PET PERKS: AN EXAMINATION AND ANALYSIS OF THE RELATIONSHIP BETWEEN COMPANION ANIMALS AND THE DEVELOPMENT OF EMPATHY

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PET PERKS: AN EXAMINATION AND ANALYSIS OF

THE RELATIONSHIP BETWEEN COMPANION ANIMALS

AND THE DEVELOPMENT OF EMPATHY

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ABSTRACT

This study investigated existing pet-owner relationships in order to determine how they influenced the development of emotional empathy in humans. A sample of 260 undergraduate students at Texas State University with an average of 20 years, consisting of mostly female (75%) participants, volunteered to participate in the Pet Perks Survey. Each participant's degree of attachment to their pets, and their level of emotional empathy, were measured based on their responses to the Lexington Attachment to Pets Scale, and the Questionnaire for the Measurement of Emotional Empathy. An additional 18 fill-in-the-blank and open-ended questions were created to examine their personal experiences with pets during childhood as well as, attitudes toward pet-ownership. The primary findings revealed that pet-owners both past and present exhibited significantly higher empathy levels than non-pet-owners. Furthermore, as suggested by previous research, the level of attachment between an individual and their pets was found to be a significant indicator of their level of emotional empathy. Overall, this study found statistically significant evidence to support the proposal that forming close personal bonds with companion animals, or pets, promotes the development of empathy.

INTRODUCTION

Today, people living in contemporary societies experience an array of diverse and complex relationships with animals. Anthrozoology is a modern interdisciplinary field dedicated to studying a wide range of human-animal relations. Previous research in this field has generated an extensive amount of empirical data demonstrating that interactions with animals produce a variety of health benefits for humans. This information has played a crucial role in significantly expanding our understanding of human-animal relationships in general. However, modern societal changes have inadvertently transformed the nature of these relationships by altering the ways that humans and animals interact on a regular basis; shifting away from keeping animals for practical purposes toward keeping animals purely as objects of affection.

Recent social trends have considerably reduced the amount of regular contact that humans experience with a variety of living animals. Currently, pets or domesticated animals kept for companionship and treated as objects of affection serve as the primary source of daily interactions with animals for most people, especially children (Melson, 2000). In order to make our prior understanding of human-animal relationships applicable to modern everyday life, we must give appropriate consideration to the various ways that humans interact with animals within the context of contemporary society. This study set out to gain a better understanding of modern human-animal relationships by investigating the special bonds formed between individuals and companion animals, or pets.

Recent research has discovered that pet-keeping has been a universal practice among most human groups throughout history, dating back even to prehistoric times (Melson, 2001). The importance of studying these particular types of human-animal relationships is highlighted by the results of several surveys which indicate that a growing number of pet-owners consider their animal companions a top priority in their life (American Animal Hospital Association, 2004). In addition, according to more recent data from the 2011-2012 APPA National Pet Owners Survey, 62% of U.S. households own at least one pet, and pet-ownership is overwhelmingly more likely to occur in families with children or adolescents than in those without. Since pets are the remaining source of constant, reliable contact with animals it is imperative that the possible benefits of pet-ownership be thoroughly investigated.

Moreover, the health care industry and society in general are experiencing a dramatic change in attitudes concerning human health and its enhancement. The previous emphasis on research and technologies concerning the treatment of various diseases and disorders have shifted to a demand for research concerning methods of prevention and the discovery of new, affordable ways to promote health. A great deal of evidence which indicates the importance of the development of empathy in relation to healthy emotional and social functioning in humans already exists. In addition, recent research regarding human-animal relationships has identified a link between human and animal-oriented empathy and has suggested that human empathy levels are positively influenced by interactions with animals. This has generated an increase interest in research concerning the nature of modern human-animal relationships and the wide range of potential benefits they offer.

Purpose of the Study

This study seeks to enhance the practicality of our present knowledge regarding these relationships by investigating how regular interactions with companion animals, or pets, can positively influence human development. Achieving a more comprehensive understanding of how human-animal interactions affect the well-being of humans and animals alike, will provide individuals with the knowledge necessary to enhance their relationships with companion animals in ways that will confer the greatest amount of benefits for both.

I. REVIEW OF RELATED LITERATURE

The Human-Animal Bond

Broadly defined, the human-animal bond is a mutually beneficial and dynamic relationship between people and animals which is influenced by behaviors that are essential to the health and well-being of both. This bond has served the basic needs of both animals and humans throughout history. For instance, many animals came to function as vital parts of human societies because of their ability to fulfill various human needs – serving as protection, modes of transportation, as well as sources of food and power (McCardle et al., 2011). Humans reciprocated these services by meeting the basic needs of the animals – providing them with food, water, shelter and protection. In addition, to facilitating the formation of conventional human-animal relationships which consisted of established sets of responsibilities and benefits for all those involved, these types of routine interactions served as the foundations for acquiring essential practical knowledge about animals.

Many individuals have previously focused on why the human-animal bond originally developed in an attempt to gain insight into the powerful influences this bond has on human-beings. During the 1960's psychologist Dr. Boris Levinson observed that his ability to build rapport with his hard to reach patients was significantly improved

when his dog Jingles was present. He concluded that human relations with animals played such a substantial role in human evolution that they have now become fundamental to our psychological well-being (Levinson, 1972). Today he is considered one of the foremost advocates of the therapeutic benefits offered by animals.

This concept was scientifically reinforced by biologist E.O. Wilson's theory of *biophilia* – a biologically based attraction to nature and all its life forms which evolved as a product of culture, learning and experience (Wilson, 1984). This theory assumes that humans are born possessing a connection to other living things, causing them to become selectively attuned to the presence and behaviors of animals (Kellert, 1997). Wilson claimed that this adaptation evolved because of the advantages that our ancestors acquired as a result of their improved ability to maintain mutually beneficial relationships with animals (Kellert & Wilson, 1993). From these perspectives, human relationships with other species are considered just as vital as relationships with other people.

The Importance of Empathy

Empathy is defined in two ways: (1) the awareness of another's thoughts, feelings, and intentions and (2) the ability or tendency to be vicariously aroused by the affective state of another (Hoffman, 1984). Researchers have identified three crucial components of the empathy process: (1) the ability to distinguish and label the emotional states of others, (2) the ability to assume another's role and perspective, and (3) an emotional capacity and responsiveness (Feshbach and Feshbach, 1982). These distinctions are essential for comprehending empathic functioning because the ability to understand and personally relate to another does not automatically lead to an empathic response. Empathy results from a combination of the cognitive mechanisms required for

recognizing and understanding another's feelings and the specific affective mechanisms necessary for sympathizing with those feelings.

The development and manifestation of empathy is considered an essential aspect of healthy emotional and social functioning for humans (Eisenberg et al., 1991) because human behavior is universally guided by social norms in most situations, from family to politics. The process of empathy implies a shared interpersonal experience and has been implicated in the development of many favorable social behaviors such as altruism, generosity, social cognition and the regulation of aggression (Feshbach, 1975). Along with increasing cooperation and reciprocal attitudes in a various social contexts, the presence of empathy has been shown to inhibit or, at minimum, moderate aggression. Correspondingly, deficits in empathy have been linked to the escalation of antisocial behaviors and violent tendencies towards both humans and animals (Eisenberg, et al., 1991). This proposed relationship between empathy and aggressive behavior highlights the significance of the cognitive and affective aspects of empathic responses.

Empathy and Aggression

The cognitive ability to examine a situation from another's perspective in combination with the vicarious affective ability to sympathize with them implies that empathy is able to inhibit aggressive tendencies or violence by eliciting analogous feelings of distress in the observer. The theory that empathy regulates aggression is supported by evidence from many studies (Feshbach and Feshbach, 1969; Mehrabian and Epstein, 1972; Miller & Eisenberg, 1988; Richardson et. al., 1994), which indicate that most people are unwilling to inflict pain on another if they are also vulnerable to vicariously experiencing that pain. Therefore, generally speaking, higher levels of

empathy facilitate increased altruistic behaviors and concern for other living beings, while simultaneously discouraging the motivation to provoke conflict.

Human- and Animal-Oriented Empathy

The notion that empathy and emotional concern for animals and people are associated has been popular amongst many moral philosophers, humanitarians and the general public alike, even before early 20th century empathy research began (Lockwood, 1983; Messent, 1983; Thomas, 1983). This belief is corroborated by evidence from several studies indicating that individuals who show greater empathy toward other people are also more likely to show empathy or humane attitudes towards animals (Poresky, 1990; Wagstaff, 1991; Rossbach and Wilson, 1992; Serpell and Paul, 1994). Similarly, high levels of empathy have been associated with the enhanced ability to form close, personal bonds with companion animals (Ascione & Weber, 1996; Melson, Schwarz & Beck, 1997). This research aims to contribute to a greater understanding of the link between empathy towards both humans and animals.

It has been suggested that the connection between human-oriented and animal-oriented empathy may originate from an underlying, dispositional trait for emotional empathy (Eisenberg et al., 1994; Stayer and Roberts, 1997), which is strongly influenced by an individual's early developmental environment (Koestner, Franz and Weinberger, 1990; Eisenberg et al., 1992). The significance of experiencing positive relationships with animals during childhood for the development of humane attitudes and empathic tendencies towards both humans and animals has been reinforced by various studies (Poresky & Hendrix, 1990; Paul & Serpell, 1993; Poresky, 1996). While research concerning the benefits that positive childhood relationships with animals have on

healthy human development has only received attention in more recent years, early learning experiences related to forming childhood relationships with other people have been generally associated with healthy development for quite some time.

The Importance of Attachment

We owe much of our current understanding of attachment in relation to child development to the influential work of John Bowlby, a pioneer in relationship research. In his volume *Attachment*, he generally defines attachment as the unique relationship between two living beings (1969). He proposes that by successfully forming an early attachment to another social being, an individual learns how to recognize the subtle social cues of others and appropriately adjust their behavior in response. This implies that an individual's perspective taking skills are learned through their early relationships with others, and that by successfully bonding with another being will lead to the manifestation of empathic behaviors later in life.

Attachment to Pets

Bowlby and Ainsworth's (1991) attachment theory has served as a basis for a significant amount research focusing on the importance of forming attachment bonds in human relationships, and more recently for research regarding attachment in human-animal relationships as well. An attachment bond is described as an emotional bond in which an individual seeks comfort and security from a relationship with another individual. According to Bowlby, the benefits of experiencing attachment bonds are "the ability to relate to many others, to establish trust, to form and retain friendships, and to engage in mutually satisfying emotional and physical relationships"(1969). Many studies have shown that relationships with pets produce patterns of emotion and behavior which

are remarkably similar to those experienced from attachment relationships with other humans (Rynearson, 1978; Pat, 1995; McNicholas, Gilbey, Rennie, Ahmedzai, Dono & Ormerod, 2005). Therefore, it is logical to presume that forming attachment bonds with companion animals during childhood could engender outcomes similar to those gained from forming early attachment bonds to other humans.

The Importance of Childhood Pets

In his book, Pets and Human Development, Dr. Levinson (1972) expressed his philosophy regarding the importance of pets:

> "The values of pet ownership in promoting normal child development may be summarized as follows: A child who is exposed to the emotional experiences inherent in play with a pet is given many learning opportunities that are essential to wholesome personality development. His play with the pet will express his view of the world, its animals, and its beings, including his parents and peers."

In 2001 Dr. Gail Melson, professor of developmental studies at Michigan State University, made a similar proclamation; stating that the bonds formed between children and adolescents and companion animals, or pets, are often just as significant and influential as those with parents, siblings and peers. These statements imply that building relationships with animals are especially important for children and adolescents, further stressing the importance of thoroughly investigating the influences of human-animal interactions for future generations.

How Pets Influence the Development of Empathy

Pets have demonstrated the ability to promote positive psychosocial development in children by enhancing empathy, self-esteem, cognitive growth, and increasing participation in social activities (Melson, 2003). In a study by Melson, Kahn, Beck and Friedman (2009), many parents reported the belief that pets play a significant role in their children's development by teaching responsibility, providing opportunities to learn to care for others, motivating respect and appreciation for other living beings, and developing empathy. These findings support the concept that interacting with pets can positively influence the development of empathy through their ability to manipulate early learning experiences.

Moreover, it has been suggested that it may actually be easier for children to learn to be empathetic with others by first learning to interact with animals because animal behaviors are open reflections of their genuine emotions. This allows children to accurately distinguish and appropriately respond to an animal's feelings in any given situation (Melson, 2003; Serpell, 2008). Walsh (2009) stated that the ability to empathize with animals will theoretically expand to include humans, ultimately resulting in the healthy development of the self and social relations. These early interactions with animals provide natural opportunities to develop a greater sense of emotional concern or empathy for others.

II. RESEARCHER'S INTENTIONS

Overview

The premise of this study is that forming close personal relationships with companion animals, particularly during childhood, promotes the healthy development of emotional competency and favorable social behaviors among humans by increasing empathy levels. This research concentrates on investigating contemporary pet-owner relationships and how they influence the development of both human and animal-oriented empathy. In addition, this study aims to identify which aspects of the relationships between people and their pets have the greatest impact on healthy human development. The primary objective of this research is to produce empirical evidence to support previous research regarding the relationship between pet-ownership and the development of empathic tendencies towards other living beings, humans and animals alike. The primary investigator is confident that the information obtained from this study will help bring us closer to realizing the full range of benefits brought about as a result of keeping pets, and that the knowledge gained will benefit humans individually and socially while also serving to promote the humane treatment of all animals.

Hypotheses

The initial premise of this study, that relationships with pets promote higher levels of empathy, was expanded upon to account for multiple factors associated with the development of empathy. In order to develop a comprehensive understanding of how pet-ownership influences the development of empathy in humans, several hypotheses were proposed.

Hypothesis 1: Participants who owned pets during childhood would exhibit higher levels of empathy than participants who did not own pets during childhood.

Hypothesis 2: Participants who currently own pets would exhibit higher levels of empathy than participants who do not currently own pets.

Many previous studies have suggested that an individual's degree of attachment to their pets is actually the greatest indicator of their level of emotional empathy (Poresky et al., 1987; Melson, 1988).

Hypothesis 3: Participants who reported greater attachment to pets would exhibit corresponding levels of empathy.

Each individual's demographic information was examined to determine if there was any correlation between personal characteristics and individual empathy levels.

Hypothesis 4: a) Participants with higher GPAs would exhibit higher levels of empathy than participants with lower GPAs.

b) Female participants would exhibit higher levels of empathy than male participants.

c) Older participants would exhibit higher levels of empathy than younger participants.

Hypothesis 5: Individuals who consider their childhood pets important will exhibit greater attachment to their pets than individuals who do not consider their childhood pets important.

Each participant's individual experiences and personal attitudes concerning pet ownership were carefully considered in relation to their levels of attachment to pets.

Hypothesis 6: a) The type of animal the participant reported was their favorite pet would affect the level of attachment to the pet.

b) The amount of time the pet was kept would affect the level of attachment the participant developed to the pet.

Executing a more in depth investigation of each participant's individual characteristics and experiences with pets could reveal potential extraneous variables which may have influenced individual levels of empathy.

Definition of Key Terms

- Anthrozoology: the study of human-animal relations
- Attachment: a unique emotional bond between two living beings
- The Biophilia Hypothesis: proposes that human beings possess an inherent affiliation towards, and interest in, life and lifelike processes
- Companion Animal: any domesticated animal (dog, cat, bird, etc.) kept by humans for company, amusement, psychological support and all other functions that humans need to share with another species; also referred to as pets
- Emotional Empathy: a vicarious emotional response to the perceived thoughts, feelings, and emotional experiences of others
- Human-Animal Bond: defined by the American Veterinary Medical Association as a mutually beneficial and dynamic relationship between people and other animals that is influenced by behaviors that are essential to the health and well-being of both. This includes, but is not limited to, emotional, psychological, and physical interactions of people, other animals, and the environment.
- Lexington Attachment to Pets Scale (LAPS): this scale was developed by Timothy Johnson, Thomas Garrity, and Lorann Stallones in 1992, using items from earlier works such as, the Companion Animal Bond Scale, the Pet Attitude Scale, and the Pet Attitude Inventory. It consists of 22 statements regarding an individual's favorite pet and serves as a tool for evaluating individual levels of emotional attachment to pets.

- Questionnaire for the Measurement of Emotional Empathy (QMEE): originally developed by Albert Mehrabian and Norman Epstein in 1972, this questionnaire was designed to assess an individual's emotional empathy. It consists of 33 items divided into seven subcategories: 1) susceptibility to emotional contagion, 2) appreciation of the feelings of unfamiliar and distant others, 3) extreme emotional responsiveness, 4) tendency to be moved by others' positive emotional experiences, 5) tendency to be moved by others' negative emotional experience, 6) sympathetic tendency, and 7) willingness to be in contact with others who have problems (Mehrabian and Epstein 197).

III. METHODOLOGY

Materials

Several materials were utilized for the purposes of the current study, including the Pet Perks Survey, a Scantron form (No.882-ES) and separate cover page.

The cover page was created in order to keep all identifiable information (i.e. student name, ID, course information etc.) separate from individual responses. This page also contained a short description of the study's purpose, the researcher's contact information, and a brief set of instructions for completing the survey. In order to further ensure participant anonymity, this page was returned, collected and filed separately from the rest of the survey.

The Pet Perks Survey

The Pet Perks Survey was a paper based survey comprised of a total of 73 survey items, divided into three separate sections. These items were based on three previously established measures for assessing the human-animal bond. These assessments were selected based on evaluations from prior research, the presence of various psychometric properties, and how appropriately their content corresponded with the objectives of the current study.

Measures

Section 1 contained 22 statements regarding each participant's favorite pet from the Lexington Attachment to Pets Scale, or LAPS (Johnson, Garrity & Stallones, 1992), which functioned as a tool for assessing individual levels of emotional attachment to pets.

Similarly, *Section 2* consisted of 33 statements concerning individual attitudes toward animals and other human beings from the Questionnaire for the Measurement of Emotional Empathy, or QMEE (Mehrabian & Epstein, 1972), which served as a means for measuring individual empathy levels.

For the purposes of this study, the original answer scales for both the LAPS and the QMEE were revised into 5-point Likert scales to make them compatible with the familiar Scantron answer format (No.882-ES). Both *Sections 1* and *2* included the following answer key and set of instructions:

Please indicate how strongly you agree or disagree with the following statements. For each statement, use the scale below to fill in the corresponding bubble on the scantron.

A	B	C	D	E
Agree Strongly	**Agree Somewhat**	**Neutral**	**Disagree Somewhat**	**Disagree Strongly**

Figure 1. Example of Instructions and Answer Key for Sections 1 and 2

In addition to significantly reducing the amount of time required for the scoring process and decreasing the number of errors engendered during data transference, manipulating the questionnaires in this way also served to decrease reader confusion and fatigue.

The Childhood Pet Ownership Questionnaire (Paul & Serpell, 1993) functioned as the primary model for *Section 3* of the Pet Perks Survey. This section consisted of a combination of 18 fill-in-the-blank and open-ended questions regarding each participant's personal experiences with pets during childhood and their current attitudes toward pet-ownership. Several of these questions, initially based on items from the Childhood Pet Ownership Questionnaire, were altered or omitted in order to avoid reader confusion and better suit the needs of this particular study. These survey items were placed at the end of the survey in attempt to reduce participant fatigue and encourage full completion of all survey items.

Participants

This study utilized a convenience sample of students from the total undergraduate population of approximately 28,959 students enrolled at Texas State University in San Marcos, Texas. In order to participate in the survey portion of this research, the participants had to be enrolled in either PSY1300: Introduction to Psychology, or PSY2311: Psychology of Human Sexuality during the 2012 spring semester. Both courses were taught by the same professor, Dr. Amy Meeks, and were held on the same days of the week. It was not necessary for students to have any prior knowledge or instruction in the field of psychology nor were they required to complete any prerequisite classes in order to enroll in either course.

These two courses were chosen for several reasons. The similarities between these courses provided an opportunity to control for various extraneous variables which may have influenced participant responses. Furthermore, their large size – of approximately 200 students per class – and open accessibility to a broad range of undergraduate students

increased the probability that the sample would be a better representation of the entire student population.

Demographics

The final survey sample consisted of 260 individual cases, 0.9% of the total undergraduate student population. In *Section 3,* participants were asked to provide certain individual demographic information, including their age, gender, ethnicity, and grade point average (GPA) based on a 4.0 scale. The survey sample population consisted of mostly female (75%) participants and had a median participant age of 20.4 years, with an overwhelming majority (87%) falling between the ages of 18 and 21. Similarly, a substantially large proportion of the survey participants (96.1%) reported having a GPA of a 2.0 or higher. With regards to ethnicity, the survey sample was found to be fairly representative of the total undergraduate student population at Texas State.

Table 1. Demographic Comparisons by Population

		Survey Sample	**Texas State University**
Gender	*Male - Female*	25% - 75%	45% - 55%
Age	*Average*	20 years	22 years
	25+ years	5.4%	17%
Ethnicity	*Caucasian*	46.2%	59%
	Hispanic or Latino	33.8%	27.7%
	African American	9.2%	6.1%
	Other	10.8%	7.1%

Procedure

Prior to distribution, an identification number was assigned to each Pet Perks Survey. This number was placed in the top right-hand corner of the questionnaire and its corresponding Scantron form, but was excluded from the cover page. This numerical identification system was implemented to guarantee that each participant's Scantron scores would be correctly matched with their written responses, in the event that they become separated.

A total of 375 Pet Perks Surveys were distributed to the students in the aforementioned classes on Monday, February 27, 2012. All of the students were instructed to return their surveys to Dr. Meeks on the following Monday (March 5, 2012) at the beginning of class, giving them a total of one week outside of class to complete the questionnaires. Students were verbally instructed to detach the coversheet from the rest of the survey before turning it in.

Of the original 375 surveys, 275 were collected. After each of the returned surveys was individually reviewed by the primary investigator, an additional 15 surveys were discarded due to incomplete or unclear responses, leaving a final total of 260 completed surveys.

The completed Scantron forms were then sent to the *Testing, Research-Support, and Evaluation Center* at Texas State University to be scored. A numerical score was assigned to each answer (A=1, B=2, C=3, D=4, E=5), while an inverse score (A=5, B=4, C=3, D=2, E=1) was applied to all negatively worded statements; this technique, known as reverse coding, is frequently used by surveyors in attempt to eliminate respondent

errors. This process generated a final quantitative score for each participant based on their responses to the qualitative statements from *Sections 1* and *2*.

These results, along with all of the information from *Section 3*, were subsequently transferred and organized into a comprehensive data set using an Excel spreadsheet. Finally, this data set was entered into the computer software program known as SPSS for statistical analysis and hypothesis testing.

Data Analysis

Hypothesis 1

The QMEE scores of participants who owned pets during childhood were compared with the scores of participants who did not own pets during childhood using an Independent Samples *t*-Test.

Hypothesis 2

Another Independent Samples *t*-Test was performed during which the QMEE scores of participants who reported current pet-ownership were compared with the scores of those who did not currently own pets.

Hypothesis 3

Each participant's QMEE score was compared to their LAPS score using a Pearson's correlation in order to delineate the relationship between an individual's degree of attachment to their pets and their specific level of empathy.

Hypothesis 4

A & C): A Pearson's correlation was used to examine the possibility that an individual's empathy level may be related to their GPA and/or their age by comparing these factors with each participant's QMEE score.

B): In order to determine whether or not gender could have influenced the level of empathy exhibited by each participant, an Independent Samples *t*-Test was used to compare the average QMEE scores of each gender.

Hypothesis 5

With regards to each individual's personal attitudes towards pets, an Independent Samples *t*-Test was used to compare the LAPS scores of participants who indicated that their childhood pets were important to them, to those who did not consider their pets important.

Hypothesis 6

Participants who reported that their childhood pets *were* important to them were asked to indicate how important each of their childhood pets were to them personally, using the following scale: 1=fairly important; 2=very important; 3=extremely important. Various characteristics of these pet-owner relationships were examined in order to determine their influence on the level of importance attributed to different pets.

A): The type of animal that was kept was compared with the level of importance attributed to them using an Independent Samples *t*-Test.

B): A Pearson's correlation was performed to compare the level of importance assigned to each pet in relation to the amount of time the pet was kept.

IV. RESULTS

Descriptive Data

The *average* QMEE score for participants was 83.16 with a standard deviation of approximately 13. Lower scores were correlated with higher empathy levels.

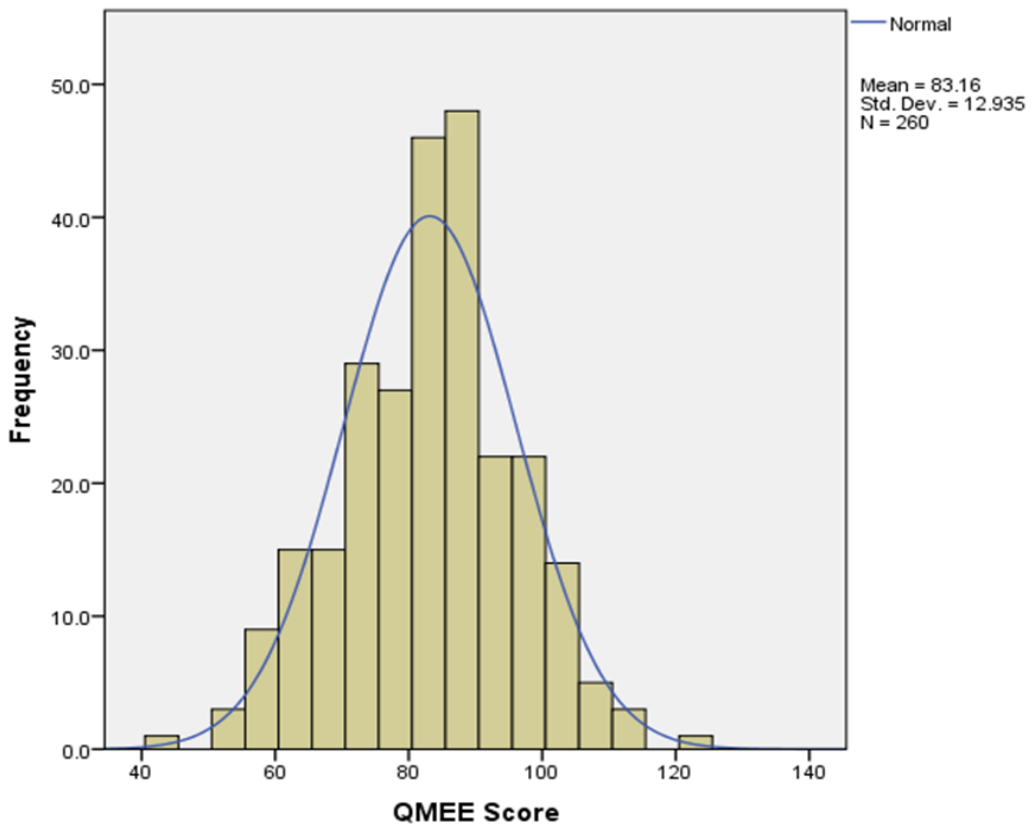

Figure 2. QMEE Scores with Normal Distribution Curve

The *average* LAPS score for participants was 52.77 with a standard deviation of 16.846. Here again, lower scores were correlated with higher degrees of attachment between the individual and their pet(s).

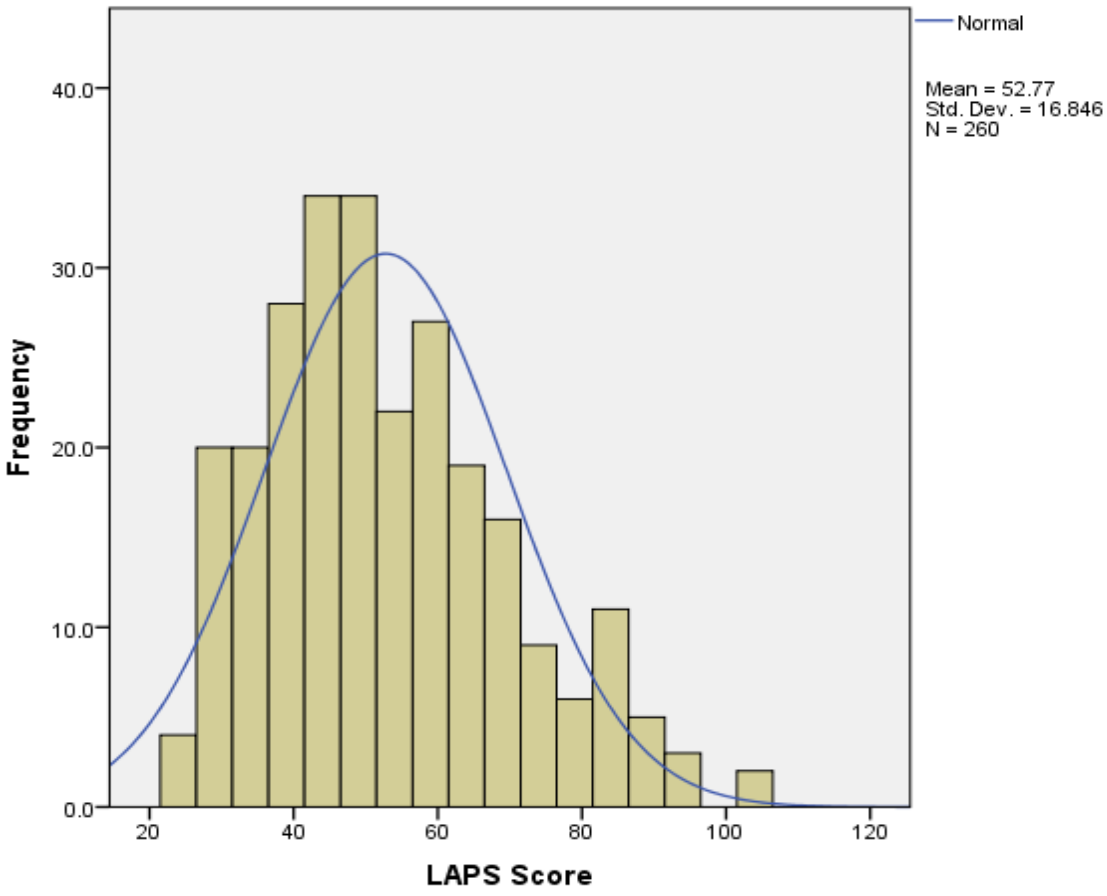

Figure 3. LAPS Scores with Normal Distribution Curve

Main Analyses

Hypothesis 1

An overwhelming majority of 94% (*n*=245) of survey participants reported keeping pets during their childhood. These participants exhibited lower QMEE scores ($M_1 = 82.72$, $SD_1 = 12.82$) than participants who did not own pets during childhood (*n*=15) ($M_2 = 90.27$, $SD_2 = 13.11$). The mean difference of QMEE scores for participants who did and those who did not own pets during childhood ($M_1 - M_2 = -7.544$) was significant, $t(258) = 2.209$, two-tailed $p < .05$.

Hypothesis 2

Current pet owners constituted 63.5% (n=165) of the sample population and averaged lower QMEE scores (M = 81.69, SD = 13.10) than participants who indicated that they did not currently own pets (*n*=95) (M = 85.71, SD = 12.30). The mean difference of QMEE scores for participants who do and do not currently own pets ($M_1 - M_2 = -4.014$) was significant, $t(258) = -2.433$, two-tailed $p < .02$.

Hypothesis 3

An analysis using a Pearson's correlation indicated the existence of a significant linear relationship between an individual's attachment to their pets and their empathy level, $r(258) = 0.238$, two-tailed $p < 0.01$. For these variables, the mean (SD) for QMEE scores was 83.16 (12.94) and 52.77 (16.85) for LAPS scores.

Hypothesis 4

The data analysis for *Part A)* revealed a significant correlation between a participant's GPA and their QMEE score, $r = +.141$, $N = 260$, $p < .05$, two tails. Comparing empathy levels among genders in *Part B)* indicated that, on average, female participants scored lower on the QMEE ($M = 79.95$, $SD = 11.44$) than male participants ($M = 92.78$, $SD = 12.46$). This difference was significant, $t(258) = 7.662$, $p < .001$. However, in relation to *Part C),* no significant correlation was found between an individual's age and their level of empathy.

Hypothesis 5

Testing showed that participants who reported that their childhood pets were important to them had considerably lower LAPS scores ($M = 50.04$, $SD = 15.35$) than participants who did not ($M = 67.28$, $SD = 17.92$). This difference was significant, $t(258) = 6.360$, $p < .001$, two tails.

Hypothesis 6

With regards to *Part A),* participants reported keeping a variety of animal species as pets; however, no significant correlation was found between the specific type of pet and the level of importance attributed to that pet. On the contrary, a correlation for the data in *Part B)* revealed a relationship between how long a pet was kept and the level of importance attributed to the pet by their owner, $r = +.142$, $N = 260$, $p < .01$, two tailed.

V. DISCUSSION

The Results

Overall, the data obtained from the Pet Perks survey supports the initial premise of this study; that forming personal relationships with companion animals promotes the development of higher empathy levels in humans.

Pet-Ownership: Past, Present, and Future

A comparison of participant QMEE scores who reported keeping pets in the past and/or in the present, against those who did not previously or currently own pets, revealed significantly higher empathy levels among pet owners. For example, the participant with the lowest QMEE score (43), or the *highest* empathy level, reported having both current and childhood pets; while, on the opposite end of the spectrum, the participant with the highest QMEE score (123), or the *lowest* empathy level, reporting having neither current nor childhood pets. Based on these results, we accept the proposals of both *Hypothesis 1*, that participants who owned pets during childhood would exhibit higher levels of empathy than participants who did not own pets; and *Hypothesis 2*, that participants who currently own pets would exhibit higher levels of empathy than participants who do not currently own pets.

In *Section 3* of the Pet Perks survey, participants who indicated that they did not own pets during childhood (n = 15) were asked to give a brief explanation of why the

did not keep pets in the past. Of the twelve participants who responded, half of them mentioned parental rules or attitudes against keeping household pets, and three cited pet allergies. Likewise, participants who reported that they did not currently own pets (n = 95) were asked to describe their personal reasons for not currently keeping pets. Of the 72 participants who responded, more than half (55%) reported that they were currently living in an apartment or dorm where pets were not allowed, while another 40% replied that they simply could not afford pets (i.e. food, medical attention, pet deposits, etc.), or that they currently lacked the time or space necessary to keep a pet. Several of the remaining participants mentioned that they did have pets, however their pets were either living at their family home, for the time being, or had just recently passed away. It is also interesting to note that less than 7% of the total survey population reported that they would not like to own a pet in the future, if and when their circumstances allowed it.

The Significance of Attachment

Data analysis revealed a statistically significant, positive linear correlation between a participant's QMEE score and their LAPS score; indicating that an individual's empathy level tends to increase as their level of attachment to pets increases. Therefore we accept the proposition of *Hypothesis 3*, that participants who reported greater attachment to pets would exhibit corresponding levels of empathy. With regards to these results, it is important to note that a statistically significant correlation functions only to confirm that there is a relationship between two variables. It offers no information regarding the strength of the relationship, nor can it be used to determine a cause-and-effect relationship between the variables being tested. Nonetheless, these results have

provided further empirical data to support the claim that there is indeed a relationship between an individual's attachment to their pets and their empathy level.

Individual Demographics

For *Hypothesis 4*, three separate assumptions, regarding each participant's GPA, gender, and age in relation to their level of emotional empathy, were proposed and then tested. Data analysis revealed a statistically significant, positive correlation between participant QMEE scores and their individual GPA's; demonstrating that an individual's empathy level tends to increase as their GPA increases. Once more, it is important to note that while this correlation establishes that there is a relationship between these variables, it provides no information about the relationship itself. Even so, based on these results we accept the assumption that participants with higher GPAs would exhibit higher levels of empathy than participants with lower GPAs. With regard to differences in empathy level between genders, the findings of this study corroborate the results of previous research which indicate that females tend to be more empathetic than males. On the contrary, no significant correlation was found between the participant's age and their QMEE scores and as such, we reject the assumption that older participants would exhibit higher levels of empathy than younger participants.

It is important to mention that the results of this particular study in relation to gender may be disproportionately skewed in favor of female participants since they constituted 75% of the total sample population. Likewise, since approximately 87% of the participants in this study fell between 18 and 21 years old, it is possible that the results concerning age may also be skewed.

The Significance of Importance

The assumption presented in *Hypothesis 5* – that individuals who considered their childhood pet(s) to be important would exhibit greater attachment to their pet(s) than those who did not – was initially formulated to complement *Hypothesis 3*. Both of these proposals were based on the notion that attachment plays a fundamental role in determining how an individual's relationships with pets will influence their development; however, each of them tested the participant's attachment to pets in very distinct ways. The initial assumption, regarding the connection between attachment and empathy, was tested using a previously established measure for each participant in order to create a more broadly applicable baseline; while the secondary assumption, in relation to each participant's personal attitudes about their pets, was tested using the specific details from their individual responses. Data analysis for the latter supposition revealed significantly higher levels of attachment among participants who indicated that their childhood pets were important to them.

The Importance of Type and Time

In attempt to find out exactly which aspects of pet-owner relationships had the greatest amount of impact on an individual's level of attachment to their pet(s), participants who reported that their childhood pets *were* important to them were asked to provide additional information about those pets. *Hypothesis 6* was developed to test this information by comparing both the type of animal that was kept and how long the pet was kept, with the level of importance the participant attributed to the pet based on a three point scale (1 = fairly, 2 = very, 3 = extremely).

Type of Pet Kept

While data analysis found no significant correlation between the type of pet kept and the level of importance attributed to the pet, it did reveal some statistics that are worth mentioning. Not surprisingly, dogs (65%) and cats (20%) were by far the most popular types of animals that were reported as important. However, it is interesting to note that a total of 17 different animal species were identified as important childhood pets. Furthermore, the average level of importance attributed to these pets was $M = 2.56$, which implies that most of the participants who reported having childhood pets considered them to be either very important or extremely important.

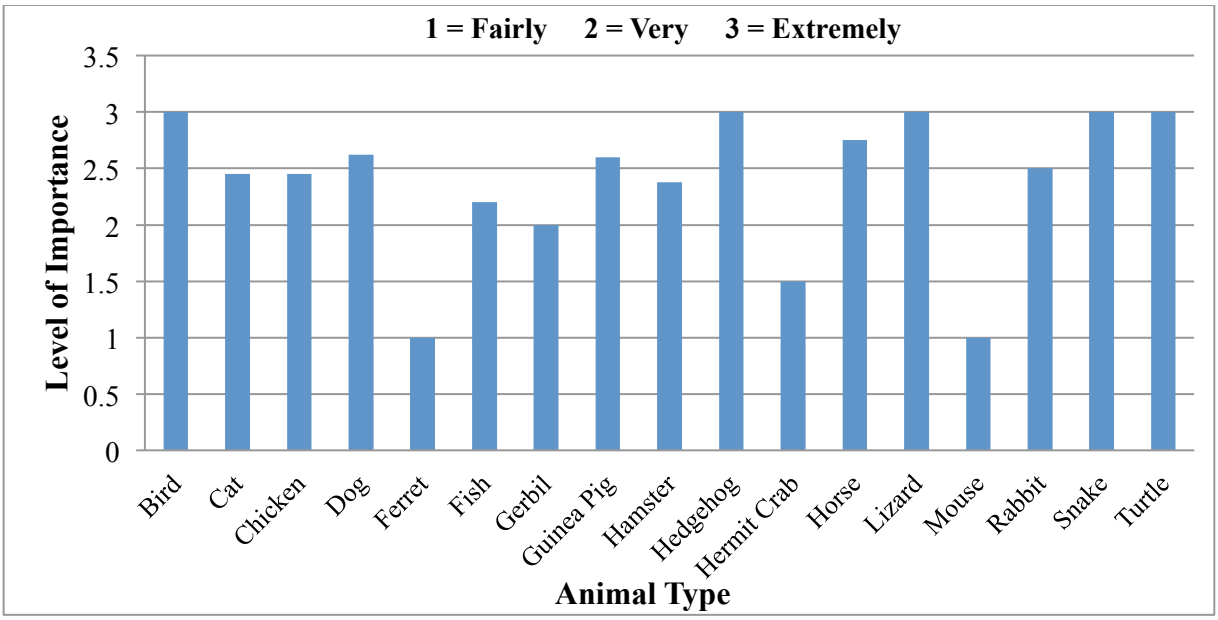

Figure 4. Level of Importance Attributed to Childhood Pets by Animal Type

Length of Time Pet was Kept

On the other hand, a significant positive correlation was discovered between the amount of time that the pet was kept and the level of importance attributed to the pet. This indicates that the importance of a pet tends to increase as the length of time that pet has been kept increases.

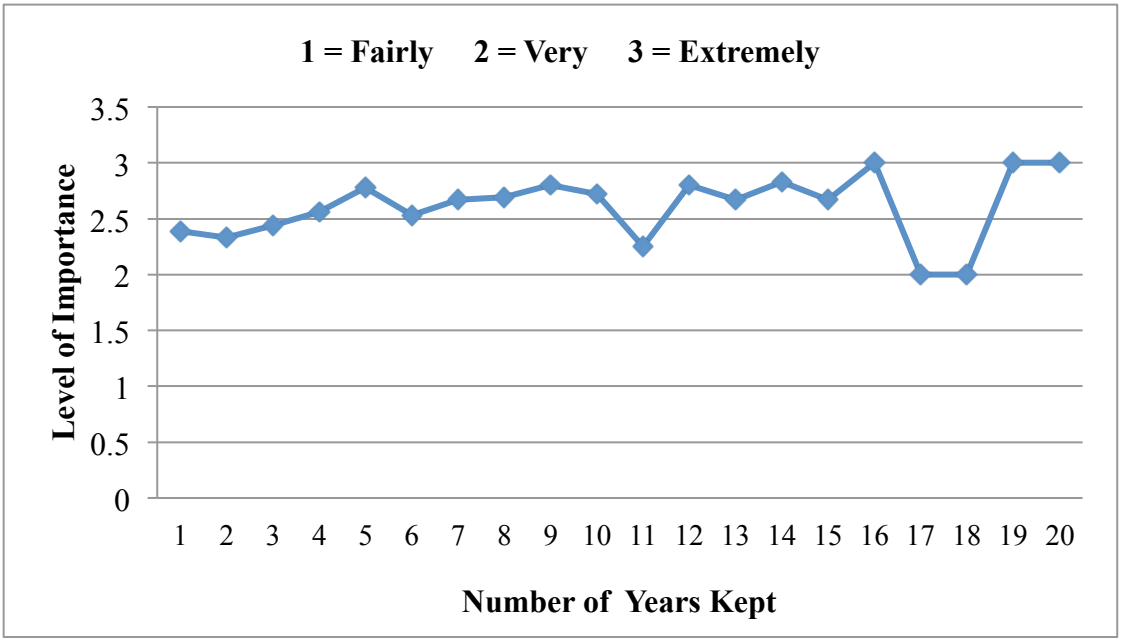

Figure 5. Level of Importance Attributed to Childhood Pets by Number of Years Kept

These findings suggest that the degree of emotional attachment that forms between an individual and their pet may be associated with the ability to maintain their relationship over a period of time.

Participant Attitudes Toward Pets

The final questions in *Section 3* of the Pet Perks survey related to the effects of each participant's relationships with their childhood pets. For question 13, approximately 82% of participants indicated that they felt their childhood pets had positive effects on

them. When participants were asked to describe the ways their pets positively influenced them, nearly half (48.5%) reported that their pets taught them responsibility and more than a quarter (28%) stated that their pets helped them learn to be caring or compassionate towards others. Of the other positive effects mentioned some of the most common were; learning how to treat animals, experiencing unconditional love and loyal, non-judgmental companionship, and receiving comfort and support from pets when stressed, upset, or grieving. For question 14, roughly 85% of participants indicated that they *did not* feel that their childhood pets had any negative effects on them. The most frequently reported negative effects of keeping pets were related to experiencing feelings of grief over the loss or death of a pet. These findings draw attention to an inescapable truth about becoming emotionally attached to pets. On one hand, forming close personal relationships with companion animals produces a myriad of benefits for pet-owners; unfortunately, on the other hand, pet-owners are also subject to experiencing an undeniable amount of grief and sorrow when these close bonds are severed.

Limitations

The most significant limitations of this particular study are in relation to its participants. Due to time constraints, this research utilized a convenience sample of undergraduate students from Texas State University. This specific sampling technique was selected because it has the advantage of being a relatively quick and easy method for recruiting volunteer research subjects. However, one major disadvantage of using a convenience sample is that a large portion of the general population is inadvertently left out of the study, which poses a potential threat to the external validity of the study.

With regards to the present study, the primary analysis of participant demographic information revealed that the sample population was representative of a rather narrow subset of the U.S. population, based on data from the 2010 Census. As such, some may argue that the results of this study do not fully support the conclusions with respect to the country's general population. However, when the demographic data for this study was compared explicitly to the comprehensive data for undergraduate students at Texas State University, the survey sample was found to be much more representative of the general student population (see Table 1). Therefore, the findings and conclusions of the current study may be appropriately generalized to the general student population at Texas State. Also, because 99% of Texas State undergraduates at the time of the study identified as residents of the state of Texas, it is likely that these results are fairly representative of undergraduate student populations from other public universities within the state.

Recommendations

As far as future replications on this study are concerned; the primary recommendation would be to use a random sampling technique to select a larger population with a more diverse age range. This would help ensure the external validity of any future survey results, allowing the results to be more broadly applicable to the general population. Another factor to consider when conducting future research would be individual socioeconomic status, both during childhood and at the time of the survey. Socioeconomic status or financial situation may be a critical factor in the decision whether or not to keep pets due to the costs associated with owning any type of pet – such as food, veterinary costs, required vaccinations and licenses, and possible pet deposits depending on living situation.

Although the participants of the current study were not asked to provide any information regarding their personal socioeconomic status, it is generally assumed that the majority of participants came from middle to upper middle class socioeconomic backgrounds. This assumption is based on the fact that the survey was conducted within a public university setting, and an awareness of the costs associated with attending any type of higher learning institution (i.e. tuition, housing, living, transportation, etc.). Furthermore, the results for *childhood* pet ownership which showed that 94% of these participants reported owning at least one pet during their childhood. Compared to the National Pet-Ownership Survey which showed that pet- ownership occurred in 62% of U.S. households (APPA, 2011-2012), we see that there was a substantial increase in pet-ownership among the university students in this study over the general population. If we combine these numbers with the aforementioned assumption that the participants of this study likely represent a relatively privileged group of individuals, some concerns being to take form. Is there a relationship between socioeconomic status and the likelihood of owning pets during childhood? Given the results of the current study which demonstrated that pet-owners tend to be more empathetic than individuals who do not own pets, this poses some serious implications for individuals in lower socioeconomic groups, whose current circumstances do not allow them to keep pets. What can be done to ensure that all children, regardless of socioeconomic status, have an equal opportunity to experience the benefits of interacting with animals?

Incorporating animal-based programs into public schools is one possible solution. These programs offer an affordable way to 'even the playing field' among children growing up under a wide range of circumstances and have proven to be effective in a

variety of ways. With respect to empathy, Ascione and Weber (1996), studied the effects of an animal-based humane education program in relation to human-oriented empathy. Their research indicated that children who participated in the program showed higher levels of empathy than a group of same-aged children who did not participate in the program. In light of these findings, they concluded that this program enhanced the children's humane attitudes toward animals which then generalized to the expression of empathy towards other people. Another study by Chandler (2001) found that the rapport between students and counselors was enhanced by incorporating animals into school counseling services. These findings corroborate the notion that animals have inherent therapeutic value; an idea that was originally introduced by Dr. Boris Levison. These findings help support the idea that interactions, even when limited, can produce benefits for children. However, there is currently a limited amount of research concerning the benefits of teaching humane attitudes toward animals. Further research into the links between child development and human-animal relationships may hold the key to unlocking the full potential of programs like these.

VI. CONCLUSIONS

The notion that interacting with animals is beneficial to human health and well-being has constituted an extensive amount of research into human-animal relations. This research focused specifically on people's relationships with their pets. At present, household pets serve as the remaining source of constant, reliable contact with animals for the majority of people living within the context of contemporary society. Recent surveys show that pet-ownership is significantly more likely to occur in households with children or adolescents. The daily interactions that children experience with domesticated companion animals serve as the foundation for developing their knowledge about all animals. Moreover, research has shown that an individual's early experiences with animals play a significant role in their development of animal-oriented empathy. The proposed connections between animal- and human-oriented empathy suggest that developing emotional concern for animals during childhood will generalize to other people later in life. The development of appropriate levels of empathy has been found to contribute to healthy emotional and social functioning by increasing cooperative attitudes and decreasing antisocial behaviors. Given the increasing prevalence of companion animals within the daily lives of children and adolescents and the proposed association between early relationships with animals and the development of empathy, it is imperative that the possible benefits of pet-ownership be thoroughly examined.

The primary objective of this research was to conduct a study that would produce results similar to those of previous research in an effort to generate further empirical data to support the proposed relationship between pet-ownership and the development of empathy. Several hypotheses were proposed to test for possible associations between the primary variable of empathy and various factors of pet-ownership. Data analysis of the Pet Perks Survey responses revealed significant relationships between several of these factors which supporting several of the study's original predictions.

Consistent with the present study's hypotheses, participants who owned pets either in the past or present exhibited significantly higher empathy levels than their counterparts who did not own pets. The degree of attachment an individual demonstrated to pets was proposed as a possible predictor for the development of empathy as a result of the pet-owner relationship. Testing revealed that participants who displayed greater attachment to their pets exhibited correspondingly higher levels of attachment. Likewise, the level of importance that each participant attributed to their childhood pets was found to relate positively to their attachment level to pets. While no relationship was discovered between level of importance and pet type, a slight correlation was found to exist between how long the pet had been kept and the importance an individual attributed to that pet.

In concluding the current investigation of contemporary pet-ownership and how it influences the development of empathy, this study has found significant statistical evidence to support the initial premise that forming close personal relationships with companion animals, particularly during childhood, promotes the healthy development of empathy in humans.

In addition to the primary conclusions of this study, data analysis revealed some interesting connections between *Hypothesis 3, Hypothesis 5,* and *Hypothesis 6b.* Based on these findings, this research proposes that the ability to successfully maintain the relationships formed between an individual and their pet – regardless of what type of animal is kept – play a key role in predicting the degree of attachment that an individual will develop to their pet. Moreover, based on the results for *Hypothesis 3* which demonstrate that an individual's level of attachment to their pets corresponds with the amount of empathy they exhibit, it is reasonable to speculate that the ability to maintain relationships with companion animals during childhood may function as an indicator of the development of empathy in children. Accordingly, this research suggests that increasing the attachment bond between an individual and their companion animal could function as a way to promote even higher levels of empathy among pet-owners. However relationships with pets should not be used to replace all other forms of social and/or human interaction, as it is crucial that individuals find a balance between their relationships with other humans and animals, in order to ensure healthy emotional and social functioning. While this research has provided evidence to support the concept that attachment level serves as an indicator of the development of emotional empathy, more research is needed concerning which factors within pet-owner relationships facilitate the development of attachment bonds between people and their pets. This information will allow us to modify pet-owner relationships in ways that will produce the greatest amount of benefits for both the people and animals involved.

APPENDIX

PET PERKS SURVEY

The following survey is being conducted as the research portion of an undergraduate Honors Thesis as partial fulfillment of the requirements for graduation in the Texas State Honors College. This study seeks to gather and analyze data in order to explore the effects of pet ownership.

These questionnaires have been designed to find out about your personal experiences with pet animals during childhood, about the pets you own now or might like to own in the future, and about your attitudes towards yourself, other people, and animals in general.
Note: In this survey, a "pet" refers to any domesticated animal kept solely for companionship or pleasure and treated with care and affection.

Please read each item carefully and answer as honestly as possible. There are no right or wrong answers and all responses will be kept anonymous. Once you have completed the survey, please return this cover sheet, the survey packet and the scantron to your professor. **Participants must complete all portions of the survey in order to receive full credit.** Thank you very much for your participation.

STUDENT NAME: _____

PROFESSOR:_____

CLASS: _____ TIME:_____

Primary Investigator: Jennifer Word
jw1734@txstate.edu

Note: For Sections 1 and 2, please use a No. 2 pencil to record your responses on the scantron form that has been provided. Before you begin, please check to make sure that the number located in the top right corner of this page matches the number in the top right corner of the scantron.

SECTION 1

Please indicate how strongly you agree or disagree with the following statements about your **favorite pet**. For each statement, use the scale below to fill in the corresponding bubble on the scantron.

A	B	C	D	E
Agree Strongly	**Agree Somewhat**	**Neutral**	**Disagree Somewhat**	**Disagree Strongly**

1. My pet means more to me than any of my friends.
2. Quite often I confide in my pet.
3. I believe that pets should have the same rights and privileges as family members.
4. I believe my pet is my best friend.
5. Quite often, my feelings toward people are affected by the way they react to my pet.
6. I love my pet because he/she is more loyal to me than most of the people in my life.
7. I enjoy showing other people pictures of my pet.
8. I think my pet is just a pet.
9. I love my pet because it never judges me.
10. My pet knows when I'm feeling bad.
11. I often talk to other people about my pet.
12. My pet understands me.
13. I believe that loving my pet helps me stay healthy.
14. Pets deserve as much respect as humans do.

A	B	C	D	E
Agree Strongly	**Agree Somewhat**	**Neutral**	**Disagree Somewhat**	**Disagree Strongly**

15. My pet and I have a very close relationship.

16. I would do almost anything to take care of my pet.

17. I play with my pet quite often.

18. My pet makes me feel happy.

19. I feel that my pet is a part of my family.

20. I am not very attached to my pet.

21. Owning a pet adds to my happiness.

22. I consider my pet to be a friend.

SECTION 2

Please indicate how strongly you agree or disagree with the following statements. For each statement, use the scale below to fill in the corresponding bubble on the scantron.

A	B	C	D	E
Agree Strongly	**Agree Somewhat**	**Neutral**	**Disagree Somewhat**	**Disagree Strongly**

23. It makes me sad to see a lonely stranger in a group.
24. People make too much of the feelings and sensitivity of animals.
25. I often find public displays of affection annoying.
26. I am annoyed by unhappy people who are just sorry for themselves.
27. I become nervous if others around me seem to be nervous.
28. I find it silly for people to cry out of happiness.
29. I tend to get emotionally involved with a friend's problems.
30. Sometimes the words of a love song can move me deeply.
31. I tend to lose control when I am bringing bad news to people.
32. The people around me have a great influence on my moods.
33. Most foreigners I have met seemed cool and unemotional.
34. I would rather be a social worker than work in a job training center.
35. I don't get upset just because a friend is acting upset.
36. I like to watch people open presents.
37. Lonely people are probably unfriendly.
38. Seeing people cry upsets me.
39. Some songs make me happy.

A	B	C	D	E
Agree Strongly	**Agree Somewhat**	**Neutral**	**Disagree Somewhat**	**Disagree Strongly**

40. I really get involved with the feelings of the characters in a novel.

41. I get very angry when I see someone being ill-treated.

42. I am able to remain calm even though those around me worry.

43. When a friend starts to talk about his problems, I try to steer the conversation to something else.

44. Another's laughter is not catching for me.

45. Sometimes at the movies I am amused by the amount of crying and sniffling around me.

46. I am able to make decisions without being influenced by people's feelings.

47. I cannot continue to feel OK if people around me are depressed.

48. It is hard for me to see how some things upset people so much.

49. I am very upset when I see an animal in pain.

50. Becoming involved in books or movies is a little silly.

51. It upsets me to see helpless old people.

52. I become more irritated than sympathetic when I see someone's tears.

53. I become very involved when I watch a movie.

54. I often find that I can remain cool in spite of the excitement around me.

55. Little children sometimes cry for no apparent reason.

SECTION 3

Please answer all of the following questions by checking the appropriate boxes and filling in specific details in the spaces provided.

Age: _____ years **Gender**: Female _____ Male _____ Other _____

Ethnicity: American Indian or Alaskan Native ____
Asian ____
Black or African American ____
Caucasian ____
Hispanic or Latino ____
Native Hawaiian or other Pacific Islander ____
Other _____

GPA: (4.0-3.5) ____ (3.5-3.0) ____ (3.0-2.5) ____ (2.5-2.0) ____
(2.0-1.5) ____ (1.5-1.0) ____ (1.0-0.5) ____ (0.5-0.0) ____

Note: In this questionnaire, "childhood" refers to the period up to and including 18 years of age.

1. Are you: ____
   An only child ____
   The oldest child in the family ____
   The youngest child in the family ____
   A middle child (i.e., with older and younger siblings) ____

2. How many brothers and sisters do you have? _____

3. Do you have any children?
   Yes ____ No ____
   If **yes**, how many? _____

4. Was your childhood home a rental property?
   Yes ____ No ____
   If **no**, please go to question 6.

5. Were pets permitted within the rental unit?
   Yes ____ No ____
   If **yes**, was a pet deposit required? Yes ____ No ____

6. A) In general, were your mother/maternal figure's attitudes toward pets:

Extremely positive	_____
Fairly positive	_____
Neutral	_____
Fairly Negative	_____
Extremely negative	_____

B) In general, were your father/paternal figure's attitudes toward pets:

Extremely positive	_____
Fairly positive	_____
Neutral	_____
Fairly Negative	_____
Extremely negative	_____

7. During your childhood, did you or your family keep any pets?
   Yes ____ No ____
   If **no**, for what reason(s)? _____
   _____

8. Please give details of the number (or approximate number) of pets you and your family kept during your childhood. Do not include the offspring of existing pets that were only kept for a short while (e.g., litters of kittens, puppies, etc.). If you had no pets, please go on to question 9.

Type of Pet	**Number owned by you (kept by you specifically)**	**Number kept by other members of your family or by the family as a whole**
Horses, ponies or donkeys	_____	_____
Dogs	_____	_____
Cats	_____	_____
Small mammals (e.g., rabbit, mouse, hamster, guinea pig)	_____	_____
Birds	_____	_____
Fish, reptiles, amphibians, insects, spiders, etc.	_____	_____
Others. Please specify:	_____	

9. During your childhood, did you or your family have any pets that you would say were important to you?
   Yes _____ No _____

If **no**, please go on to question 10. If **yes**, please give details below of all the pets that were important to you. List these pets in order of importance to you, the most important first.

Type of Pet (i.e., cat, dog, mouse, etc.)	**Your age range (approx.) when you had this pet.**	**Was this pet (1) Fairly, (2) Very, or (3) Extremely important to you?**
_____	_____ yrs. to _____ yrs.	(1) ____ (2) ____ (3) ____
_____	_____ yrs. to _____ yrs.	(1) ____ (2) ____ (3) ____
_____	_____ yrs. to _____ yrs.	(1) ____ (2) ____ (3) ____
_____	_____ yrs. to _____ yrs.	(1) ____ (2) ____ (3) ____

10. As a child, do you remember ever really wanting to have or longing for a particular type of pet?

    Yes ____ No _____

If **no**, please go on to question 11. If **yes**, please give details below, of any types of pets that you really wanted at some time during your childhood.

Type of Pet (i.e., cat, dog, mouse, etc.)	**Your age (approx.) when you wanted this type of pet.**	**How strongly did you want this type of pet? (1) Fairly, (2) Very, or (3) Extremely strongly.**	**Did you ever get this type of pet?**
_____	_____ years	(1) ____ (2) ____ (3) ____	Yes ___ No ___
_____	_____ years	(1) ____ (2) ____ (3) ____	Yes ___ No ___
_____	_____ years	(1) ____ (2) ____ (3) ____	Yes ___ No ___
_____	_____ years	(1) ____ (2) ____ (3) ____	Yes ___ No ___

11. Do you have any pets at the moment?

    Yes ____ No ____

    If **yes**, what are they? _____

    If **no**, for what reason(s)? _____

    _____

12. Would you like to own any pets in the future, if and when your circumstances allow it?

    Yes _____ No ____

    If **yes**, what would those pets be? Please list them in order of their importance to you, the one you would most like to own coming first. You may list as many or as few as you like.

    1st _____ 2nd _____ 3rd _____ 4th _____

13. Do you think that any of the pets you or your family had when you were a child had any positive effects on you (i.e., were good for you in any way)?

    Yes ____ No ____ Had no pets ____

    If **yes**, in what ways do you think they were good for you?

    _____

    _____

14. Do you think that any of the pets you or your family had when you were a child had any negative effects on you (i.e., were bad for you in any way)?

    Yes ____ No ____ Had no pets ____

    If **yes,** in what ways do you think they were bad for you?

    _____

    _____

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