



AN ABSTRACT OF THE THESIS OF

Vanessa M. Hajek for the Master of Science

in Psychology presented \_\_\_\_\_

Title: The Effect of Watching a Large or Small Pseudo Shelter Dog Sit on Command on College Students' Self-rated Willingness to Adopt

Abstract approved: \_\_\_\_\_

This study investigated the effects of watching a large or small pseudo shelter dog sit on command in a shelter environment on college students' self-rated willingness to adopt. This study also investigated whether participants make use of information presented on cage cards of shelter dogs' kennels. Participants were 80 undergraduate Emporia State University (ESU) students. Researchers introduced students to two dogs in outdoor runs appearing as shelter dogs at the Humane Society of the Flint Hills in Emporia, KS. There were four conditions, including conditions where students saw the small dog sit on command (SM SIT), the large dog sit on command (LG SIT) or control conditions where either dog did not sit (i.e., SM NO SIT and LG NO SIT). I took students one by one to the adjacent outdoor runs housing the pseudo shelter dogs and briefly introduced each dog. For the SM SIT conditions, I asked the small dog to sit on command. For the LG SIT conditions, I asked the large dog to sit on command. For either the SM NO SIT and LG NO SIT trials, I let the dogs behave naturally (i.e., I did not give the dogs a command to sit). After each student viewed both dogs, another researcher administered the Shelter Dog Survey. Results indicate neither a dog's size or behavior influence willingness to adopt. Willingness to adopt was not significantly greater amongst participants who saw pseudo shelter dogs sit on command. Likewise, there was no significant difference between willingness to adopt the large dog sitting on command and willingness to adopt the small dog sitting on command.

THE EFFECT OF WATCHING A LARGE OR SMALL PSEUDO SHELTER DOG  
OBEY A COMMAND ON COLLEGE STUDENTS' SELF-RATED WILLINGNESS  
TO ADOPT

---

A Thesis

Presented to

The Department of Psychology  
EMPORIA STATE UNIVERSITY

---

In Partial Fulfillment  
of the Requirements for the Degree  
Master of Science

---

By

Vanessa M. Hajek

July 2016

---

Approved for the Department of Psychology

---

Approved by the Dean of the Graduate  
School and Distance Education

## ACKNOWLEDGMENTS

Thank you to the dogs that have been, and continue to be, my life.

Thank you to my parents Dale, and Lynell Hajek, and my grandparents, Marvin and Shirley Jensen, for providing me with unyielding support and the opportunities to cultivate my passion for dogs. My eternal gratitude goes out to Dr. Cathy Grover for stepping into the unknown and allowing me to study dogs during my time at Emporia State University, and a special nod of thanks to Dr. Carol Daniels for allowing me to use her Cavalier King Charles Spaniel, Maggie (#sciencefloof) for this study and Dr. Yancey for serving on my committee. I would also like to thank Monica Posada for her Word Skills, Julie Cockrum and Kristopher Stewart for their Excel magic, and my cohort members, Rachel Petersen, Henry Wijata, and Rachel R for their time and unwavering enthusiasm in my ability to pull this off. Lastly, a very special thank you to my “Dog Park Friends,” Elizabeth Norgren, Lori Rose, and Julie Brosemer, who always cheered me on and allowed me to groom their dogs during moments of frustration during this process. I could not have made it without you all.

TABLE OF CONTENTS

ACKNOWLEDGMENTS ..... iii

TABLE OF CONTENTS..... iv

LIST OF TABLES ..... vii

CHAPTER

1 INTRODUCTION.....1

    Review of the Literature .....3

        Length of Stay.....4

        Reasons to Adopt .....5

        Relinquishing Owners.....6

        Attachment and Method of Training.....8

        Behavioral Interventions with Shelter Dogs.....9

        Cage Card Information .....11

    Current Study .....11

        Research Questions.....12

        Hypotheses .....12

2 METHOD.....13

    Canine Subjects .....13

    Participants .....13

    Instrumentation.....16

    Design.....16

    Procedure.....17

3 RESULTS.....19

    Hypothesis 1 .....19

    Hypothesis 2 .....19

    Additional Analysis.....24

4 DISCUSSION .....	25
Hypothesis 1 .....	26
Hypothesis 2 .....	28
Additional Information.....	29
Limitations.....	31
Conclusions and Future Directions .....	32
REFERENCES .....	35
APPENDICES.....	40
ESU-ACUC Approval Letter .....	41
ESU-IRB Approval Letter.....	44
Informed Consent Form .....	45
Shelter Dog Survey .....	48
Debriefing Statement.....	52

LIST OF FIGURES

<u>FIGURE</u>		<u>PAGE</u>
1	Canine Subjects .....	14
2	Willingness to Adopt .....	21



LIST OF TABLES

<u>TABLE</u>		<u>PAGE</u>
1.	Frequency of Yes Answers By Group.....	15
2.	Amounts Participants Willing to Pay for Dog.....	24

## CHAPTER ONE

### INTRODUCTION

Shelter dogs do not have a great chance in life once they enter the shelter system in the United States. The American Society for the Prevention of Cruelty to Animals (ASPCA) reports that 1.2 of the 3.9 million dogs that enter ASPCA shelters on a yearly basis are euthanized. These numbers might not sound as high as one might expect, but it is important to keep in mind that the ASPCA is not the only organization of its kind in the United States—it is simply, the largest.

Despite the numbers released by the ASPCA, people often discount the horrors of kill shelters due to the recent prevalence of no-kill shelters and sanctuaries that house dogs until the end of their lives if no one adopts them. When people do acknowledge the reality of euthanasia within the shelter system, they mistakenly believe others are more likely to adopt than they really are (Mohan-Gibbons, Weiss, Garrison & Allison, 2014) or that only dogs with incurable medical conditions or untreatable aggression toward other dogs or humans end up euthanized; however, this is not the case. Euthanasia of healthy domestic dogs is still a prominent concern of kill-shelters today in the United States (Griffon, 2007). More concerning is the fact that available records pertaining to adoption and euthanasia rates often paint an inaccurate picture. People citing adoption rate records should not take these records at face value. An animal shelter boasting that it adopts out every “adoptable” dog that comes through its doors, might only be showing 10 of the 100s of dogs currently housed at its facility to the public. There is no universal system for shelters regarding the collection of these numbers, nor the manner in which shelters proclaim dogs as “adoptable” (i.e., dogs shown to the public as available for adoption)

dogs. Researchers have recently begun studying shelter dogs to piece apart factors leading to relinquishment or dogs not being adopted (i.e., phenotypic characteristics, behaviors, problem-behavior history, e.g., Brown, Davidson & Zuefle, 2013; Diesel, Brodbelt, & Pheiffer, 2010; Dolan, Scotto, Slater & Weiss, 2015; New et al., 2000; Weiss, Miller, Mohan-Gibbons, & Vela, 2012) and behavioral interventions (e.g., conditioning dogs to sit when a stranger approaches the kennel, make eye-contact with potential adopters, walk nicely on a leash and not jump on people) that might make a dog more adoptable (Howard & Reed, 2014; Leusher & Medlock, 2009; Protopopova & Wynne, 2015). Behavioral interventions aim to decrease what adopters might view as inappropriate in-kennel behavior or inappropriate out-of-kennel behavior.

A prevailing idea is that a trained dog is a more adoptable dog. Due to this, some programs focus on getting dogs to sit politely at the front of kennels when potential adopters walk through (Leuscher & Medlock, 2009; Protopopova & Wynne, 2015). The results on the effectiveness of these programs are mixed. Along this vein, no research in which a potential adopter watches a shelter dog listen to commands (i.e., indicating the dog is trained) currently exists. The aim of the present study is to investigate whether giving potential adopters the chance to see a shelter dog obey a command will influence the potential adopters willingness to adopt a dog.

In this study, undergraduate students walked through a local shelter with an experimenter following them while they looked at pseudo shelter dogs housed in two runs outside the shelter. Each dog knew how to sit on command in response to a verbal or visual cue prior to the study commencing. Depending on what group the participant was in, the experimenter commanded one of the dogs to sit. Participants then completed a

survey with questions pertaining to how willing they would be to adopt the dog they saw sit on command. In addition to assessing willingness to adopt, the survey also assesses how potential adopters make use of information displayed on the cage cards attached to shelter dogs kennels. Prior research indicates the information on these cards does not affect adoption (Leuscher & Medlock, 2009); however, little research has looked at whether a person uses this information while he or she is viewing the dogs.

A control group followed the same protocol with the exception of me asking the dog to sit. The dogs behaved naturally and the participants completed the same survey the experimental group completed. With this study, I hoped to find a way to increase potential adopters' willingness to adopt shelter dogs. One of the largest problems facing shelters right now is an inability to get dogs adopted out (i.e., placed in new homes) thereby increasing the euthanasia rate of otherwise adoptable animals.

### **Review of the Literature**

Animal shelters in the United States euthanize approximately 1.2 of the 3.9 million dogs that enter shelters each year (American Society for the Prevention of Cruelty to Animals, 2011). Unnecessary euthanasia of physically healthy and adoptable dogs due to space limitations and overcrowding is the prevailing preventable cause of death for pet animals in the United States (ASPCA, 2011). In order to address the problem of unnecessary euthanasia, it is prudent to determine what characteristics potential adopters look for in dogs when they adopt, shelter dog demographics, and what, if any, behavioral interventions might increase a potential adopter's willingness to adopt a dog (Patronek, Glickman, & Moyer, 1995).

## **Length of Stay**

Many shelter dogs reside in shelters for longer periods of time than the average shelter is designed to provide (Dalle Villa et al., 2013). This prolonged Length-of-Stay (LOS) contributes to the unnecessary euthanasia of dogs housed in kill shelters worldwide (Brown, et al., 2013; Protopopova, Mehrkam, Boggess, & Wynne, 2014). Researchers concerned with the welfare of pet dogs are looking into possible factors that may increase LOS and behavioral interventions that may decrease LOS while facilitating adoption (Brown, et al., 2013; Protopopova, Gilmour, Weiss, Shen, & Wynne, 2012; Protopopova & Wynne, 2015; Thorn, Templeton, Van Winkle, & Castillo, 2006).

Phenotypic characteristics such as age, sex, size, breed group and coat color are shown to affect LOS in shelter dogs (Brown, et al., 2013; New, al., 2000). Brown et al. (2013) combined data from two New York animal shelters on age, sex, size, breed group, coat color, and variable interactions for 1,266 shelter dogs. Researchers divided dogs into four size categories (Extra-Small, Small, Medium, and Large) 10 breed groups (Lap, Spitz, Sporting, Terrier, Bully, Companion, Giant, Guard, Herding, and Hound) and three primary coat colors (light, medium, or dark). Extra-Small dogs had the shortest LOS with no difference in LOS between Extra-Small and Small dogs or Medium and Large Dogs. For puppies, size did not affect LOS. Alternatively, breed group does affect LOS in dogs with Giant breeds having the shortest LOS (20.8 days), and guard breeds having the longest at 59.8 days (Brown, et al., 2013).

Of interest, breed group also affects LOS in puppies with puppies in the lapdog group staying an average of 13.0 days, whereas puppies in the terrier group stay an average of 67.3 days. Primary coat color appears not to affect LOS. Overall, LOS of

dogs in no-kill shelters is roughly eight times as long as LOS for dogs in kill shelters. Of important note is that breed identification is often highly subjective when based on phenotypic characteristics (Hoffman, Harrison, Wolf, & Westgarth, 2014) and that shelter policy might be skewing these results. Adoption is more common for dogs in no-kill shelters regardless of LOS, whereas euthanasia is more common for dogs in traditional shelters (Protopopova, et al., 2014). Although knowing about the phenotypic characteristics that might increase a shelter dog's LOS is useful information, it is also important to look at the initial reasons people adopt dogs from shelters to begin with.

### **Reasons to Adopt**

Adopters visiting five shelter organizations completed surveys containing questions regarding reasons for pet selection, type of information received, and the animals' behavior upon first observation (Weiss, et al., 2012). Shelter staff asked 1,599 adopters to complete surveys immediately after adopting their pet. Overall, 1,491 adopters completed surveys upon adopting their pet. Self-report indicated appearance was the most important factor for potential adopters when adopting an adult dog or a puppy. This contrasts with other research indicating age, size, breed, and behavior were crucial in the decision to adopt a dog (Normando, Cinzia, Lieve, Couitis, & Bono, 2006; Sietou, Fraser, I. M., & Fraser, R. W., 2013). The researchers did not ask adopters to specify behaviors most important to the adoption choice, but most adopted dogs displayed approach-oriented and greeting behaviors (Normando et al., 2006). The importance of appearance for dog adoption might be due to the great diversity in dog breeds. Special adoption offers had no effect on adoption (Normando, et al., 2006).

Leuscher and Medlock (2009) suggest shelter volunteers working with dogs on positive training for 20 min a day increases the chances of adoption. In countries where shelters are banned from euthanizing dogs, such as Italy, a program exists which trains, socializes, and advertises available dogs. In line with the Leusher and Medlock (2009) findings, this program provides a higher adoption rate than traditional adoption procedures (Menchetti, Mancini, Catalani, Boccini, & Diverio, 2015). Other research suggests a general need for consultants with expertise in psychology and animal behavior to work within shelters to establish behavioral training programs (Tuber et al., 1999). Although limited research exists outside of phenotypic characteristics about why people adopt dogs, a great deal of past and present research is looking into why owners relinquish shelter dogs.

### **Relinquishing Owners**

Pet relinquishment can account for 25 – 50% of shelter intake in most communities (Salman, New, Kass, Ruch-Galle, & Hetts, 1998). Understanding why owners are relinquishing is paramount to attempting to address this problem (Salman et al., 1998; New, et al., 2000). Research indicates the reasons owners relinquish have possible solutions, such as veterinary costs, inability to pay for dog's daily needs, a lack of knowledge about relinquishment alternatives, and the inability to locate pet-friendly housing (Dolan, et al., 2015; Weiss et al., 2014).

Researchers administered a survey to 2,092 owners relinquishing 2,631 dogs to 12 United States Animal Shelters with items containing inquiries on the characteristics of the incoming animal, the person relinquishing the animal, frequency of certain behaviors in the animal, and the relinquisher's general animal knowledge (New et al., 2000).

Results indicate owners are more likely to relinquish dogs to U.S. Animal Shelters if the dogs are young, sexually unaltered, owned for a shorter period, acquired from friends at no cost, or acquired from a Pet Store (New et al., 2000). Another study found behavior problems to be the main reason owners relinquished male dogs, and that if another adopter returns the dog, the same behavior problem contributed to the decision (Mondelli, et al., 2010).

Research looking at the reasons owners relinquish dogs or reasons dogs are not adopted from shelters might help shelter staff better formulate programs to increase adoption of dogs less likely to be adopted (Lepper, Kass, & Hart, 2010). Dogs owner-rated as overactive and destructive have a higher chance of relinquishment. New et al. (2000) found relinquishing owners perform less well on questions related to general animal knowledge. For example, over half (51.2%) of the relinquishing dog owners believed female dogs need to have a litter before being spayed, and to a lesser extent believed a dog is acting out of “spite” when engaging in certain types of behavior (i.e., soiling the carpet when the person leaves the house). A deficit in general knowledge about dogs and cats might be contributing to unrealistic expectations and inappropriate actions when an owner is attempting to eradicate a problem behavior, as well as negatively impacting owner and dog attachment levels (Kwan & Bain, 2013; New et al., 2000). Dog owners develop an attachment with their dogs via engaging in activities that engender interest and emotional closeness, and by possessing knowledge about their dog and their dog’s care (Serpell, 1996).



### **Attachment and Method of Training**

Training is one activity with the potential to have either a positive or negative effect on attachment between owner and dog (Kwan & Bain, 2013). Kwan and Bain (2013) looked at the effect of training time and training methods (i.e., whether training methods are positive reinforcement or punishment-based) on attachment levels to their dogs and found the increased stress and problem behaviors associated with aversive training lead to a weakened attachment between relinquishing owners and their dogs. Owners using aversive training methods reported more stress, aggression, anxiety, and house soiling (Kwan & Bain, 2013) which overlaps with reasons owners give for relinquishing dogs (New et al., 2000). This might suggest owners relinquishing dogs employ aversive training methods more often than non-relinquishing owners. In contrast, a separate study did not find decreased attachment amongst relinquishing owners, but did indicate an increase in owners' levels of perceived stress, (Dolan, et al., 2015).

Relinquishing owners are more likely to keep their dogs outside 100% of the time and owners less satisfied with pet behavior score lower on pet attachment (Kwan & Bain, 2013). Considering all dog owners (both relinquishing and continuing) those that use collars for punishment-based methods rate themselves as less satisfied with their dog's overall behavior and leash-walking behavior. However, research does not indicate relinquishing owners are more likely to have used punishment-based methods in the past (Kwan & Bain, 2013). What differs is the frequency (not duration) of use with punishment-based methods, that is, relinquishing owners use punishment-based methods more often. Whether owners use punishment-based methods because of the dog's behavior, or whether the use of these methods causes the problem behavior is unclear.

Due to owners relinquishing dogs for problem behaviors, researchers have instigated behavioral intervention programs in shelters to help shelter dogs display behaviors adopters consider appropriate (i.e., not problem-behaviors) during the adoption process (Leuscher & Medlock, 2009; Protopopova, et al., 2014; Protopopova & Wynne, 2015).

### **Behavioral Interventions with Shelter Dogs**

A variety of approaches exists for executing behavioral interventions in shelter dogs. To determine the feasibility of conditioning shelter dogs to sit on command in a shelter environment, Thorn and colleagues (2006) trained shelter dogs to sit when a stranger approached. Results indicate that short training sessions (10 - trials) with both contingent and non-contingent reinforcement were effective for training shelter dogs to sit and that dogs retain this behavior over two days (Thorn et al., 2006) did not affect adoption. Continuing this research, Leuscher and Medlock (2009) split dogs into a Trained and a Not Trained group and worked with the trained group of dogs once per day to walk nicely with a head halter, approach the front of the kennel when a person approached, walk nicely on a leash, sit on command, and not jump on people. The non-trained group of dogs received no training. Adoption occurred at a higher rate for dogs in the trained group than for dogs in the non-trained group suggesting training shelter dogs increases adoptability. Of note, the authors did not account for breed, size, or color of dogs. The problem is that shelters often do not have the time to train dogs.

Socialization and training appear to make shelter dogs more adoptable, but the process of providing steps for socialization and training is difficult for time-constrained, underfunded shelters (Thorn & Templeton, 2009), although research shows that social learning amongst shelter dogs may increase the rate of learning. Thorn and Templeton

(2009) divided 14 dogs into two conditions, the No Observe (NO) group, that did not observe other dogs performing a behavior, and the Observe (O) group, that watched other shelter dogs get food rewards for sitting when a stranger approached the kennel. Latency of time to sitting decreased for the O dogs as compared to the NO dogs, and the O dogs learned to sit faster in response to a discriminative stimulus (approaching stranger) than the other dogs. These results indicate that one way around the time-constraints incumbent upon shelters is the training of multiple shelter dogs with one dog and multiple staff might be possible for understaffed shelters (Thorn & Templeton, 2009).

A recent study by Protopopova and Wynne (2015) attempted to increase the adaptability of shelter dogs by training them to make eye contact with people that approached their kennels using response-dependent and response-independent methods. Ultimately, they found that increased eye contact did not affect adoption. In sum, research regarding the effect of shelter dogs displaying appropriate behavior during the adoption process is mixed. Potential adopters do, however, appear to benefit from structured play sessions with shelter dogs they are interested in, and do not find the sessions intrusive (Protopopova, Brandifino & Wynne, 2016). Such measures would require minimal resources and might be a good option for large or small shelters alike to increase adoptions. This research is based on findings that shelter dogs who actively engage in playing when a potential adopter initiates it, are more likely to be adopted (Protopopova & Wynne, 2014). One avenue not explored very much in prior research is whether or not participants make use of cage cards containing information about the dog placed on the kennels of shelter dogs.

### **Cage Card Information**

Leuscher and Medlock (2009) conducted the only study investigating how potential adopters use manipulated information placed on cage cards when making an adoption decision. They manipulated information about the dog's training history by including statements such as, "I have been trained," or, "I have not been trained."

Adopters claimed the statements did not affect their adoption decision. Despite this research, no research exists on how adopter's use the rest of the information cage cards commonly present (i.e., dog's breed or cross, age, health status, and reason for being at the shelter), or whether adopter's read the cage cards at all.

### **Current Study**

To address a relative dearth in shelter dog literature about what might increase a potential adopter's willingness to adopt a dog, this study sought to examine the effect of watching a shelter dog obey a command on self-rated willingness to adopt. In shelter dog research, most studies have focused on behavioral interventions addressing appropriate, yet unprompted (i.e., behavior that occurs naturally with no cue involved) in-kennel behavior. This behavior does not offer any information to the potential adopter about how trained the shelter dog may be, however, seeing a dog obey a command does offer useful information on this subject. In line with whether knowing a dog will obey a command increases willingness to adopt, I also sought to understand what information potential adopters make use of when reading cage cards commonly placed on shelter dogs' kennels.

## Research Questions

Based on the previous research, I developed the following questions and hypotheses:

Research question 1: Will watching either a large or small pseudo shelter dog either obey a command to sit or behave naturally influence college students' self-rated willingness to adopt?

Hypotheses 1: College students who see the large dog sit on command will report greater willingness to adopt than college students who see either the large shelter dog behaving naturally, the small dog behaving naturally, or the small dog sitting on command.

Research question 2: Do college students self-report they are likely to read cage cards placed on a shelter dogs' kennels?

Hypothesis 2: College students will indicate they are likely to read information contained on the cage cards of shelter dogs.

## CHAPTER TWO

### METHOD

This research project sought to explore one possible way to accomplish increasing willingness to adopt. I investigated this by allowing potential adopters to view a dog posing as a shelter dog (i.e., pseudo shelter dog) sitting on command or behaving naturally. To accomplish this, I used the following methodology.

#### **Canine Subjects**

The canine subjects were two medically sound, experimentally naïve pseudo shelter dogs owned by myself and a psychology faculty member at Emporia State University. Canine subjects consisted of a 4-year old Blenheim (i.e., orange and white) Cavalier King Charles Spaniel (Maggie) and a 9-year old orange and white Brittany (Paris; Figure 1) Prior to the experiment, owners trained both dogs to sit in response to a verbal and visual cue. I received approval from Emporia State University Institutional Animal Care and Use Committee (ESU-IACUC-16-001, Appendix A) for this project.

#### **Participants**

Participants included 24 men and 55 women aged between 17 to 43 years ( $M = 21.05$ ,  $SD = 4.70$ ) currently enrolled as Emporia State University undergraduate students (50 Freshmen, 15 Sophomores, five Juniors, six Seniors, and three other) during the 2016 spring semester. Each participant provided demographic information about their personal experience with dogs (Table 1). One participant neglected to fill out demographic information. I received Emporia State University Institutional Review Board (ESU-IRB-16050, Appendix B) approval for this project. All participants read and signed an informed consent form before partaking in the study (Appendix C).



*Figure 1. Canine subjects. Paris (left) and Maggie (right).*

Table 1

*Percentages of Yes Answers by group*

	Small Dog		Large Dog	
	Sit	No Sit	Sit	No Sit
I currently own a dog	80.00	60.00	63.16	78.95
I prefer large dogs	78.95	63.64	66.67	76.47
I prefer small dogs	50.00	40.00	42.11	50.00
I have owned at least one dog in the past	95.00	90.00	94.74	100.0
I or my parents when I was a child have adopted a shelter dog	55.00	35.00	47.37	80.00
I would consider someday adopting a shelter dog	100.0	95.00	100.0	95.00
I have experience training my own dog	85.00	50.00	78.95	80.00
I have experience training other dogs that are not my own	20.00	25.00	15.79	10.00
I have been injured by a dog	20.00	20.00	31.58	20.00
I prefer other types of pets	45.00	35.00	15.79	40.00



## **Instrumentation**

I used a two-page novel Shelter Dog Survey (Appendix D) with seven items about the dog the participants saw (e.g., “If my personal circumstances would allow me to own a dog, I definitely would adopt this dog.”). One survey was about the large dog, and the other survey was about the small dog. There were three demographic items (gender, age, classification) and seven items about the participants’ dog experiences (e.g., “I would someday consider adopting a shelter dog”). I chose to assess personal dog experience to have more information about how the participants viewed and interacted with dogs in general, as this could affect how participants viewed the dog in the shelter. Also included in the survey was the item “If my personal circumstances would allow me to own a dog, I definitely would adopt this dog” on a five-point scale from 1 (strongly disagree) to 5 (strongly agree). Questions about dog experience were close-ended, fixed response questions where participants chose either yes, or no. Fixed-response items from this survey included “When I was a child, I or my parents adopted a shelter dog.” This survey also assessed use of cage card information about a shelter dog’s training history, breed, age, and health displayed on cage cards of a kennel with a seven-point scale from 1 (not likely) to 7 (very likely).

## **Design**

This study utilized a completely randomized 2 x 2 Factorial design. The pseudo shelter dogs that comprised the SIT and NO SIT conditions were not available for adoption from the Emporia Animal Shelter. The independent variable was whether the pseudo shelter dog sat on command (SIT) or behaved naturally (NO SIT) and the size of the pseudo shelter dog, small (SM) or large (LG). The dependent variable for hypothesis

1 was the potential adopter's self-rated willingness to adopt the dog based on answers to a survey completed after participants walked through the run area. The survey also assessed participant's use of information contained on cage cards.

### **Procedure**

Assistant researchers assigned participants to one of four groups using a random number table (Weaver, 2013). Two groups involved a small dog either sitting on command in a shelter environment (SM SIT) or behaving naturally in a shelter environment (SM NO SIT). The other two groups involved a large dog (LG) sitting in a shelter environment (LG SIT) or behaving naturally in a shelter environment (LG NO SIT). Participants had the opportunity to earn course credit for their participation.

In the SIT groups (regardless of whether the pseudo shelter dog was large or small) a participant walked into an outdoor kennel area adjacent to the shelter with two separate enclosures sometimes used to hold dogs relinquished to the shelter. During the study, these two runs did not contain shelter dogs (i.e., only the canine subjects were in the runs). Both dogs already knew how to sit on command when presented with a verbal and visual cue. I followed each participant as they walked past the runs to look at the pseudo shelter dogs. In the SIT groups, when the participant arrived at the kennel containing the correctly-sized pseudo shelter dog, I introduced the dog and gave a short back story indicating the dog's owner surrendered the animal. I then asked the dog to sit with a simultaneous verbal cue ("Dog's Name, sit) and nonverbal cue (i.e., raise hand from waist level, to chest level, with palm facing in). Once the dog sat, I praised the dog verbally, (i.e., "Good Dog") and gave the dog a hot dog slice. Only the small dog sat during the SM SIT trials, and only the large dog sat during the LG SIT trials. The

remaining canine subject behaved naturally. In the NO SIT groups, the only change was that the dogs behaved naturally (i.e., engaged in unprompted behavior). Afterward, another research assistant administered a Shelter Dog Survey (Appendix D) to all participants. Finally, I debriefed the participants (Appendix E).

## CHAPTER THREE

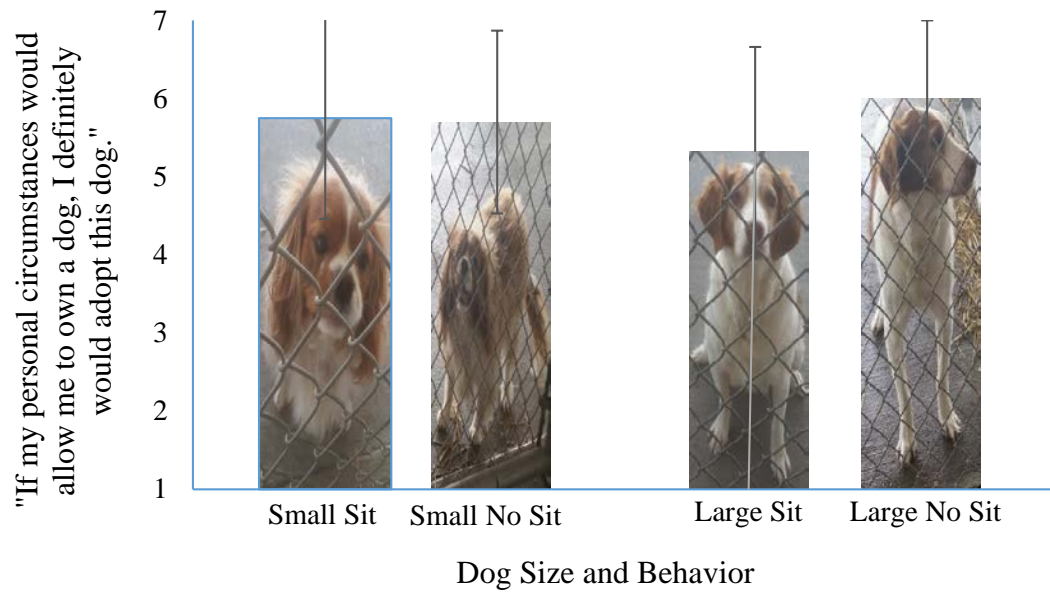
### RESULTS

#### **Hypothesis 1**

College students who see the large dog sit on command (LG SIT) reported greater willingness to adopt than college students who see either the large shelter dog behaving naturally (LG NO SIT), the small dog behaving naturally (SM NO SIT), or the small dog sitting on command (SM SIT). I performed a one-way ANOVA for the independent variable of Group, on the dependent variable Likert-scale responses to “If my personal circumstances would allow me to own a dog, I definitely would adopt this dog.” Group means (SM SIT:  $M = 5.75$ ,  $SD = 1.29$ ,  $n = 20$ ; SM NO SIT:  $M = 5.70$ ,  $SD = 1.17$ ,  $n = 20$ ; LG SIT:  $M = 5.32$ ,  $SD = 1.34$ ,  $n = 19$ ; LG NO SIT:  $M = 6.00$ ,  $SD = 1.00$ ,  $n = 21$ ; see Figure 2), were not significantly different,  $F(3) = 1.09$ ,  $p = .36$ . In other words, despite the differences in behavior and size, participants’ willingness to adopt was similar for all groups. Overall, participants slightly agreed that if they could, they would adopt the dog.

#### **Hypothesis 2**

College students indicated they are likely to read information contained on the cage cards of shelter dogs. I performed a one-way ANOVA for the independent variable Group on the dependent variable Likert-scale item, “How likely are you to read the cage cards placed on a shelter dog’s kennel that contain information, such as the dog’s name, breed, and age?” Group means: (SM SIT:  $M = 5.95$ ,  $SD = 1.28$ ,  $n = 20$ ; SM NO SIT:  $M = 6.00$ ,  $SD = 1.33$ ,  $n = 20$ ; LG SIT:  $M = 5.74$ ,  $SD = 1.58$ ,  $n = 19$ ; LG NO SIT:  $M = 6.34$ ,



*Figure 2.* Group means for willingness to adopt Likert-scale item by participants who saw the small dog sit on command ( $n = 20$ ), small dog behave naturally ( $n = 20$ ), large dog sit on command ( $n = 19$ ) or the large dog behave naturally ( $n = 21$ ). Higher scores indicate greater agreement. Error bars show standard deviations.

$SD = 1.28, n = 21$ ) were not significantly different,  $F(3) = 0.66, p = .57$ . Overall, the four groups of participants agreed they read the information on cage cards.

Out of all 80 participants, the most commonly read information contained on a cage card was age (84%), followed by sex (81%), breed (76%), the reason the prior owner surrendered the dog (76%), the name of the dog (70%) and commands the dog knows (56%). I further disaggregated by group. The most commonly read information for participants in the small dog groups is as follows. Percentages: Small Sit: breed (80%), name (80%), age (80%), sex (85%), commands dog knows (45%) and reason surrendered (70%); Small No Sit: breed (65%), name (70%), age (85%), sex (75%), commands dog knows (60%), surrendered (65%). For the large dog groups, the most commonly read information is as follows. Percentages: (LG SIT: breed (79%), name (79%), age (89%), sex (94%), command (68%), and reason surrendered (74%); LG NO SIT: breed (80%), name (52%), age (80%), sex (71%), commands dog knows (52%), and reason surrendered (95%).

### **Additional Analyses**

To determine whether the pseudo shelter dogs appealed to the participants, I performed a one-way ANOVA for the independent variable Group on the dependent variable Likert-scale item, "This dog appeals to me." Group means: (SM SIT:  $M = 5.75, SD = 1.29, n = 20$ ; SM NO SIT:  $M = 5.70, SD = 1.17, n = 20$ ; LG SIT:  $M = 5.32, SD = 1.34, n = 19$ ; LG NO SIT:  $M = 6.34, SD = 1.00, n = 21$ ) were not significantly different,  $F(3) = 1.09, p = .35$ ). In other words, there were no group differences regarding how appealing the pseudo shelter dogs were to participants. Generally, they found the dog appealing.

To determine whether participants would spend more time getting to know the pseudo shelter dogs better if they had more time, I performed a one-way ANOVA for the independent variable Group on the independent variable Likert-scale item, “If I had more time, I would enjoy getting to know this dog better.” Group means: (SM SIT:  $M = 6.10$ ,  $SD = 1.48$ ,  $n = 20$ ; SM NO SIT:  $M = 6.00$ ,  $SD = 1.21$ ,  $n = 20$ ; LG SIT:  $M = 5.79$ ,  $SD = 1.55$ ,  $n = 19$ ; LG NO SIT:  $M = 6.23$ ,  $SD = 1.09$ ,  $n = 21$ ) were not significantly different,  $F(3) = 0.39$ ,  $p = .75$ ). This indicates groups were similar with concerning whether they would enjoy getting to know the pseudo shelter dogs.

To determine whether participants would indicate more willingness to adopt if they knew the dog was going to be euthanized, I performed a one-way ANOVA on the independent variable Group for the dependent variable Likert-scale item, “If I knew this dog were to be euthanized tomorrow, I would be more likely to adopt it.” Group means: (SM SIT:  $M = 6.10$ ,  $SD = 1.48$ ,  $n = 20$ ; SM NO SIT:  $M = 6.35$ ,  $SD = .812$ ,  $n = 20$ ; LG SIT:  $M = 6.21$ ,  $SD = 1.08$ ,  $n = 19$ ; LG NO SIT:  $M = 6.28$ ,  $SD = 1.35$ ,  $n = 21$ ) were not significantly different,  $F(3) = 0.15$ ,  $p = .92$ ). All groups agreed they would be more likely to adopt if the dog were to be euthanized tomorrow.

The final item on the survey participants responded to was “Assuming I was going to adopt this dog; I would be willing to spend \$\_\_.00 on the adoption fee for this dog.” Mean, minimum, and maximum amounts each group was willing to pay are displayed in Table 2.

I assessed the item “If you are likely to read the cage cards, what information are you the most interested in learning about the dog? Circle all that apply.” The options were, dog’s breed or mix, dog’s name, dog’s age, dog’s sex, commands the dog knows,

Table 2

*Maximum and Minimum and mean amounts (\$) participants report willing to pay for adopting the pseudo shelter dog they saw.*

Willing to Pay	Small Dog		Large Dog	
	Sit ( <i>n</i> = 20)	No Sit ( <i>n</i> = 20)	Sit ( <i>n</i> = 19)	No Sit ( <i>n</i> = 21)
Maximum	200	100	150	250
Minimum	10	20	20	25
<i>M</i> ( <i>SD</i> )	69 (42.85)	66.5 (27.02)	65 (29.47)	84.25 (53.32)



and reason for surrender. I only calculated overall percentages because the manipulation in this study should have no effect on participants' general preferences. Seventy-six percent of participants reported interest in reading about a shelter dog's breed, 70% about name, 84% about age, 81% about sex.

To determine whether participants would be more likely to adopt a dog that already knows obedience commands, I performed a one-way ANOVA on the independent variable Group for the dependent Likert-scale item, "Would you be more likely to adopt a dog that had a cage card on their kennel saying the dog knew basic obedience commands, such as sit, down, and stay?" Group means: (SM SIT:  $M = 5.10$ ,  $SD = 1.12$ ,  $n = 20$ ; SM NO SIT:  $M = 5.35$ ,  $SD = 1.53$ ,  $n = 20$ ; LG SIT:  $M = 5.00$ ,  $SD = 1.41$ ,  $n = 19$ ; LG NO SIT:  $M = 6.28$ ,  $SD = 1.23$ ,  $n = 21$ ) were not significantly different,  $F(3) = 0.19$ ,  $p = .29$ ). The groups all indicated they would be likely to adopt a dog if they cage card indicated the dog knew basic obedience commands (i.e., sit, down, and stay).

## CHAPTER 4

### DISCUSSION

The purpose of this study was to examine the effects of pseudo shelter dog behavior and size on college-students' self-rated willingness to adopt. I randomly assigned participants to one of four groups containing a small dog sitting on command (SM SIT) or behaving naturally (SM NO SIT) or a large dog sitting on command (LG SIT) or behaving naturally (LG NO SIT) in a shelter environment. Only the small dog sat during the SM SIT trials, and only the large dog sat during the LG SIT trials. The remaining dog behaved naturally.

As each participant approached the pseudo shelter dogs, I gave a brief introduction containing the dog's name and made-up reason for surrender. Following the shelter walk-through, a research assistant administered the Shelter Dog Survey designed to assess willingness to adopt. I assessed willingness to adopt with the Likert-scale item, "If my personal circumstances would allow me to own a dog, I definitely would adopt this dog." Regardless of the differences in the pseudo shelter dog's behavior and size, participants' willingness to adopt was similar. Overall, groups slightly agreed that if they could, they would adopt the dog. I was also interested in cage cards placed on the kennels of shelter dogs. All four groups, similarly agreed they read cage cards.

#### **Hypothesis 1**

My prediction that college students who see the large dog sit on command would report greater willingness to adopt than college students who see either the large shelter dog behaving naturally, the small dog behaving naturally, or the small dog sitting on command was not supported. Prior research indicates small dogs are more likely to be adopted (New et al., 2000) and have a shorter Length of Stay (LOS) than larger dogs due

to a higher adoption rate (Brown et al., 2013; Hoffman, et al., 2014). For puppies, Brown et al. (2013) found size did not affect LOS, so it would appear size is only a factor in LOS when dogs are past the puppy stage (birth to 12 mos.). Both of the dogs in my study were past the puppy stage. One explanation for participants not rating themselves as more likely to adopt the smaller dog might be that participants did not have enough time to interact with the dogs before taking the Shelter Dog Survey. I did not permit participants to enter the run with the dogs, but many knelt down to talk to the dogs. It is possible being permitted a longer time to talk with the dogs might increase willingness to adopt a particular dog.

Most researchers did not control for the color of the shelter dogs used in their studies. I, however, can rule out color influencing willingness to adopt because the color was the same for both dogs (i.e., both dogs were orange and white) with the orange and white markings appearing in similar places (i.e., orange mask on face, white legs and feet). Both dogs were also similar in appearance because both the Brittany and the Cavalier King Charles Spaniel are spaniel-like in appearance. As far as behavior while obeying the command to sit, both dogs responded quickly and maintained eye contact. Researchers consider altering dog behavior in any way a behavioral intervention. Past research on the success of behavioral interventions aimed at increasing adoption rates for shelter dogs are mixed.

Some research suggests behavioral interventions, such as, conditioning shelter dogs to sit as adopters walk by and working with shelter dogs for 20 minutes daily raised adoption rates (Thorn et al., 2006). Even shelter dogs not currently being trained begin to offer the sit behavior after researchers condition other shelter dogs nearby, a bonus for

time-constrained shelters (Leuscher & Medlock, 2009; Thorn et al., 2006; Thorn & Templeton, 2009). Other research indicates even simple behavioral interventions such as reinforcing dogs for making eye contact with individuals stopping outside the kennel, having them alter in-kennel behavior or working with dogs on in-kennel behavior (i.e., not jumping on kennel doors, not pacing) does not have an effect on adoption rates (Protopopova & Wynne, 2015)

Despite these conflicting results, potential adopters continue to rate shelter dog behavior as an important factor when they are considering adopting a dog (Normando et al., 2006; Sietou et al., 2013) and problem behaviors are the top reasons owners relinquish dogs to shelters in the first place (Mondelli et al., 2010). Those results suggest behavior is an important consideration for potential adopters whether they are actively aware of it or not when adopting a dog. However, my findings did not support behavior having an effect on willingness to adopt. Participants who watched the pseudo shelter dog sit on command did not report increased willingness to adopt. Note that many of the participants mentioned they liked least the vocalizations of the large pseudo shelter dog. This is in line with Protopopova and colleagues (2014) research that in-kennel vocal behavior makes dogs undesirable to potential adopters and may increase LOS.

One possible explanation for not seeing group differences would be that the participants knew the study was about shelter dogs from the sign-up information. This was necessary because participants had to drive to the local animal shelter. Clearly, this information may have attracted individuals who like dogs and who were probably already willing to adopt dogs. All groups indicated a love of dogs. Another possible explanation for participants not rating themselves as more willing to adopt the pseudo shelter dogs

that sat on command may be due to the brevity of individual participant's exposure to the pseudo shelter dog. In the future, I would like to allow each participant more time to interact with the dogs.

I also I should have placed more emphasis on the fact the dogs possessed the capability to sit on command. Perhaps, choosing a command more interesting than sit (i.e. beg, roll over) might elicit more of an effect on willingness to adopt. There is currently no research on the topic of teaching shelter dogs tricks to increase adoption. Another avenue to explore is having the participant command the dog to perform based on the research indicating training increases attachment between person and dog (Kwan & Bain, 2013).

## **Hypothesis 2**

My findings do support that college students will indicate they are likely to read information contained on the cage cards of shelter dogs. Leuschner and Medlock (2009) found manipulating cage card information did not influence adoption decisions, according to participants. The questions on my survey relevant to cage cards assessed the use of cage cards in a different way than Leuschner and Medlock's 2009 study. Given my results indicating the importance of individual items commonly placed on cage cards (e.g., name, sex, age, etc.), it might be prudent for shelters to restructure the way information is presented on cage cards so the information a person is likely to want to read is at the top of the card. For example, according to my findings, shelters should place the dog's age, sex, and breed where the information will be readily apparent. Placing the most relevant information first might entice adopters to read cards partially, if not all the way through. This research indicates that people do make use of the cage cards

presented on the kennels of shelter dogs; however, I cannot infer how this information aids or does not aid in the adoption process. My finding that participants use cage card information about commands the shelter dog knows conflict with Leuscher and Medlock (2009) results indicating commands a dog knows are not primary concerns for most adopters.

### **Additional Information**

In general, all participants found their group-appropriate pseudo shelter dogs appealing. Recent research indicates appearance is the most important factor potential adopter's look at when deciding to adopt a dog (Normando, et al. 2006). Besides appearance interaction with the shelter dog may be very important. My participants agreed they would spend more time with the pseudo shelter dogs if they could. If the participants had played with the pseudo shelter dogs as participants did in the Protopopova and Wynne (2006) study, the participants might have been even more willing to adopt. Additionally, to increase adoption rates maybe shelters should indicate the shelter dogs' anticipated date of euthanasia, because my groups similarly agreed they would adopt the pseudo shelter dog if they knew it was going to be euthanized. Adoption fees are possibly another factor in adoption rates. Participants in my study indicated a willingness to pay anywhere from 25 to \$250 for their group-appropriate pseudo shelter dog. Research indicates that those who pay a smaller adoption fee for a shelter dog are more likely to relinquish the dog later (New et al., 2000) usually due to an inability to pay for the dog's costs of daily living (Dolan, et al., 2015; Weiss et al., 2014). Combined, these results indicate shelters might be better off charging higher adoption fees because people who are willing to pay are more apt to keep the dog. It is common knowledge that

shelters offer a discount on the adoption fee of dogs close to euthanasia; however, the people who pay less might be less able to afford the dogs. Anticipated euthanasia dates could be included on cage cards if participants use cage card information.

Leuscher and Medlock (2009) conducted the only study looking at information contained on cage cards, but this study dealt with manipulating the information participants saw. All my participants indicated they are likely to read information contained on cage cards. At this point, to my knowledge, no research exists on whether or not potential adopters read cage cards for general information when making an adoption decision. Most of my participants (76 to 84%) are likely to read the cage cards information pertaining dog's breed, mix, name, and age. This is consistent with Brown et al.'s (2013) finding that breed group does affect length of stay (LOS) in a shelter. According to those researchers, giant breeds have the shortest LOS and guard breeds have the longest. Perhaps, more research is needed on the use of cage cards.

In general, my participants indicated they are more likely to adopt a dog with a cage card stating commands the dog already knows. Prior research indicates that problem behaviors and disobedience are commonly the reason behind large dog relinquishment (Dolan et al., 2015, New et al., 2000, Scarlett et al., 1999). Although small dogs are owner-cited as having more behavior problems (Kwan & Bain, 2013; Weiss et al., 2012) small dog owners do not relinquish them to shelters as often for problem behavior (Arhant, Bubna-Littiz, Bartels, Futschik, & Troxler, 2010). When viewed in this light, it makes sense that potential adopters of large dogs place more importance on the commands large dogs know than the commands small dogs know. Adoption programs that focus on training shelter dogs before placement in new homes also have a higher

adoption rate than traditional adoption that does not include training (Menchetti, et al. 2015). The use of traditional, force-based training is more common with large dogs (Arhant et al., 2010), and research indicates this style of training decreases attachment between owner and dog while increasing problem behavior (Blackwell, Twells, Seawright, & Casey, 2008). Research shows feelings of attachment are crucial in the decision to relinquish a dog (Kwan & Bain, 2013) with increased feelings of attachment reducing the chance an owner will relinquish a dog to a shelter.

A final interesting finding is that 80% of the participants in the LG NO SIT group indicated yes to “I or my parents when I was a child have adopted a shelter dog”, whereas, only 55% of the SM SIT, 32% of the SM NO SIT, and 47.37% of the LG SIT indicated yes. This clearly suggests the random assignment did not equate the groups. Assuming the LG NO SIT participants had positive experiences with past adopted dogs, I might expect that would influence their willingness to adopt the pseudo shelter dog.

### **Limitations**

My study has several limitations. Due to miscalculation when randomizing the order of trials, the total amount of trial numbers for each group was off slightly, which prevented me from using a Factorial design. I intended to have 20 trials for each group (SM SIT, SM NO SIT, LG SIT, and LG NO SIT) but upon analysis, discovered only 19 trials in LG SIT, 21 trials in LG NO SIT, and 20 trials each for the SM SIT and SM NO SIT groups. For the dogs used in the trials, I was also unable to use real shelter dogs available for adoption.

My original proposal detailed how I would choose and use two shelter dogs (one large and one small) and condition them to sit using the same criteria Thorn et al. used in



their 2006 study. The Emporia shelter, due to space limitations, was unable to halt the adoption process for the two shelter dogs I chose, and adoptions were occurring too quickly for me to have time to train and ultimately use shelter dogs in this study. The remaining dogs at the shelter were unfit for use either for medical or behavioral reasons (i.e., resource guarding, dog-human or dog-dog aggression). I used a novel survey in this study, which is also a limitation.

No prior research contained a survey designed to assess willingness to adopt shelter dogs, so I designed an original survey. Unfortunately, due to time constraints, I was unable to run pilot studies to assess the reliability of the instrument. In addition, due to a variety of factors, I was unable to use actual shelter-goers as participants in this study.

As I previously mentioned, I used a convenience sample of college students attending Emporia State University. While responses to the survey indicated the participants liked dogs, it is probable that many participants were not looking to adopt a dog at the time of the study. Using potential adopters who have already decided they want to adopt a dog would be ideal for the nature of this study. I was unable to use potential adopters due the small size of the local shelter and the low (and unpredictable) numbers of potential adopters walking through the shelter on a given day.

## **Conclusions**

I have concluded from this study that watching a pseudo shelter dog sit on command did not appear to increase college students' self-rated willingness to adopt in my study. Future research is needed to determine specifically if size or behavioral manipulation differentially affects willingness to adopt.

I have also concluded participants in my study did rate themselves as likely to read cage cards. Many reported age, breed, and sex of shelter dog to be important. Shelters should consider restructuring the order of information on cage cards as well as what information is on the cards.

### **Future Directions**

Further research is needed to see if altering the type of behavior the shelter dog engages (i.e., having the dog perform a trick) will have a significant effect on willingness to adopt. Placing more emphasis on the fact the shelter dog is undergoing training and commands might benefit self-rated willingness to adopt. Also, it might be prudent to allow participants themselves to give the command for the shelter dog to follow. Protopopova and Wynne (2006) found structured play sessions between potential adopter and shelter dogs appear to increase adoption rates. In the future, I think this will be a promising area to explore for increasing willingness to adopt. I did not conduct this study using actual shelter dogs and pulled participants from a convenience sample of college students. A more accurate picture of willingness to adopt should involve actual shelter dogs and real shelter-goers interested in adopting.

Participants in the large dog groups appear to consider commands the dog knows and the reason surrendered more important than participants in the small dog groups. I would like to conduct another study to see if I can replicate these results. Follow up studies assessing why potential adopters of large dogs consider commands and reason for surrender more important compared to potential adopters of small dogs might help shelters to cater information about adoptable dogs to what the population for a certain size of dog appears to be interested in learning. In line with this, it might be advisable for

shelters to inquire about what attributes a potential adopter is looking for in a dog. For example, both of the dogs in my study shared similar breed characteristics, which allowed me to control for color, but might have alienated some participants who simply did not prefer dogs with spaniel-type characteristics.

Overall, future research should investigate various ways (e.g., behavioral interventions, novel adoption programs, structured play sessions) to increase willingness to adopt shelter dogs. Overcrowding of modern shelters is a growing societal problem unlikely to go away, and until someone discovers effective measures to increase adoption, overcrowding will continue to be a problem. A secondary line of pertinent research, currently not present in the shelter dog literature, is the use of cage card information by potential adopters. Further analysis on what information potential adopters want to see on cage cards would allow shelters to structure cage cards with the information potential adopters are the most interested in, first.

## REFERENCES

- American Society for the Prevention of Cruelty to Animals. 2011. Pet Statistics. Available at: <http://www.aspc.org/about-us/faq/pet-statistics>. Accessed September 2015.
- Arhant, C., Bubna-Littiz, H., Bartels, A., Futschik, A., & Troxler, J. (2010). Behavior of smaller and larger dogs: Effects of training methods, inconsistency of owner behaviour and level of engagement activities with the dog. *Applied Animal Behaviour Science*, *123*, 131–142.
- Brown, W., Davidson, J. P., & Zuefle, M. E. (2013). Effects of phenotypic characteristics on length of stay of dogs at 2 no-kill shelters. *Journal of Applied Animal Welfare Science*, *16*(1), 2–18. doi: <http://dx.doi.org/10.1080.10888705.2013.740967>
- Blackwell, E. J., Twells, C., Seawright, A., & Casey, R. A. (2008). The relationship between training methods and occurrence of behavior problems, as reported by owners, in a population of domestic dogs. *Journal of Veterinary Behavior*, *3*, 207–217. doi: 10.1016/j.veb.2007.10.008
- Garrison, L., & Weiss, E. (2015). What do people want? Factors people consider when acquiring dogs, the complexity of choices they make, and implications for non-human animal relocation programs. *Journal of Applied Animal Welfare Science*, *18*(1) 57–75. doi: <http://dx.doi.org/10.1080/10888705.2014.943836>
- Dalle Villa, P., Barnard, S., Di Fede, E., Podaliri, M., Candeloro, L., Di Nardo A., Siracusa, C., & Serpell, J. A. (2013). Behavioural and physiological responses of shelter dogs to long-term confinement. *Veterinaria Italiana*, *49*(2), 231–241.

- Dolan, E., Scotto, J., Slater, M., & Weiss, E. (2015). Risk factors for dog relinquishment to a Los Angeles municipal animal shelter. *Animals*, *5*, 1311–1328. doi: 10.3390/ani5040413
- Hoffman, C. L., Harrison, N., Wolff, L., & Westgarth, C. (2014). Is that dog a pit bull? A cross-country comparison of perceptions of shelter workers regarding breed identification. *Journal of Applied Animal Welfare Science*, *17*, 322–339. doi: 10.1080/1088870532014.895904
- Kass P. H., New J. C. Jr., Scarlett J. M., & Salman M. D. (2001). Understanding companion animal surplus in the United States: Relinquishment of nonadoptables to animal shelters for euthanasia. *Journal of Applied Animal Welfare Science*, *4*(4), 237–248.  
doi:[http://doi.org.emporiastate.idm.oclc.org/10.1207/S15327604jaws0404\\_0](http://doi.org.emporiastate.idm.oclc.org/10.1207/S15327604jaws0404_0)
- Kwan, J. Y., & Bain, M. J. (2013) Owner attachment and problem behaviors related to relinquishment and training techniques of dogs. *Journal of Applied Animal Welfare Science*, *16*(2), 168–183. doi: 10.1080/40888705.2013.768923
- Lepper, M., Kass, P. H., & Hart, L. A. (2002). Prediction of adoption versus euthanasia among dogs and cats in a California animal shelter. *Journal of Applied Animal Welfare Science*, *5*(1), 29–42.
- Leuscher, A. U., & Medlock, R. T. (2009). The effects of training and environmental alterations on the adoption success of shelter dogs. *Applied Animal Behavior Science*, *177*, 63–68.

- Menchetti, L., Mancini, S., Catalani, C. M., Boccini, B., & Diverio, S. (2015).  
RandAgiamo, a pilot project increasing adoptability of shelter dogs in the Umbria  
region (Italy). *Animals*, *5*, 774–792. doi: 10.3390/ani5030383
- Mohan-Gibbons, H., Weiss, E., Garrison, L., & Allison, M. (2014). Evaluation of a novel  
dog adoption program in two US communities. *Plos One*, *9*(3), doi:  
10.1371/journal.pone.0091959
- Mondelli, F., Previde, P., E., Verga, M., Levi, D., Magistrelli, S., & Valsecchi, P. (2004).  
The bond that never developed: Adoption and relinquishment of dogs in a rescue  
shelter. *Journal of Applied Animal Welfare Science*, *7*(4), 253–266.
- New, J. C., Salman, M. D., King, M., Scarlett, J. M., Kass, P. H., & Hutchison, J. M.  
(2000). Characteristics of shelter-relinquished animals and their owners compared  
with animals and their owners in U.S. pet-owning households. *Journal of Applied  
Animal Welfare Science*, *3*(3), 179–201.
- Normando, S., Cinzia, S., Lieve, A., Couitis, D., & Bono, G. (2006). Some factors  
influencing the adoption of shelter dogs. *Anthrozoos*, *19*(3), 211–224.
- Patronek, G. J., Glickman, L. T., & Moyer, M. R. (1995). Population dynamics and the  
risk of euthanasia for dogs in an animal shelter. *Anthrozoos*, *8*(1), 31.
- Protopopova, A., Brandifino, M., & Wynne, C. D. L. (2016) Preference assessments and  
structured potential adopter-dog interactions increase adoptions. *Applied Animal  
Behaviour Science*, *176*, 87–95. doi: 10.1016/j.applanim.2015.12.003
- Protopopova, A., Gilmour, A. J., Weiss, R. H., Shen, J. Y., & Wynne, C. D. L. (2012)  
The effects of social training and other factors on adoption success of shelter  
dogs. *Applied Animal Behaviour Science*, *42*(1–2), 61–68.

- Protopopova, A., Mehrkam, L. R., Boggess, M. M., & Wynne, C. D. L. (2014). In-kennel behavior predicts length of stay in shelter dogs. *Plos One*, doi: 10.1371/journal.pone.0114319
- Protopopova, A., & Wynne, C. D. L. (2015). Improving in-kennel presentation of shelter dogs through response-dependent and response-independent treat delivery. *Journal of Applied Behavior Analysis*, 48(3), 590–601.
- Protopopova, A., & Wynne, C. D. L. (2014). Adopter-dog interactions at the shelter: Behavioral and contextual predictors of adoption. *Applied Animal Behaviour Science*. 157, 409–416. doi: 10.1016/j.apppanim.2014.04.007
- Salman, M. D., New, J. Jr., Kass, P. H., Ruch-Galle, R., & Hetts, S. (1998). Human and animal factors related to relinquishment of dogs and cats in 12 selected animal shelters in the United States. *Journal of Applied Animal Welfare Science*, 1(3), 207–209.
- Scarlett, J. M., Salman M. D., New J. G. Jr., & Kass, P. H. (1999). Reasons for relinquishment of companion animals in United States animal shelters: Selected health and personal issues. *Journal of Applied Animal Welfare Science*, 2(1), 41–57. doi: [http://dx.doi.org/10.1207/s15327604jaws0201\\_4](http://dx.doi.org/10.1207/s15327604jaws0201_4)
- Serpell, J. A. (1996). Evidence for an association between pet behavior and owner attachment levels. *Applied Animal Behaviour Science*, 47(1-2), 49–60. doi: [http://doi.org.emporiasstate.idm.oclc.org/10.1016.0168-1591\(95\)01010-6](http://doi.org.emporiasstate.idm.oclc.org/10.1016.0168-1591(95)01010-6)
- Sietou, C., Fraser, I. M., & Fraser, R. W. (2014). Investigating some of the factors that influence “consumer” choice when adopting a shelter dog in the United Kingdom.

*Journal of Applied Animal Welfare Science*, 17, 136–147 doi:  
10.1080/10888705.2014883924

Thorn, M. J., & Templeton, J. J. (2009) Social learning in shelter dogs. *Journal of Veterinary Behavior*, 4(2), 78–79.

Thorn, M. J., Templeton, J. J., Van Winkle, M. M. K., & Castillo, R. R. (2006).  
Conditioning shelter dogs to sit. *Journal of Applied Animal Welfare Science*, 9(1),  
25–39.

Tuber, D. S., Miller D. D., Caris, K. A., Halter, R., Linden, F., & Hennessy M. B. (1999).  
Dogs in animal shelters: Problems, suggestions and needed expertise.  
*Psychological Science*, 10(5), 379–386.

Weaver, K. A. (2013). *Viva la difference in statistics*. Dubuque, IA: Kendall Hunt.

Weiss, E., Miller, K., Mohan-Gibbons, H., & Vela, C. (2012). Why did you choose this  
pet? Adopters and pet selection preferences in five animal shelters in the United  
States. *Animals*, 2, 144–159.

Weiss, E., Slater, M., Garrison, L., Drain, N., Dolan, E., Scarlett, J. M., & Zawistowski,  
S. L. (2014). Large dog relinquishment to two municipal facilities in New York  
city and Washington D.C.: Identifying targets for intervention. *Animals*, 4(3),  
409 – 433. doi: 10.3390/ani4030409



## Appendices

Appendix A  
ESU-ACUC Approval Letter

# EMPORIA STATE UNIVERSITY

November 18, 2015

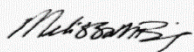
Dr. Cathv Grover / Ms. Vanessa Hajek  
Department of Biological Sciences  
Campus Box 31  
Emporia State University

Dr. Grover and Ms. Hajek,

Please be informed that the ESU Animal Care and Use Committee has received and reviewed your request for ESU-PROTOCOL-16-001, *The effect of watching large or small shelter dogs sit on command on college student's self-rated willingness to adopt.*

The committee has determined that this protocol complies with currently applicable standards for such studies as specified by Federal Regulations and ESU policy and therefore is approved. Please be aware that if any changes are to be made to the study the ACUC should be notified beforehand, and that the approval is for **one year** from the approval date of February 12, 2016. You will need to submit a letter to the ESU ACUC requesting an extension at least one month prior to February 12, 2016 in order to extend your proposed end date. Your approval number for this project is **ESU-IACUC-16-001**.

Best wishes with your research, and if you have any questions please contact me at your convenience.



Dr. Melissa Bailey  
Chair, ESU ACUC

Appendix B  
ESU-IRB Approval Letter

# EMPORIA STATE UNIVERSITY

■ GRADUATE SCHOOL AND  
DISTANCE EDUCATION

Research and Grants Center  
Campus Box 4003  
1 Kellogg Circle  
Emporia, Kansas 66801-5415  
620-341-5351  
620-341-5909 fax  
[www.emporia.edu/research](http://www.emporia.edu/research)

February 23, 2016

Vanessa Hajek  
Psychology  
Campus Box 4031, 1 Kellogg Circle  
Emporia, KS 66801

Dear Ms. Hajek:

Your application for approval to use human subjects has been reviewed. I am pleased to inform you that your application was approved and you may begin your research as outlined in your application materials. Please reference the protocol number below when corresponding about this research study.

Title:	The Effect of Watching Small or Large Shelter Dogs Obey a Command on College Student's Self-Rated Willingness to Adopt
Protocol ID Number:	16050
Type of Review:	Expedited
Time Period:	January 1, 2016 to January 1, 2017

If it is necessary to conduct research with subjects past this expiration date, it will be necessary to submit a request for a time extension. If the time period is longer than one year, you must submit an annual update. If there are any modifications to the original approved protocol, such as changes in survey instruments, changes in procedures, or changes to possible risks to subjects, you must submit a request for approval for modifications. The above requests should be submitted on the form Request for Time Extension, Annual Update, or Modification to Research Protocol. This form is available at [www.emporia.edu/research/irb.html](http://www.emporia.edu/research/irb.html).

Requests for extensions should be submitted at least 30 days before the expiration date. Annual updates should be submitted within 30 days after each 12-month period. Modifications should be submitted as soon as it becomes evident that changes have occurred or will need to be made.

On behalf of the Institutional Review Board, I wish you success with your research project. If I can help you in any way, do not hesitate to contact me.

Sincerely,



Dr. John Barnett  
Chair, Institutional Review Board

pf

cc: Cathy Grover

Appendix C  
Informed Consent

**Study Name:** It's a Dog's Life

**Faculty Researcher(s):** Dr. Cathy Grover    **Student Researcher(s)** Vanessa Hajek

**Telephone Number(s):** (620) 341-5813    **E-mail(s):** [cgrover@emporia.edu](mailto:cgrover@emporia.edu),  
[vhajek@emporia.edu](mailto:vhajek@emporia.edu)

The Department of Psychology and Special Education at Emporia State University supports the practice of protection for people participating in research and related activities. This study has been reviewed to determine that it poses little or no risk of harm to you. Any information obtained from you will be kept strictly confidential. Although you may be assigned an arbitrary participant number to assist in data collection, we assure you that neither your name nor participant number will be associated in any way with any reportable results. The following information is provided so that you can decide whether you wish to participate in the present study.

This study will investigate public perception of shelter dogs. You will walk through the Emporia Animal Shelter where Shelter dogs are housed and take a brief survey afterward. Participation should take approximately 45 minutes and will be worth one research point. Please place all communication devices on silent for the duration of this study and refrain from talking.

Please be aware that even if you agree to participate, you are free to withdraw at any time. If you do withdraw from the study, you may do so without penalty. You will gain no benefits by participating in this study other than educational (or credit if it is offered by your instructor), or whatever other options your instructor might offer. The researchers are obligated to tell you as much as you care to know about the study after your part in the study is complete. If you would like a written summary of the results, please include your name and address in the space provided, and the researchers will send you a copy when the results become available. ***You should be aware that even if you agree to participate, you are free to withdraw at any time, and that if you do withdraw from the study, you may do so without penalty.***

All persons who take part in this study must sign this consent form. In addition, person's under the age of 18 also must include the signature of a parent or legal guardian. Your signature in the space provided indicates that you have been informed of your rights as a participant, and you have agreed to volunteer on that basis.

*"I have read the above statement and have been fully advised of the procedures to be used in this project. I have been given sufficient opportunity to ask any questions I had concerning the procedures and possible risks involved. I understand the potential risks involved and I assume them voluntarily. I likewise understand that I can withdraw from the study at any time without being subjected to reproach."*

---

Signature of Participant

Date

For persons under the age of 18:

*“With my signature, I affirm that I have read and understand my child’s rights and the study described on the other side of this page, and voluntarily agree to allow my child (or legal guardian) to participate in this research study.”*

---

Signature of Parent or Guardian (if participant is a minor)

---

Date



Appendix D  
Shelter Dog Survey

**Dog's Name** \_\_\_\_\_

**This dog appeals to me.**

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

**If I had more time, I would enjoy getting to know this dog better.**

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

**If my personal circumstances would allow me to own a dog, I definitely would adopt this dog.**

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

**Assuming I was to adopt this dog, I would be willing to spend \$ \_\_\_\_\_.00 on the adoption fee for this dog.**

**If I knew this dog were to be euthanized tomorrow, I would be more likely to adopt it.**

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

**What did you like about the dog you saw? Check all that Apply**

Color

Size

Behavior

Breed

Face

Other: \_\_\_\_\_

**What did you dislike about the dog you saw? Please write your answer in the space provided.**

**How likely are you to read the cage cards placed on a shelter dog's kennel that contain information such as the dog's name, breed, and age?**

1	2	3	4	5	6	7
Not likely at all			Neutral			Very likely

**If you are likely to read the cage cards, what information are you the most interested in learning about the dog? Circle all that apply.**

Dog's breed or mix

Dog's name

Dog's age

Dog's sex

Commands the dog knows  
to shelter

Reason dog was surrendered

**Would you be more likely to adopt a dog that had a cage card on their kennel saying the dog knew basic obedience commands (such as, sit, down, and stay)?**

1  
Not likely  
at all

2

3

4  
Neutral

5

6

7  
Very  
likely

What is your favorite kind (breed) of dog? Please write your answer in the space provided.

**Please complete the following about yourself:**

**Gender:** Man Woman Other \_\_\_\_\_

**Age:** \_\_\_\_\_ years

**Classification:**

Freshman Sophomore Junior

Senior

Other: \_\_\_\_\_

1. **I currently own a dog.**

YES NO

2. **I love dogs.**

1 2 3 4 5 6 7  
Strongly Disagree Neutral Strongly Agree

3. **I prefer large dogs**

YES NO

4. **I prefer small dogs**

YES NO

5. **I have owned at least one dog in the past.**

YES NO

6. **I or my parents when I was a child have adopted a shelter dog.**

YES NO

7. **I would consider someday adopting a shelter dog.**

YES NO

8. **I have experience training my own dog**

YES NO

9. **I have experience training other dogs that are not mine.**

YES NO

10. **I have been injured by a dog.**

YES NO

11. **I prefer other types of pets:**

YES NO

**Example:** \_\_\_\_\_

Appendix E  
Debriefing Statement

Thank you for participating in this study. The purpose of this study was to determine the impact of watching a small or large pseudo shelter dog obey a command on someone's willingness to adopt that dog. Both the Brittany and the Cavalier King Charles Spaniel you saw today are not actually shelter dogs and are not available for adoption. Adoptions occurred too quickly at the shelter to use real shelter dogs, so researchers used pseudo shelter dogs. This study is composed of four groups where participants watch a small shelter dog sit on command or behave naturally, or a large shelter dog sit on command or behave naturally. I am expecting to find that participants of either gender will report increased willingness to adopt the shelter dog (regardless of size) that sits on command, that a large dog sitting on command will have a greater impact on a potential adopter's willingness to adopt than a small dog sitting on command, and that potential adopters make use of information on cage cards of shelter dogs' kennels. I want to assure you again that all information obtained from this study will remain strictly confidential. Due to the nature of this study, please do not share information about any aspects of this study with others, as this may influence results.

If you have any questions, you may ask them at this time. If questions arise later, you may contact myself at [vhajek@g.emporia.edu](mailto:vhajek@g.emporia.edu) or Dr. Cathy Grover in her office (VH 303), by office phone (620-341-5813), or via email ([cgrover@emporia.edu](mailto:cgrover@emporia.edu)). Again, I appreciate your time and patience, and thank you for participating and please be aware the other dogs you saw today are available for adoption!

I, \_\_\_\_\_, hereby submit this thesis to Emporia State University as partial fulfillment of the requirements for an advanced degree. I agree that the Library of the University may make it available for use in accordance with its regulations governing materials of this type. I further agree that quoting, photocopying, or other reproduction of this document is allowed for private study, scholarship (including teaching) and research purposes of a nonprofit nature. No copying which involves potential financial gain will be allowed without written permission of the author. I also agree to permit the Graduate School at Emporia State University to digitize and place this thesis in the ESU institutional repository.

---

Signature of Author

---

Date

---

Title of Thesis

---

Signature of Graduate School Staff

---

Date Received







