Philosophies, and a short series of open answer questions. A complete copy of the survey can be found as *Appendix B* at the end of this prospectus.

Demographic data: Sufficient demographic data were collected to determine the presence or absence of statistical significance among my secondary research questions. These data included much of the standard information: gender, sexual orientation, age,

location (by city, state or zip code), marital or relationship status, ethnicity, household income, and education level. I also collected information on the number and ages of children in the home, type of home (apartment, house with or without a yard), and the presence of any non-canine pets.

Key data regarding the dog(s) owned were collected. These included number of dogs in the household, how and when the dog was acquired, breed or mix of breeds, reproductive status, age, and whether the dog is a certified assistance dog. While some of this information may seem unnecessary initially, developmental history and multi-dog households can often play a key factor in the training methods employed in a home in order to prevent fights, aggression to family members or strangers, and property destruction (Patronek, Glickman, Beck, McCabe, & Ecker, 1996; Overall, 2007).

PALS survey: The Pet Attachment and Life-Impact Questionnaire (PALS) is a psychometric designed to assess owner to pet attachment levels (DeMarni Cromer & Barlow, 2013). Consisting of 39 questions, the survey asks owners to agree with statements about their pet on a five point scale ranging from “1=not at all” to “5=very much.” The PALS survey scores responses on four factors: “Love,” “Regulation,” “Personal Growth,” and “Negative Impact.” Based upon an assortment of previously used assessments (Anthropomorphism Scale, CENSHARE Pet Attachment Scale, Companion Animal Bonding Scale, Lexington Attachment to Pets Scale, and The Multidimensional Scale of Perceived Social Support), the PALS has been shown to provide a clear representation of owner to pet attachment and altruistic behaviors related to pet keeping.

I obtained permission from the lead author (DeMarni Cromer, personal communication 2013) to use the PALS survey as part of my research. This included

obtaining a copy of the scoring criteria in order to be certain we scored the four factors properly for comparison to the demographic data and training aversion data. In addition, as the survey is written to encompass all pets, I was granted permission to replace the word “pet” with the word “dog” in all questions and instructions so that I can be certain to gain species specific attachment information.

Finally, the PALS survey requests that respondents answer with their “favorite or most recently obtained [dog] in mind.” Originally, it was suggested that I consider changing this in order to address multi-dog households or attachment variations between past and present dogs. However, I believed that owners will likely respond as requested in the initial survey, regardless of how we change the wording, and I would prefer to utilize the survey as designed. Ultimately, I found this to be the case. Most owners either a) answered with their favorite or most recent obtained dog or b) answered with an amalgamation of all owned dogs in mind. This was confirmed by one respondent’s comment via email that “I would never consider one dog a favorite over another, so I just answered based on how I feel about both of them.”

Dog Training Philosophies: After analyzing the Dog Trainer Survey, I obtained a list of 20 training techniques and their corresponding degree of aversion as described above. Dog owners were asked to assign a frequency to each statement to suggest how often they use that specific technique (“0=never” to “5=daily”). By totaling the responses, I calculated a weighted aversion score (“0=not aversive” to “65=extremely aversive/abusive”) by finding the mean frequency for each degree of aversion then multiplying the result by the degree of aversion (0 – 5, respectively) and calculating the final mean. At this point, I had an aversion score to compare with the owners’ PALS

results to seek out correlations between level of attachment and degree of aversion in training.

Open-ended questions: The last section of the survey presented owners with five, optional open-ended questions. The purpose of these questions was to allow owners to tell their individual story, contributing ethnographic richness to the quantitative data collected in the other sections of the survey. These questions sought to determine if there are factors affecting an owner's selected training methods that we may not have considered. Responses to these questions are considered in the discussion section in light of the results of the quantitative analysis.

Chapter 5

Results

Participants were required to confirm they were adults (age 18 and older) living in the United States who currently owned at least one dog. All data were collected via Google Forms and exported into a Microsoft Excel 2013 spreadsheet. A total of 691 respondents participated in the survey. However, of those, 18 were living outside the United States and were subsequently removed. PALS scores and aversion scores (from the answers to the Dog Training Philosophies section of the survey) were calculated for the remaining respondents ($N = 673$) and demographic data were numerically coded (e.g., for gender “1=female” and “2=male”). The data were then imported into IBM’s SPSS v22.0 for further analysis.

There were respondents from all major regions of the United States. As is often seen with human-animal research, the sample was relatively homogeneous (see Table 4 for complete demographics). There was a high proportion of females ($n = 608$ or 90.1%) and most respondents were heterosexual ($n = 593$ or 87.9%). Additionally, the majority of the respondents identified as white ($n = 594$ or 88.0%) and middle class, reporting incomes between \$36,901 and \$186,350 ($n = 404$ or 59.8%). It is also interesting to note that most respondents view themselves as their dogs’ parent ($n = 264$ or 39.1%) or guardian ($n = 175$ or 25.9%). This phenomenon and its implications are considered further during the discussion chapter.

The remainder of this chapter will consider each research question and the corresponding results of the survey.

Table 3: Demographics of Sample Population

<i>Gender</i>		
Female	608	90.1%
Male	64	9.5%
No answer	1	0.4%
<i>Sexual Orientation</i>		
Heterosexual	593	87.9%
Lesbian	18	2.7%
Gay	8	1.2%
Bisexual	20	3.0%
Asexual	2	0.3%
No answer	32	4.9%
<i>Ethnicity</i>		
White	594	88.0%
Latino	28	4.1%
Asian	14	2.1%
Native American	2	0.3%
Indian	1	0.1%
Other	18	2.7%
No answer	16	2.7%
<i>Age</i>	$\mu=56.7\pm 13.65$, $M=49$, range 18-82	
<i>Parental Status*</i>		
Children in home	144	21.4%
No children in home	529	78.6%
<i>Relationship to Dog</i>		
Parent	264	39.1%
Owner	168	24.9%
Guardian	175	25.9%
Friend	37	5.5%
Other	29	4.6%
<i>Income Bracket**</i>		
\$0-9075	4	0.6
\$9076-36,900	73	10.8
\$36,901-89,350	225	33.3
\$89,351-186,350	179	26.5
\$186,351-405,100	29	4.3
\$406,751+	6	0.9
No answer	157	23.3%

*Parental status was measured by the presence or absence of children in the home. However, most respondents specified no children overall.

**Standard tax brackets were used to determine income.

Primary question: Is there a relationship between owner to dog attachment level and degree of aversion in training?

Utilizing the scoring criteria provided by survey authors DeMarni Cromer and Barlow (2013), respondents' PALS scores were calculated for the factors "Love," "Regulation," "Personal Growth," and "Negative Impact." The "Love" score was used synonymously with attachment for the purposes of answering this research question as items for the "Love" factor were derived in whole or in part from established attachment scales such as the Lexington Pet Attachment Survey (DeMarni Cromer & Barlow, 2013). Scores from the current sample population were validated using Cronbach's alpha ($\alpha=.907$). Attachment scores ranged from 1.65 to 4.65 ($\mu=4.00 \pm 0.39$). An overall, weighted aversion score ("0=not aversive" to "65=extremely aversive/abusive") was calculated by finding the mean frequency for each degree of aversion then multiplying the result by the degree of aversion (0 – 5, respectively) and calculating the final mean. Aversion scores ranged from 4.33 to 44.75 ($\mu=16.40 \pm 5.95$). It is also worth noting that none of the respondents in this survey reported a maximum aversion score of 65.

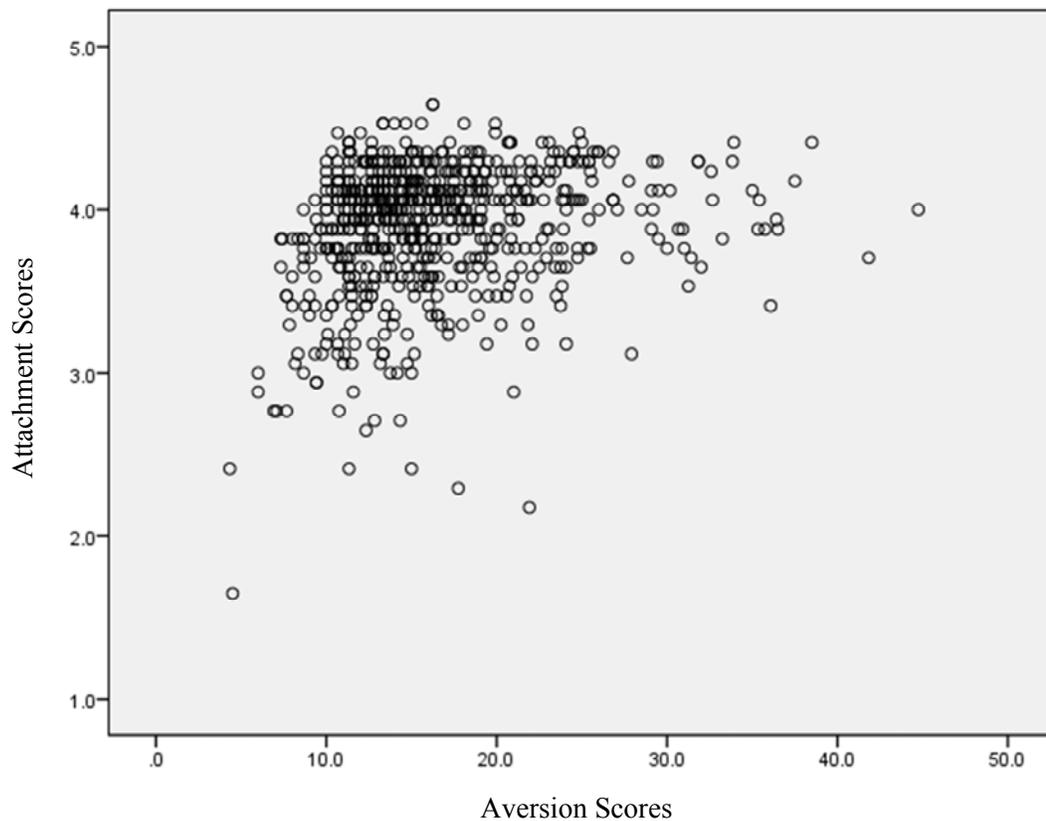
A weak, positive correlation ($r=.217$, $p<.001$) was found between participants' attachment ("Love") and the reported frequency of aversion used in training their dogs. (See Figure 1 for a scatterplot of this correlation). This is contrary to my hypothesis that there would be a negative correlation (as attachment increased, use of aversion would decrease). However, when considering that 1) it is a weak correlation and 2) none of the participants reported a maximum aversion score, it is possible that an invested owner is using mildly aversive methods in consideration of long term outcomes such as safety and public manners. From the owners' perspective, this may be seen as a form of "love" that

prepares their dog to better handle the human world. This is covered in more detail in the discussion chapter.

Secondary question 1: Does gender influence the use of aversion in training?

Due to the imbalanced ratio of male to female respondents, I was not able to consider this question with the results of the survey. This is unfortunate given that there are many opinions within the dog training world. Anecdotal evidence and recent, informal studies will be reviewed in the discussion chapter to further consider this topic.

Figure 1. Correlation of Attachment and Aversion Scores



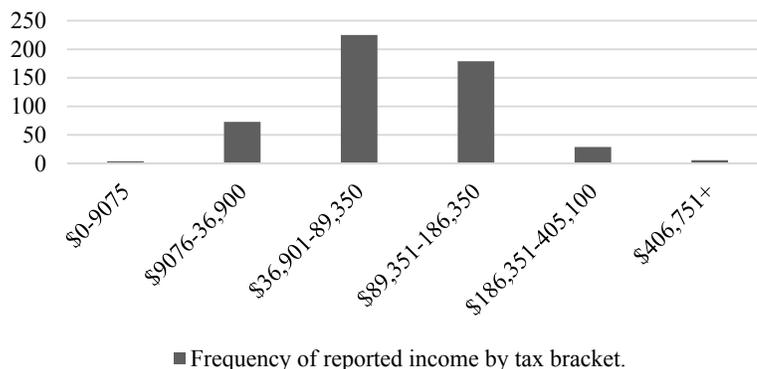
Secondary question 2: Does parental status influence the use of aversion in training?

There was no significant correlation between parental status (measured by the presence of children in the home “Yes” or “No”) and the use of aversion in dog training. While it is possible that this is an artifact of the high percent of respondents without children (78.6%), there are other possible reasons for the result, including the influence of one’s parenting strategy with other attached relationships in their life. This is considered further in the discussion chapter.

Secondary question 3: Does socioeconomic status influence the use of aversion in training?

For statistical simplicity, socioeconomic status was defined by a participant’s income bracket. The standard United States tax brackets were used to reduce income into categories. As mentioned earlier in this chapter, the majority of participants reported income between \$36,901 and \$186,350 ($n = 404$ or 59.8%), and therefore report as middle class. However, a wide range of reported incomes resulted in a standard distribution (see Figure 2). Interestingly, socioeconomic status does not correlate with the use of aversion ($r=.038$, $p=.323$).

Figure 2: Distribution of Reported Income



Chapter 6

Discussion

Before considering the results of each research question, it is important to address the significant homogeneity of the sample population. In a 2007 meta-analysis of human-animal research, Hal Herzog found that most self-report surveys regarding attachment were completed by women. A similar pattern is found in human parenting research. While this is certainly a limitation of the study, resulting in some unanswered questions, it is consistent with previous research of its kind. We should not discard this as poor sampling. Instead, it is valuable to recognize that, especially when discussing human-canine attachment, this may be the result of what population is actually participating in the behavior being studied.

In this vein, I move forward with a deeper analysis of the study understanding that I am addressing a specific niche group. In addition to a sample that was 90.1% female, 529 respondents (78.6%) reported that they did not have children. In her 2014 article, Blackstone addresses the “childfree” movement in America, suggesting that couples within this population frequently substitute children with dogs. Given the use of Facebook and Yahoo list-servs for advertising purposes, it appears that this study tapped into this niche population. I consider this in turn under “Parenting Dogs” in this chapter.

The results of the primary research question regarding attachment and aversion are at first, counterintuitive. My original hypothesis stated that as attachment increased, the use of aversion would decrease. Accordingly, I anticipated a negative score on the

Pearson's rho. However, the opposite was true. As attachment increased (as measured by "Love" on the PALS survey), the use of aversion increased, but only slightly, resulting in $r=.217$. After further consideration, this begins to make sense, particularly in light of a large percentage of the sample reporting that they see themselves as their dogs' parent (39.1%) or guardian (25.9%).

Ember and Ember (2005) completed a cross-cultural study in an effort to explain the use of corporal punishment with children. Defining corporal punishment as "hitting, striking, wounding, or bruising a dependent child for the purpose of punishing, disciplining, or showing disapproval (2005:609)." They found that societies with high levels of stratification or political integration are predictive of an increase of corporal punishment. They hypothesized that this may be explained by the importance of status and image within the group and the potential reflection of a child's behavior on the status of the parent.

The parallel here to dogs, particularly in WEIRD societies, becomes easy to see. First, we could embrace the Embers' definition of corporal punishment of children and expand it with the more aversive training techniques used with dogs. In doing so, our definition of corporal punishment in dog training may read as follows: "hitting, striking, wounding, shocking, choking, or scaring a pet dog for the purpose of training, punishing, disciplining, or showing disapproval." Applying this revised definition to our sample of self-reported dog "parents" and "guardians," it is almost surprising that the correlation was not stronger or the aversion scores higher.

The weakness of the correlation may be explained by the sample population itself. Straus and Stewart (1999) report that middle to upper class Euro-Americans use corporal

punishment less frequently when compared to other socioeconomic or ethnic groups. Given that the sample is relatively homogenous with white, middle class females, this same phenomenon is likely taking place among invested dog owners. This would then mitigate the impact of social structure, minimizing the degree of aversion within individual techniques, while still allowing for overall status and image to drive the use of some forms of punishment.

Interestingly, Straus and Stewart (1999) also found that women are slightly more likely to resort to corporal punishment than men. It was suggested that women may be more patient, tolerating inappropriate behavior longer than their male counterparts. However, their response when they determine it is time to punish may be more severe. This ideal of a “patient mother” or “patient owner” may result in the primarily female population reporting their ideal frequency, unconsciously minimizing how frequently they actually use certain aversive techniques. Additionally, Milevsky, Schlechter, Netter, and Keehn (2007) found that authoritative parenting in mothers, with its balance of discipline and warmth, relates to higher self-esteem and life-satisfaction and lower depression in adolescents. Perhaps these improved outcomes in children’s, and subsequently dog’s, behavior is reinforcing parents to apply an authoritative style.

Unfortunately, the sample included a small enough proportion of men that looking directly at gender roles within dog training is problematic with this data. This is a common problem with pet attachment research, as reported by Herzog (2007), yet the simple fact that women tend to respond more frequently to these surveys than men may say something about the population.

In 2014, Certified Applied Animal Behaviorist Dr. Karen London completed an informal survey of dog trainers. Her goal was to review client stories from professionals in dog training and behavior to see if any gender differences presented themselves. She found trends emerged in forcefulness, goals, expectations, and the willingness to use certain forms of reinforcement and reward. Men tend to be more forceful and impatient, relying more on physical and verbal corrections, while women are more likely to try alternatives. Though the training goals are often the same between sexes, women are more likely to continue training beyond basic manners. Likewise, the expectations of time investment and end results tend to be more realistic among women. She found that men are more likely to expect a dog to be 100 percent fluent after one class, whereas women are more likely to take responsibility for their role within the human-dog relationship. Finally, she found men are more likely to want to phase out food rewards quickly, expecting dogs to want to please. Interestingly, trainers reported that transitioning their male clients to other “life rewards” such as play or being released from work resulted in higher compliance among men.

While London’s study was more qualitative and informal, it is a start toward investigating gender in training directly. Due to the difficulties in obtaining a balanced sample, efforts to investigate gender’s influence on training, including this thesis, often go unanswered. Perhaps more formalized surveys of trainers or observational data based upon training classes and public behavior (such as dog parks and pet stores) would yield more reliable results upon which to build future research.

Another interesting find of this thesis research is that parental status did not directly influence the use of aversion in dog training. As mentioned in the “Results”

chapter, it is possible this is an artifact of a sample that was 78.6% non-parents. Despite this, I would hypothesize that a higher percentage of parents in the sample would not significantly change the results. In 2014, Stoeckel, Palley, Gollub, Niemi, and Evins completed a study using magnetic resonance imaging (MRI) to compare mothers' attachments to their child and their dog. They found that maternal responses to images of own dog and own child resulted in similar neural imaging in contrast to other dog or other child stimuli. The authors concluded that although the formation of the bonds differed (one driven by evolution, the other learned) the maintenance and strength of the bonds did not vary significantly. Given that the respondents to this research thesis are 1) primarily female and 2) report high levels of attachment to their pet dogs, I suspect the presence or absence children may not change the "parenting" style applied to either species.

It is important to note, however, that insufficient responses regarding the ages of children were provided from respondents identifying as parents. It is possible that this factor could influence the attachment an owner feels toward their dog and the degree of aversion used in training dogs, particularly if the child's safety is of concern. Likewise, Herzog (2010) noted research that suggested parents were less attached to family dogs as a result of decreased investment in the dog compared to the children in the home. Interestingly, this difference did not present itself in the respondents of the current study. Future research is needed to determine the likely cause of this result.

The final question of this research was one of income. Does the socioeconomic status of the respondent influence the degree of aversion used in training? The results here show that there is not a significant relationship between these two variables. It is

possible that this is a by-product of a primarily middle-class sample population. However, from a purely statistical perspective, the overall sample was properly dispersed to suggest that something else is responsible for this result. Rather, I propose that the high proportion of white females is masking any implications that income may have.

Parenting Dogs

The results of this thesis research answered many questions, but they also highlight a growing trend in WEIRD societies. For quite some time, scholars have been seeking to understand an increase in pet keeping and subsequent changes in how owners describe or refer to their pets (Serpell & Paul, 2011), and this is especially true for dog owners. Given American Pet Products Association (2014) on pet spending, retailers have responded by marketing products and services to “pet parents.” These products include strollers for small dogs and puppies, mobility assistance gear for aging dogs, carriers and automobile safety gear, clothing and accessories, an ever-expanding array of toys and feeding paraphernalia, and “human grade” diets. Even products such as pet health insurance have become commonplace (Dmietrieva, 2012).

There has been speculation as to the cause of this trend, including the observation of declining fertility rates since the late 1960s and early 1970s (Blackstone, 2014; Kirmeyer & Hamilton, 2011). Research has found that childless individuals and couples are turning their parenting strategies towards their dogs either in practice for or in lieu of human children (Steiner et al., 2013; Blouin, 2013; Evans & Buerk, 2012). The findings of this thesis further support those data given the large number of respondents who do not

have children and refer to themselves as their dog's "parent" or "guardian." Below, responses to open-ended questions on the Dog Owner Survey provide further insight.

"They are my fur babies and I would be depressed and devastated without them in my life. They bring me so much joy that all the costs and obligations are more than worth it."

"I love my dog very much. He is my baby."

"She is very special to our family, and is treated as if she was our child."

"I do consider my dog my 'fur son', and making sure his needs are met, is one of my main focuses in how I structure my life."

"I love my babies."

This script plays out frequently in popular media, including a 2014 story on EliteDaily.com which shared images from a childfree couple's photo session with their Jack Russell Terrier in many of the traditional newborn and family poses (Matula, 2014). These included images of the swaddled "baby" and close interactions of face-to-face cuddles and play. Additionally, courtroom trends show an increase in special hearings in which divorcing couples fight for custody of their "child" (Marsh, 2013). This has become sufficiently common that in a 2009 newsletter article, the American Bar included details on handling animal custody cases from the perspective of pets as children (Garcia, 2009).

If humans are truly parenting their dogs, one would expect to see gendered divisions of labor regarding dog care, mimicking those seen between men and women in human parenting literature (Hrdy, 2009; Gray & Anderson, 2010). As such, we would anticipate men being more involved in provisioning and play, while women would be

more concerned with grooming, veterinary care, and emotional security and training. Investigating the presence and implications of these gendered differences in human-canine interactions may be crucial to understanding how cross-species parenting plays out in the daily lives of these dog parents and their “fur kids.”

To date, I am not aware of any studies that specifically focus on gendered divisions of labor in the care of pet dogs. On the surface, it would seem sensible that we would continue to see the same patterns found in parenting strategies applied to human children, particularly infants and toddlers. In fact, during my years as a canine behavior consultant, it was most frequently the woman who contacted me for services, participated in the sessions, and implemented the training protocols within the home. However, not all of these clients were childfree couples, and as such, the direct care of the dog may have been deemed the woman’s responsibility along with that of the children. When the couple was childfree, frequently both the man and the woman participated equally.

Given that 78.6% of the sample population for this thesis reported as non-parents, a study investigating this childfree population specifically may be appropriate. Blackstone (2014) reports that childfree couples tend to stray from traditional gendered divisions of labor within the home. With both parties finding fulfillment in careers outside the home, more egalitarian roles tend to be taken within the home, with equal distribution of household duties. Applying this to those childfree couples who have dogs, we would expect to see relatively equal time invested in feeding, grooming, and house-keeping (cleaning, picking up the yard, etc.) as well as nearly equal participation and concern in veterinary visits, play, and training. In essence, we should expect availability

of time, technical skill (particularly in the case of training or grooming), and individual schedules to determine divisions of labor within these families.

Limitations

As noted previously, the sample population of this study is homogenous. This may be a result of using a convenience sample or it may speak to the greater phenomenon that is pet dog keeping. Perhaps the respondents to this survey are representative of the proportion of Americans who are highly attached to their dogs and use minimally aversive techniques. Without finding a way to achieve a greater variety of respondents in future studies, it will be difficult to accurately answer this question.

It is also important to note that this survey took place entirely online. While the intent was to provide anonymity in hopes of more truthful answers, this format may have biased the sample population. Online surveys increase the difficulty of reaching lower socioeconomic groups who may not have Internet services at home. Expecting these groups to be willing to travel to a public library or other location for Internet access would result solely in those more attached and invested owners participating.

Finally, while efforts were made to advertise the study to a wide variety of dog owners, it is nearly impossible to reach those who do not invest, even slightly, in their dogs. It is highly unlikely that this survey reached owners who neglect or abuse their dogs as “just animals” or worse, given that advertising consisted of Facebook, Yahoo, and postcards to local businesses such as veterinarians, groomers, and pet boutiques. By

nature, these outlets will result in a convenience sample of invested owners who will be most likely to share the survey with other invested owners.

Regardless of these limitations, this research provided some interesting insights into the phenomenon of pet dog keeping within a specific population, including insights into the mirror between dog training and human parenting. It also shed light on the growing childfree population given the large percentage of respondents reporting as non-parents. This may very well be the direction for future research given the consistent homogeneity of respondents to human-canine studies.

Future Research

As is often the case with research, the results of this study raise as many questions as answers. Future research should attempt to solve the problem of a balanced study population so that gender differences in dog training approaches, if truly present, may be quantified for further consideration. Likewise, targeted research with non-white ethnic groups or other countries may provide cross-cultural insight into the application of dog training practices through a global lens.

Additionally, given the rise of the childfree population and the frequency with which these couples “refer to their pets as children (Blackstone, 2014:54)” a study that is both quantitative and qualitative may result in a better understanding of this phenomenon. Are these couples truly parenting their dogs, as the data and self-report surveys suggest? Or are they “playing house” as may be suggested by certain models of human behavior? Without a deeper analysis of their language, relationships, and interactions with their

dogs as actors within these couples' daily lives, we may never fully understand the impact, purpose, or value of dogs in these non-traditional families.

Chapter 7

Conclusion

Humans and canines have spent thousands of years working and living together in varying degrees of attachment. The domestic dog is the first species domesticated by humans, and as a result, may be the most closely affiliated in attachment and cognitive skills. Data suggest a self-domestication process in which ancient wolves first capitalized upon human groups, becoming proto-dogs, and in turn, human groups influenced the long term behavior and morphology of proto-dogs until they became fully domesticated. This has resulted in a milieu of cognitive, emotive, and social specializations in the domestic dog that help it communicate with and understand humans.

Recently, surveyed Americans have reported “parent” like attachment to their dogs. This study showed that there is a weak, positive correlation ($r=.217$) between human to dog attachment and the degree of aversion used in dog training. Though this ran contrary to my hypothesis that there would be a negative correlation, interpretations of human parenting literature suggest that “parent” like attachment may be what’s driving the reported behavior in the current sample. While the question of gender was unanswerable due to a skewed sample population, it appears that socioeconomic and parenting status do not influence training choices. This may be the result of a homogenous sample population, but additional references suggest these are real phenomenon in and of themselves.

In addition to answering the primary and secondary research questions, this project identified potential areas of study for future, in-depth qualitative and quantitative

data collection on the relationship between owner variables and dog training techniques. Since 78.6% of the respondents reported as non-parents and 65% of the respondents reported considering themselves to be their dog's "parent" or "guardian," insight is given to the rising childfree community as defined by Blackstone (2014). Future research should consider further consideration of comparisons between "dog parents" and those with human children to explore the similarities and differences. In doing so, it may be possible to see how social trends in parenting styles affect pet owners and vice versa.

Significance

This project adds to growing data on canine cognition and human-animal interactions. I also anticipate this research opening a line of communication between dog training and behavior professionals and the owners they help. By quantifying variables such as attachment, we may be able to spark a conversation among trainers as to how they can assess the attachment of owners and use this information to offer tailored training recommendations. A reduction of shelter populations, improved welfare, and better understanding between humans and the dogs they love could result.

Although this project is primarily concerned with human-animal interactions, it is significant as pet dog training mirrors human parenting in many respects, particularly as reflected in the childfree community of "fur kids" and family photos. As more humans choose to apply parenting strategies to pet dogs either in practice for or as substitution for having children, the degree of aversion used in training pet dogs may provide insight into current trends in human parenting. It is also valuable to begin consideration how this

research may impact future studies on the childfree movement, bridging the gap between being parents and dog owners.

Appendix 1

Dog Trainer Survey

The purpose of this survey is to find consensus within the dog training profession on the degree of aversion of popular training techniques and philosophies.

For the following list of statements, please assign the appropriate training philosophy.

TT = Traditional Training

DT = Dominance Theory

LR = Lure-Reward Training

HH = Humane Hierarchy Training

CT = Clicker Training

AA = Anthropomorphism

1. The dog should obey and respect his owner at all times.
2. The dog is a member of the wolf family who needs a strong alpha.
3. The dog is a family member who needs to be taught right and wrong.
4. The dog is a behaving animal operating upon his environment.
5. The dog is a status seeking individual and the owner must be dominant.
6. The dog is a sentient being who deserves respect.
7. The dog is a friend who is expected to make good decisions.
8. The dog is a pet who should be taught with rewards and punishment.
9. The dog is a furry human who deserves protection.
10. The dog is a child who needs love and freedom to live.

11. The dog is an animal who should support humans.
12. The dog is a sentient being who learns through consequences.
13. The dog is a tool for protection.
14. The dog is an autonomous being whose species-specific needs should be considered.

For the following list of statements, first assign the appropriate training philosophy.

Second, assign a degree of aversion (from the dog's perspective).

TT = Traditional Training	0 = not aversive
DT = Dominance Theory	1 = minimally aversive
LR = Lure-Reward Training	2 = mildly aversive
HH = Humane Hierarchy Training	3 = moderately aversive
CT = Clicker Training	4 = strongly aversive
AA = Anthropomorphism	5 = extremely aversive/abusive

1. Use a collar correction when the dog pulls on leash.
2. Roll the dog onto its back to establish dominance.
3. Shake a can of pennies to distract the dog when he is barking.
4. Provide a reward when the dog chooses to check in with you at the park, on walks, etc.
5. Teach the dog skills by breaking them into smaller components that are easily learned.
6. Ask the dog to stay and be ready to lean over him if he starts to get up.

7. Tell the dog you will have a surprise for him if he behaves while you are gone.
8. Set the dog up to succeed and reward good choices.
9. Be calm assertive to provide a leader to your dog.
10. Call the dog to you in a high pitched voice and give him a treat when he arrives.
11. Provide a sandbox with hidden toys and treats for a dog who digs in the back yard.
12. Avoid training the dog so as not to infringe on his rights.
13. Shape the dog's behavior by controlling access to resources.
14. Stand over the dog and stare until he stops barking or whining.
15. Knee the dog in the chest for jumping up on visitors and family.
16. Change directions abruptly if the dog pulls on his leash.
17. Verbally scold the dog for growling or baring his teeth.
18. Use food, play, and opportunities to sniff as rewards for appropriate behavior.
19. Avoid exciting environments in which the dog cannot control its behavior.
20. Ask the dog to be a good boy while you are gone from the house.
21. Defend the dog's needs when he growls over a bone.
22. Provide legal outlets for natural dog behavior.
23. Use your hand to bite or grab the dog's scruff if he is disobedient.
24. Provide a remote shock to the groin when the dog lifts his leg in an inappropriate location.
25. Interrupt inappropriate elimination and take the dog to the proper place to finish.
26. Use metal or electronic training collars to correct problem behavior.
27. Physical punishment should be a last resort.

28. Provide food puzzle toys as mental stimulation for bored dogs.
29. Yell at the dog for peeing in the doorway out of spite.
30. Use a box clicker or marker word to signal delivery of a treat to the dog.
31. Force the dog into a down position and do not let him up until he stops struggling.
32. Take the dog to his potty accident and scold him for his mistake.
33. Correct the dog by applying shock from a collar when it refuses to stop barking.
34. Place a treat in front of the dog's nose to position him into a down.
35. Place a treat in front of the dog's nose to position him into a sit.
36. Manage the dog's environment to prevent mistakes.
37. Work at the dog's skill level, only asking for responses to cues he knows.
38. Do not let the dog sit or stand on or above you.
39. Allow the dog to do whatever he wants at all times.
40. Use a head collar to manage a dog who pulls on leash.
41. Squirt the dog in the face with a water bottle to stop barking.
42. Carry the dog everywhere rather than allowing him to walk on leash.
43. Take away any item for which the dog is willing to growl at you.
44. Drag the dog by the leash if it refuses to walk forward.
45. Stand firmly in front of the dog until he looks away and submits his space to you.
46. Focus on what the dog does right, and ignore what the dog does wrong.
47. Allow the dog free roam of the house although he cannot behave unsupervised.
48. Use known skills (sit, down) to prevent inappropriate behaviors.
49. Step on the leash and pull it through your foot until the dog submits into a down position.

50. Teach the dog to sit for greetings to prevent jumping up behavior.
51. Talk to the dog about why he is being naughty.
52. Consult with a veterinarian if your dog's behavior suddenly changes.
53. Stop walking if the dog pulls on his leash.
54. Manage the dog with leashes, tethers, baby gates, or crates when visitors arrive at the house.
55. Prevent the dog from going through doorways before you.
56. Pull up on the dog's leash until his front feet are off the ground if he reacts to other dogs.
57. Stare down the dog until he backs away from or relinquishes resources.
58. Teach a dog to walk nicely on leash by rewarding each step at the owner's side.
59. Explain to the dog what he did wrong.
60. Trade special items such as bones and favorite toys for treats.
61. Use a long leash to tug on the dog if he doesn't respond to the "come" command.
62. Teach the dog to lie on a mat and relax.
63. Crate the dog for going potty in the house.
64. Potty the dog on a schedule and reward for appropriate elimination to minimize houstraining mistakes.
65. Supervise the dog during times he may make mistakes.
66. Collar correct a barking dog to get his attention.
67. Use visual barriers to prevent the dog from getting aroused and barking out windows.

68. Give the dog a chance to collect information about his environment.
69. Kennel the dog outside when not training.
70. Use a toy to entice a dog to come then play when he arrives.
71. Tether the dog so he can't jump up on visitors.
72. Provide legal outlets for chewing.
73. Grab the dog by the scruff and pin him to the ground.
74. Use a box clicker or marker word to signal the delivery of a treat to the dog.
75. Use the opportunity to sniff as a reward for walking politely on leash.

Open Answer Question:

Are there any methods or techniques you felt were missing from this list? If so, please provide the technique along with the training philosophy and degree of aversion you would assign.

Appendix 2

Dog Owner Survey

Demographic Information

1. Location (City, State) or Zip Code
2. Gender: Male / Female
3. Sexual Orientation: Heterosexual, Gay, Lesbian, Bisexual, Asexual
4. Age
5. Marital Status: Single, Long-Term Relationship, Married, Divorced, Widowed
6. Household: Live Alone, Roommate, Significant Other, Family
7. Number of Children in Household
8. Ages of Children in the Household
9. Number of Dogs in Household
10. Do you consider yourself your dogs: Parent, Guardian, Owner, Friend, Other
11. Dog One:
 - a. Breed
 - b. Current Reproductive Status
 - c. Age
 - d. Where Did You Obtain? Breeder, Shelter, Pet Store, Friend/Family, Stray,
Other
 - e. How Old Was Your Dog When You Obtained Him/Her?
 - f. Anything About Your Dog's History You Feel We Should Know?
 - g. Is This Dog a Certified Service Dog?
 - h. This Dog Lives Primarily: Indoor, Outdoor, In a Kennel, Other

12. Dog Two: (same data as dog one)
13. Dog Two: (same data as dog one)
14. Do You Have Pets Other Than Your Dogs?
15. Ethnicity: White, Latino, African American, Native American, Indian, Asian,
Other
16. Highest Education Received: Junior High, High School, Technical College, Some
College, Associate, Bachelor, Masters, PhD, Other
17. Annual Household Income
18. Type of Residence: House With a Yard, House Without a Yard,
Apartment/Condo, Room Rental, Other (please describe)

Pet Attachment and Life-Impact Questionnaire (PALS)

This questionnaire is for anyone who has lived with a dog. If you have EVER lived with a dog (whether or not you owned it) please indicate how strongly each statement reflects how your dog has impacted your life. If you have lived with more than one dog please respond with your **favorite or most recently obtained dog** in mind. If you choose a past dog, please respond as if the dog currently lives with you.

What breed or mix of breeds was your most special/important/favorite dog?

Responses for each question are:

Not at all	Somewhat	Moderately	Quite a bit	Very much
1	2	3	4	5

1. Having a dog has helped my health.
2. My dog is part of my family.
3. My dog is more loyal than most people.
4. My dog has the same privileges a family member.
5. A dog completes the family.
6. Having a dog is stressful.
7. I am more affectionate because of my dog.
8. I have learned compassion from my dog.
9. Having a dog has helped me to understand loss and letting go.
10. My dog gives me unconditional love.
11. My dog gives me something to love.
12. My dog gives me something that I can form a close emotional bond with.
13. Having a dog has negatively impacted me emotionally.
14. My dog is my companion.
15. My dog and I have a special relationship.
16. My dog is loyal.
17. My dog provides comfort for me.
18. I am worse off because I have a dog.
19. I like to cuddle with my dog.
20. I like my dog mostly because it is cute.

21. It's worth giving up other things in life in order to have a dog.
22. Dogs take a lot of time but it is worth it.
23. My dog teaches me to be more loving.
24. My dog is my friend.
25. My dog teaches me to trust.
26. My dog calms me down.
27. My dog cheers me up.
28. I take my dog with me to visit people.
29. I keep a picture of my dog with me.
30. I am affected by the way others react to my dog.
31. My dog teaches me responsibility.
32. My dog is fun and entertaining.
33. My dog is a financial hardship.
34. My dog allows me to feel needed.
35. My dog is someone to lean on and be with me when no one else is there for me.
36. My dog provides stability for me.
37. My dog understands me like no one else has.
38. Talking to my dog makes me feel better.
39. My dog offers protection/safety.

Dog Training Philosophies

Described below are some of the most common dog training techniques currently used by owners and dog trainers. For each statement, please tell us how frequently you use each technique.

Responses for each question are:

Never	Rarely	Sometimes	Monthly	Weekly	Daily
0	1	2	3	4	5

1. Use a collar correction when the dog pulls on leash.
2. Roll the dog onto his back to establish dominance.
3. Shake a can of pennies to distract the dog when barking.
4. Set the dog up to succeed and reward good choices.
5. Provide a remote shock to the groin when the dog lifts his leg in an inappropriate location.
6. Provide legal outlets for natural dog behavior.
7. Use a head collar (gentle leader) to manage a dog who pulls on leash.
8. Force the dog into a down position and do not let him up until he stops struggling.
9. Squirt the dog in the face with a water bottle to stop barking.
10. Interrupt inappropriate elimination and take the dog to the proper place to finish.
11. Carry the dog everywhere rather than allowing him to walk on leash.
12. Drag the dog by the leash if he refuses to walk forward.
13. Stop walking if the dog pulls on his leash.

14. Manage the dog with leashes, tethers, baby gates, or crates when visitors arrive at the house.
15. Crate the dog for going potty in the house.
16. Collar correct a barking dog to get his attention.
17. Grab the dog by the scruff and pin him to the ground.
18. Use the opportunity to sniff as a reward for walking politely on leash.
19. Use known skills (sit, down) to prevent inappropriate behaviors.
20. Verbally scold the dog for growling or baring his teeth.

Open Answer Questions

Please answer the following questions as completely as possible.

1. How did you decide upon your chosen training methods?
2. How did you learn about dog training?
3. Why did you get your dog(s) and how did you decide what dog(s) to get?
4. Is there anything else about your training philosophy you would like us to know?
5. Is there anything else about your relationship with your dog(s) you would like us to know?

Appendix 3

IRB Approval



**Social/Behavioral IRB – Exempt Review
Deemed Exempt**

DATE: March 17, 2014
TO: **Dr. Peter Gray**, Anthropology
FROM: Office of Research Integrity – Human Subjects
RE: Notification of IRB Action
Protocol Title: An Investigation into Human to Dog Attachment
Protocol # 1402-4708

This memorandum is notification that the project referenced above has been reviewed as indicated in Federal regulatory statutes 45CFR46 and deemed exempt under 45 CFR 46.101(b)2.

PLEASE NOTE:

Upon Approval, the research team is responsible for conducting the research as stated in the exempt application reviewed by the ORI – HS and/or the IRB which shall include using the most recently submitted Informed Consent/Assent Forms (Information Sheet) and recruitment materials. The official versions of these forms are indicated by footer which contains the date exempted.

Any changes to the application may cause this project to require a different level of IRB review. Should any changes need to be made, please submit a **Modification Form**. When the above-referenced project has been completed, please submit a **Continuing Review/Progress Completion report** to notify ORI – HS of its closure.

If you have questions or require any assistance, please contact the Office of Research Integrity - Human Subjects at IRB@unlv.edu or call 895-2794.

References Cited

- Ainsworth, M. S. D., & Wittig, B. (1969). Attachment and exploratory behavior of one year olds in a strange situation. *In: Determinants of infant behavior, Vol. 4, Foss, BM editor.* T. & A. Constable Ltd.: London, United Kingdom.
- Alexander, M. C. (2003). *Click for joy! Questions and answers from clicker trainers and their dogs.* Sunshine Books: Waltham, Massachusetts.
- American Pet Products Association. (2013). *Pet industry market size and ownership statistics.* http://www.americanpetproducts.org/press_industrytrends.asp, retrieved November 11, 2013.
- Arhant, C., Bubna-Littitz, H., Bartels, A., Futschik, A., & Troxler, J. (2010). Behaviour of smaller and larger dogs: Effects of training methods, inconsistency of owner behaviour and level of engagement in activities with the dog. *Applied Animal Behaviour Science, 123*(4), 131-142. doi:10.1016/j.applanim.2010.01.003
- Bender, H., Allen, J., McElhaney, K., Antonishak, J., Moore, C., O'Beirne, H., Davis, H., & Davis, S. (2007). Use of harsh physical discipline and developmental outcomes in adolescence. *Development and Psychopathology, 19*(1), 227-242. doi:10.1017/S0954579407070125
- Berns, G. (2013). *How dogs love us.* New Harvest/Houghton Mifflin Harcourt; New York, New York.
- Berns, G., Brooks, A., & Spivak, M. (2012). Functional MRI in awake unrestrained dogs. *PLoS ONE, 7*(5), e38027. doi:10.1371/journal.pone.0038027
- Berns, G., Brooks, A., & Spivak, M. (2013). Replicability and heterogeneity of awake unrestrained canine fMRI responses. *PLoS ONE 8*(12): e81698.
- Blackstone, A. (2014). Doing family without having kids. *Sociology Compass, 8*(1), 52-62. doi: 10.1111/soc4.12102
- Blouin, D. (2013). Are dogs children, companions, or just animals? Understanding variations in people's orientations toward animals. *Anthrozoös, 26*(2), 279-294.
- Bradshaw, J. (2011). *Dog sense.* Basic Books: New York, New York.
- Braitman, L. (2014). *Animal madness: How anxious dogs, compulsive parrots, and elephants in recovery help us understand ourselves.* Simon & Schuster: New York, New York.
- Braude, S., & Gladman, J. (2013). Out of Asia: An allopatric model for the evolution of the domestic dog. *ISRN Zoology, 2013*, e841734. doi:10.1155/2013/841734
- Calafat, A., García, F., Juan, M., Becoña, E., & Fernández-Hermida, J. (2014). Which parenting style is more protective against adolescent substance abuse? Evidence within the European context. *Drug and Alcohol Dependence, 138*, 185-192. doi:10.1016/j.drugalcdep.2014.02.705
- Campbell, M. W., & de Waal, F. B. M. (2011). Ingroup-outgroup bias in contagious yawning by chimpanzees supports link to empathy. *PLoS ONE 6*(4): e18283. doi:10.1371/journal.pone.0018283
- The Certification Council for Professional Dog Trainers. (2009). *Position statement: Application of the human hierarchy.* www.ccpdt.org/phocadownload/governing-documents/PositionStatement/position%20statement%20regarding%20the%20use%20of%20humane%20hierarchy-4.pdf. Retrieved November 13, 2013.

- The Certification Council for Professional Dog Trainers. (2011). *Position statement: Dog training and behavior intervention practices*.
www.ccpdt.org/phocadownload/governing-documents/Policies/Training%20and%20Behavior%20Practices%20Policy.pdf.
 Retrieved November 13, 2013.
- Clarke, T., Cooper, J., & Mills, D. (2013). Acculturation – Perceptions of breed differences in behavior of the dog (*Canis familiaris*). *Human-Animal Interactions Bulletin*, 1(2), 16-33.
- Coppinger, R., & Coppinger, L. (2001). *Dogs: A new understanding of canine origin, behavior, and evolution*. University of Chicago Press: Chicago, Illinois.
- Custance, D., & Mayer, J. (2012). Empathic-like responding by domestic dogs (*Canis familiaris*) to distress in humans: an exploratory study. *Animal Cognition*, 15(5), 851-859. doi:10.1007/s10071-012-0510-1
- De Waal, F. (2005). *Our inner ape*. Riverhead Books: New York, New York.
- DeMarni Cromer, L., & Barlow, R. M. (2013) Factors and convergent validity of the pet attachment and life impact scale (PALS). *Human-Animal Interactions Bulletin*, 1(2), 34-56.
- Dicker, R. (2013). Please stop eating cats and dogs, ads urge consumers in China. *Huffington Post*. http://www.huffingtonpost.com/2013/11/19/eating-cats-dogs-ad-china_n_4298593.html. Retrieved December 11, 2013.
- Dmitrieva, K. (2014). Dogs loved like children fuel pet insurance sales. *Bloomberg*, November 12, 2014. <http://www.bloomberg.com/news/2014-11-13/dogs-loved-like-children-fuel-pet-insurance-sales.html>. Retrieved November 24, 2014.
- Dunbar, I. (1996). *How to teach a new dog old tricks*. James & Kenneth Publishers, Berkeley, California.
- Ember, C., & Ember, M. (2005). Explaining corporal punishment of children: A cross-cultural study. *American Anthropologist*, 107(4), 609-619.
- Egan, V., & MacKenzie, J. (2012). Does personality, delinquency, or mating effort necessarily dictate a preference for an aggressive dog? *Anthrozoös*, 25(2), 161-170.
- Evans, R., & Buerk, R. (2012). Why Japan prefers pets to parenthood. *The Guardian*, June 8, 2012. <http://www.theguardian.com/lifeandstyle/2012/jun/08/why-japan-prefers-pets-to-parenthood>. Retrieved November 24, 2014.
- Fisher, G. (2009). *The thinking dog: Crossover to clicker training*. Dogwise Publishing: Wenatchee, Washington.
- Freedman, A., Gronau, I., Schweizer, R., Vecchyo, D., Han, E. ... Novembre, J. (2014). Genome sequencing highlights the dynamic early history of dogs. *PLoS Genetics* 10(1), e1004016. doi:10.1371/journal.pgen.1004016
- Fugazza, C., & Miklósi, A. (2013). Deferred imitation and declarative memory in domestic dogs. *Animal Cognition, online*. doi:10.1007/s10071-013-0656-5
- Garcia, C. (2009). Animal custody cases. *GP Solo, Animal Law*, 26(9), online.
- Gettler, L. (2014). Applying socioendocrinology to evolutionary models: Fatherhood and physiology. *Evolutionary anthropology*, 23, 146-160. doi:10.1002/evan.21412
- Goldberg, K. (2013). Waiting for Sydney. *the Bark, Winter 2013*, 99-100.
- Grandin, T., & Johnson, C. (2005). *Animals in translation*. Harcourt, Inc.: Orlando, Florida.

- Gray, P., & Anderson, K. (2010). *Fatherhood: Evolution and human paternal behavior*. Harvard University Press: Cambridge, Massachusetts.
- Gray, P., & Young, S. (2011). Human-pet dynamics in cross-cultural perspectives. *Anthrozoös*, 24(1), 17-30.
- Gurian, A. (2013). Parenting styles/children's temperaments: The match. *The Child Study Center, NYU Langone Medical Center*.
http://www.aboutourkids.org/articles/parenting_styleschildren039s_temperaments_match. Retrieved on December 12, 2013.
- Hare, B., Wobber, V., & Wrangham, R. (2012). The self-domestication hypothesis: evolution of bonobo psychology is due to selection against aggression. *Animal Behaviour*, 83(1), 573-585. doi:10.1016/j.anbehav.2011-12.007
- Hare, B., & Woods, V. (2013). *The genius of dogs: How dogs are smarter than you think*. Dutton: New York, New York.
- Hecht, J., Miklósi, A., & Gácsi, M. (2012). Behavioral assessment of owner perceptions of behaviors associated with guilt in dogs. *Applied Animal Behaviour Science*, 139(2), 134-142. doi:10.1016/j.applanim.2012.02.015
- Henrich, J., Heine, S., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences*, 1-75. doi: 10.1017/S0140525X0999152X
- Herzog, H. (2007). Gender differences in human-animal interactions: A review. *Anthrozoös*, 20(1), 7-21.
- Herzog, H. (2010). *Some we love, some we hate, some we eat*. HarperCollins Publishers: New York, New York.
- Horn, L., Huber, L., & Range, F. (2013). The importance of the secure base effect for domestic dogs – Evidence from a manipulative problem-solving task. *PLoS ONE*, 8(5), e65296. doi:10.1371/journal.pone.0065296
- Horowitz, A. (2009). Disambiguating the “guilty look”: Salient prompts to a familiar dog behaviour. *Behavior Processes*, 81(3), 447-452. doi:10.1016/j.beproc.2009.03.014
- Hrdy, S. (2009). *Mothers and others: The evolutionary origins of mutual understanding*. Harvard University Press: Cambridge, Massachusetts.
- Kaminski, J., Pitsch, A., & Tomasello, M. (2012). Dogs steal in the dark. *Animal Cognition*, 16(3), 385-394. doi:10.1007/s10071-012-0579-6
- Kirmeyer, S., & Hamilton, B. (2011). Childbearing differences among three generations of U.S. women. *NCHS Data Brief*, 68.
- Kohn, E. (2007). How dogs dream: Amazonian natures and the politics of transspecies engagement. *American Ethnologist*, 34(1), 3-24. doi:10.1525/ae.2007.34.1.3
- Lansford, J. E., Alampay, L. P., Al-Hassan, S., Bacchini, D., Bombi, A. S., ... Zelli, A. (2010). Corporal punishment of children in nine countries as a function of child gender and parent gender. *International Journal of Pediatrics*, 2010. doi: 10.1155/2010/672780
- London, K. (2014). Men, women, and dog training: What's gender got to do with it? *the Bark, Winter 2014*.
- Madsen, E. A., & Persson, T. (2012). Contagious yawning in domestic dog puppies (*Canis lupis familiaris*): the effect of ontogeny and emotional closeness on low-level imitation in dogs. *Animal Cognition*, 16, 233-240. doi:10.1007/s10071-012-0568-9

- Maher, J., & Pierpoint, H. (2011). Friends, status symbols and weapons: The use of dogs by youth groups and youth gangs. *Criminal Law & Social Change*, 55, 405-420. doi:10.1007/s10611-011-9294-5
- Marsh, J. (2013). Landmark custody battle over dog in divorce. *NY Post online*, <http://nypost.com/2013/12/04/landmark-custody-battle-over-dog-in-divorce/>, Retrieved November 16, 2014.
- Matula, A. (2014). Couple has ridiculously adorable photoshoot with puppy as if it was a newborn baby (Photos). *EliteDaily.com*, <http://elitedaily.com/envision/couple-photoshoot-puppy-newborn-baby/694218/>, Retrieved November 16, 2014
- McConnell, P. B. (2002). *The other end of the leash: Why we do what we do around dogs*. Ballantine Books: New York, New York.
- McConnell, P. B. (2006). *For the love of a dog: Understanding emotion in you and your best friend*. Ballantine Books: New York, New York.
- McGreevy, P., Georgevsky, D., Carrasco, J., Valenzuela, M., Duffy, D., & Serpell, J. (2013). Dog behavior co-varies with height, bodyweight and skull shape. *PLoS ONE*, 8(12): e80529. doi:10.1371/journal.pone.0080529
- Miklósi, Á., Pongrácz, P., Lakatos, G., Topál, J., & Csányi, V. (2005). A comparative study of the use of visual communicative signals in interactions between dogs (*Canis familiaris*) and humans and cats (*Felis catus*) and humans. *Journal of Comparative Psychology*, 119(2), 179-186. doi:10.1037/0735-7036.119.2.179
- Milan, C., & Peltier, M. J. (2006). *Cesar's way: The natural, everyday guide to understanding and correcting common dog problems*. Crown Publishing Group: New York, New York.
- Milevsky, A., Schlechter, M., Netter, S., & Keehn, D. (2007). Maternal and paternal parenting styles in adolescents: Associations with self-esteem, depression and life-satisfaction. *Journal of Child and Family Studies*, 16, 39-47. doi:10.1007/s10826-006-9066-5
- Miller, S., Kennedy, C., DeVoe, D., Hickey, M., Nelson, T., & Kogan, L. (2009). An examination of changes in oxytocin levels in men and women before and after interaction with a bonded dog. *Anthrozoös*, 22(1), 31-42.
- Mitchell, R., & Sinkhorn, K. (2014). Why do people laugh during dog-human play interactions? *Anthrozoös*, 27(2), 235-250. doi:10.2752/175303714X13903827487566
- Mongillo, P., Elisa, P., Paolo, C., Gianfranco, G., Serena, A., & Lieta, M. (2013). Does the attachment system towards owners change in aged dogs? *Physiology & Behavior*. doi:10.1016/j.physbeh.2013.07.011
- The Monks of New Skete. (2002). *How to be your dog's best friend: completely revised and updated*. Self-Published: United States of America.
- Overall, K. (1997). *Clinical behavioral medicine for small animals*. Mosby – Year Book, Inc.: St. Louis, Missouri.
- Overall, K. (2007). Considerations for shock and 'training' collars: Concerns from and for the working dog community. *Journal of Veterinary Behavior*, 2007(2), 103-107.
- Ovodov, N., Crockford, S., Kuzmin, Y., Higham, T., Hodgins, G., & van der Plicht, J. (2011). A 33,000-year-old incipient dog from the Altai mountains of Siberia: Evidence of the earliest domestication disrupted by the last glacial maximum. *PLoS One*, 6(7), e22821. doi:10.1371/journal.pone.0022821.

- Paolo, M., Elisa, P., Paolo, C., Gianfranco, G., Serena, A., & Lieta, M. (2013). Does the attachment system towards owners change in aged dogs? *Physiology & Behavior*, *online*. doi:10-1016/j.physbeh.2013.07.011
- Patronek, G. J., Glickman, L. T., Beck, A. M., McCabe, G. P., & Ecker, C. (1996). Risk factors for relinquishment of dogs to an animal shelter. *Journal of the American Veterinary Medical Association*, *209*(3), 572-581.
- Perone, M. (2003). Negative effects of positive reinforcement. *The Behavior Analyst*, *26*(1), 1-14.
- Prato-Previde, E., Fallani, G., & Valsecchi, P. (2006). Gender differences in owners interacting with pet dogs: An observational study. *Ethology*, *112*, 64-73.
- Pryor, K. (2009). *Reaching the animal mind: Clicker training and what it teaches us about all animals*. Scribner: New York, New York.
- Range, F., & Virányi, Z. (2015). Tracking the evolutionary origins of dog-human cooperation: the “Canine Cooperation Hypothesis.” *Frontiers in Psychology*, *5*, 1-10. doi:10.3389/fpsyg.2014.01582
- Rooney, N. J., & Cowan, S. (2011). Training methods and owner-dog interactions: links with dog behaviour and learning ability. *Applied Animal Behaviour Science*, *132*(4), 169-177. doi: 10.1016/j.applanim.2011.03.007
- Rugaas, T. (2006). *On talking terms with dogs: calming signals*. Dogwise Publishing: Wenatchee, Washington.
- Schaffer, M. (2009). *One nation under dog: America's love affair with our dogs*. Holt Paperbacks: New York, New York.
- Schalke, E., Stichnoth, J., Ott, S., & Jones-Baade, R. (2006). Clinical signs caused by the use of electronic training collars on dogs in everyday life situations. *Applied Animal Behaviour Science*, *105*(4), 369-380.
- Serpell, J., & Paul, E. (2011). Pets in the family: An evolutionary perspective. *The Oxford Handbook of Evolutionary Family Psychology*. Oxford University Press: New York, New York.
- Spera, C. (2005). A review of the relationship among parenting practices, parenting styles, and adolescent school achievement. *Educational Psychology Review*, *17*(2), 125-146. doi:10.1007/s10648-005-3950-1
- Steiner, E., Silver, N. C., Hall, P., Downing, C., Hurton, D., & Gray, P. (2013). Raising canine: Cross-species parallels in parental investment. *Human-Animal Interactions Bulletin*, *1*(1), 38-54.
- Stoeckel, L., Palley, L., Gollub, R., Niemi, S., & Evins, A. (2014). Patterns of brain activation when mothers view their own child and dog: An fMRI study. *PLoS ONE*, *9*(10): e107205. doi:10.1371/journal.pone.0107205
- Straus, M. A., & Stewart, J. H. (1999). Corporal punishment by American parents: National data on prevalence, chronicity, severity, and duration, in relation to child and family characteristics. *Clinical Child and Family Psychology Review*, *2*(2), 55-70.
- Suzman, J. (2014). Sympathy for a desert dog. *NY Times online*, August 31, 2014. <http://opinionator.blogs.nytimes.com/2014/08/31/sympathy-for-a-desert-dog/>
Retrieved November 28, 2014.

- Thalmann, O., Shapiro, B., Cui, P., Schuenemann, V. J., Sawyer, S. K., Greenfield, D. L. ... Wayne, R. K. (2013). Complete mitochondrial genomes of ancient canids suggest a european origin of domestic dogs. *Science*, 342(15), 871-874.
- Turner, H., & Finkelhor, D. (1996). Corporal punishment as a stressor among youth. *Journal of Marriage and Family*, 58(1), 155-166.
- Unknown. (1821). *The New-York Literary Journal, and Belles-lettres Repository: 4*; C.S. Van Winkle: New York, New York.
- Wolfradt, U., Hempel, S., & Miles, J. (2002). Perceived parenting styles, depersonalisation, anxiety and coping behaviour in adolescents. *Personality and Individual Differences*, 34, 521-532.
- Zinser, L. (2014). Adrian Peterson agrees to plea deal in child-abuse case. *New York Times*, http://www.nytimes.com/2014/11/05/sports/football/vikings-adrian-peterson-reaches-plea-deal-in-child-abuse-case.html?_r=0, Retrieved March 2, 2015.

Shelly L. Volsche

Curriculum Vitae – April 2015

Department of Anthropology
University of Nevada, Las Vegas
4505 Maryland Parkway, Box 455003
Las Vegas, NV 89154-5003
702-738-2181
volsche2@unlv.nevada.edu

Education

M.A. Anthropology *in progress*
University of Nevada – Las Vegas

Emphasis on biocultural anthropology and anthrozoology.

B.A. Psychology May 2013
University of Nevada – Las Vegas

Course work focused on experimental topics; neuroscience, biology of behavior, perception, learning, and comparative studies.

Professional Positions

Graduate Assistance 2014 - current
University of Las Vegas, Nevada – Graduate College

Provide research, academic, and administrative support to assigned professors. This has included statistical analysis, exam proctoring and grading, research writing, and independent instruction of undergraduate students.

Distance Education Instructor / Web Lecture Moderator 2012 - 2014
e-Training for Dogs, Inc.

Develop, record, and deliver multi-media, distance education materials. Provide guidance and grading to students attending the courses.

Areas of Specialization and Current Research

- Evolution of attachment from a biocultural perspective
- Human-animal interactions/anthrozoology
- Voluntarily “childfree” populations
- I am currently working on
 - Human-canine attachment and its interplay with a variety of factors
 - Cross-cultural research of romantic displays
 - The influence of gender and sexual orientation on human attachment to pets

Grants and Awards

- Podium Presentation: Second Place** (\$125) March 2015
University of Nevada, Las Vegas, Graduate & Professional Student Association Research Forum
- Graduate and Professional Student Association** (\$250) December 2014
University of Nevada, Las Vegas, Conference Travel
- Friends of World Anthropology** (\$200) November 2014
University of Nevada, Las Vegas, Department of Anthropology, Conference Travel
- Podium Presentation: Honorable Mention** (\$) March 2014
University of Nevada, Las Vegas, Graduate & Professional Student Association Research Forum
- Graduate and Professional Student Association** (\$200) December 2013
University of Nevada, Las Vegas, Research Grant
- Patricia Rocchio Scholarship** (\$377) December 2013
University of Nevada, Las Vegas, Department of Anthropology, Research Award
- Best Undergraduate Pecha Kucha** (\$50) May 2013
University of Nevada, Las Vegas, Anthropology Research Forum, Pecha Kucha Presentation

Publications

- Jankowiak, W., **Volsche, S.**, & Garcia, J. (in press). Is the romantic/sexual kiss a near human universal? *American Anthropologist*. 2015
- Jankowiak, W., Shen, Y., Yao, S., Wang, C., & **Volsche, S.** (In press). What a cognitive study of Chinese youth's understanding of love reveals about the cross-cultural core features of love. *Cross-Cultural Research*. 2015
- Gray, P., **Volsche, S.**, Garcia, J., & Fisher, H. (in review). The Roles of Pet Dogs and Cats in Courtship and Dating. *Anthrozoös*. 2014
- Jankowiak, W., & **Volsche, S.** (In review). Investigating love's universal attributes: A research report from China. *OAbilib*. 2014
- Manheim, D. & **Volsche, S.** (2012). Public pet: A class curriculum for the real world. *The APDT Chronicle of the Dog, November/December 2012*, 21-23. 2012
- Volsche, S. (2012). Taking the show on the road: Going public with private clients. *The APDT Chronicle of the Dog, November/December 2012*, 43-44. 2012

Presentations

- "Is the Romantic/Sexual Kiss a Human Universal?" 2015 Graduate and Professional Student Association Research Forum. Las Vegas, Nevada. March 2015. 2015
- "Is the Romantic/Sexual Kiss a Human Universal?" 2015 Meeting for the Society for Cross-Cultural Research. Albuquerque, New Mexico. February 2015. 2015

“Fur Babies: From Wolf to Child.” Invited speaker. e-Training for Dogs, Inc. Online presentation. May 2014.	2014
“Interspecific Cooperative Signaling: Is it as different as cats and dogs?” University of Nevada, Las Vegas, Anthropology Research Forum. Las Vegas, Nevada. May 2014.	2014
“I Love My Dog: Influences on the Human-Canine Bond.” University of Nevada, Las Vegas, Graduate & Professional Student Association Research Forum. Las Vegas, Nevada. March 2014. <i>Honorable Mention.</i>	2014
“Parenting Our Dogs: How humans are applying parenting strategies to dogs and what it means to the dog training community.” University of Nevada, Las Vegas, Anthropology Research Forum. Las Vegas, Nevada. May 2013. <i>Best Undergraduate Pecha Kucha.</i>	2013
“Ethics for Dog Trainers: Keeping professional in an unregulated industry.” Invited speaker. e-Training for Dogs, Inc. Online presentation. February 2013.	2013
“Marketing Your Dog Training Business: or “The dirty work of business building.” Invited speaker. Online presentation. February 2013.	2013

Memberships

Phi Kappa Phi	2015 - current
International Society of Anthrozoologists <i>Student Member</i>	2014 - current
Lambda Alpha <i>National and Local Member</i>	2013 - current

Teaching Experience

- Graduate Assistant
 - COLA100 – Class coverage for supported professor
 - ANTH102 – Class coverage for supported professor
- Distance Education Instructor
 - CPDT-KA Fundamentals: A Preparation Course for the Certified Professional Dog Trainer – Knowledge Assessed Exam
 - Teaching Canine Scent Work: Skills and Curriculum Development

Technical Training and Certifications

- SPSS Statistics Package, V19.0 and higher
- Certificate in Technical Communications
Includes document preparation, APA editing
- Advanced knowledge of graphic design software and concepts

Editorial Service and Volunteer Activities

2015 Anthropology Research Forum <i>Abstract Review Committee</i>	2015
Museum Volunteer <i>Marjorie Barrick Museum</i>	2015 - current
APA Style Editor <i>Human-Animal Interactions Bulletin</i>	2013 - current
Art Director <i>The APDT Chronicle of the Dog</i>	2011 - 2012