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The Impact of Human Attachment to a Pet Bird on Psychological Well-Being

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This is to certify that the doctoral dissertation by

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Walden University
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Abstract

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Dissertation Submitted in Partial Fulfillment

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Abstract

Few studies have addressed human attachment to a pet bird and psychological well-being, and the research that has been conducted is largely anecdotal and anthropomorphic perspectives on human relationships with birds. In this quantitative study, the relationships between humans and their birds were explored using Bowlby's attachment theory and Fredrickson and Losada's broaden and build theory. The study consisted of a randomized experiment, in which individuals were randomly assigned to either an attachment (n = 81) or detachment (n = 88) group. The security priming manipulation was used to prime the groups. The attachment group was asked to list things that made them feel attached to their bird, and the detachment group was asked to list things that made them feel detached from their bird. The dependent variables evaluated included perceived meaning in life and loneliness. The Meaning in Life Questionnaire, the UCLA Loneliness Measure Version 3, and the Lexington Attachment to Pets Scale were used to assess the variables. Two multilinear regression equations were calculated to investigate if the manipulation predicted the dependent variables, and the findings were not significant. More attachment was related to increased loneliness, which was an unexpected finding inconsistent with the hypotheses. The findings of this research may enhance positive social change by demonstrating that strong attachment to pet birds likely is not necessary for birds to provide companionship and owners connecting with other bird owners. Health care providers and institutions may find that birds provide a soothing environment, group participation, and social engagement.

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Dedication

This challenging masterwork is dedicated to family. My father Charles Trautmann, who passed after his battle with non-Hodgkin's Lymphoma, was always there as a support and motivator during my education. My mother Jane Trautmann and her love of music, art, science, biology, and all living things. Pancho and Calypso continue to support me and my challenges but contribute excellent work ethic, humor, and colorful feathers along the way. My brother Robert, who listened to my discussion statistics and concepts he did not understand and responded with humorous distraction to lighten the mood. All my friends and colleagues, I have not named here online and offline, helped me through thick and thin, by dancing through life with me, and reminding me to laugh along the way.

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Table of Contents

List of Tables

Chapter 1: Introduction to the study

Attachments to a pet bird may have implications for positive relationships because of an increase in perceived meaning in life and a decrease in loneliness. In this study I addressed what impact this attachment between humans and pet birds has on perceived meaning in life and whether it lessened any loneliness that individuals felt, according to my research study. There are many ways to apply this concept to positive social change in the future, including (a) education, (b) application, and (c) the benefits of having birds as companion animals for the psychological well-being of humans. In Chapter 1, I explore material related to human-avian companionship, attachment theory, perceived meaning in life, and loneliness. Presented in Chapter 1 are the problem statement, the purpose of the study, and the research hypotheses. I also outline the theoretical framework, the scope of the study, and clarify the defining principles. Finally, I discuss the assumptions and delimitations, limitations, as well as the social significance of the study.

Background

Early research works frequently used anthropomorphism or anecdotal stories to address the avian-human relationship (Anderson, 2003). Anderson highlighted and I witnessed in several other works data was frequently in the form of stories, historical events, but not scientifically or research based evidence involving human bird relationships. Nightingale (1860) mentioned past occurrences of the frequent use of birds for companionship in hospitals and mental health environments. Her recollection was

based on individuals' engagements in a more formalized setting, but still offer only small mention of keeping a bird as a pet, and caring for it, no measures of relationships. Bucks (1903a, 1903b) published two articles discussing psychological interactions between individuals and avian companions in society.

Leigh (1966) examined how animals could benefit humans by helping them connect with challenges in their life history, improve self-esteem, and serve as excuses for inadequacies. According to Beck and Katcher (1983) and Perelle and Granville (1993), the United Kingdom's first recorded animal-assisted therapy program was at the York Retreat in 1972. The Tuke family founded the retreat, which focused on providing a caring psychiatric environment that included encouraging patients to care for animals such as rabbits and birds; the patients' responses to the animals and improved behaviors were documented (Beck & Katcher, 1983; Perelle & Granville, 1993). Mugford and M'Comisky (1975) used a randomized experiment pretest and posttest design and measured attachment and perceived well-being for those in one of each of these group situations that either provided a bird, a begonia, a television, a combination of two of these situations, or none of them. Mugford and M'Comisky found significant differences between pretest and posttest results for completing the questionnaire by the bird groups. These significant differences were that the bird groups improved over the begonia group ($p < 0.02$), and "the presence of TV seemed irrelevant" (Mugford & M'Comisky, p. 59). Beck et al. (1986) completed a randomized experiment at a psychiatric inpatient facility regarding patients whom they exposed to the presence of a caged bird and those they did

not expose. They found significant improvements in attendance, participation in group activities, and less hostility among those in the bird (experimental) group (Beck et al., 1986). Loughlin and Dowrick (1993) saw the impact of the psychological needs of individuals met through bird ownership and developed a 49-item questionnaire to collect demographics and reasons why people keep birds, including "esteem, social safety, cognitive power, and aesthetic needs" (p. 169). Jessen et al. (1996) measured morale, depression, and loneliness in their experimental research with adults aged 65 to 91, both male and female, with predominantly female participants who either were exposed to a bird or were not. The result of the research by Jessen et al. found a reduction in depression for the experimental group, those exposed to the bird. She focused on what people enjoy about their avian companions (Anderson, 2003). Fine (2010) discussed a case study of therapy regarding appropriate touch between a bird and an 8-year-old girl; the girl was able to share experiences about a history of sexual abuse by one of her grandparents after learning about good touch in appropriate places with she and the bird.

In their studies, Antonacopoulos and Pychyl (2010) established relationships between dog ownership, elevated levels of social support, and decreased levels of loneliness. Pet ownership and its multiple roles in the community could enable community integration by reducing stigma and facilitating acceptance and participation in the community (Zimolag & Krupa, 2010). For example, in one case study, the pets counterbalanced three layers of stigma: (a) discrimination, (b) illegitimate disability, and (c) separation (Zimolag & Krupa, 2010). Stull et al.'s (2018) study examined the benefits,

frequency, and policies regarding pets in nursing home facilities in Ohio. "Birds were located in 71% of the facilities, residents frequently request to spend time with animals" (42%); "seem happier after spending time with animals" (58%); and "are useful in calming agitated or upset residents" (61%-61% [birds and fish]; p. 39-43).

Despite an extensive search of the literature for independent and diversified studies of attachment, meaning in life, and loneliness (Anderson, 2003; Chur-Hansen et al., 2010), I did not find any correlational or experimental studies concerning avian companions and perceived meaning in life. Where research has fallen short, a gap exists between views on whether this attachment to a pet bird impacts perceived meaning in life (Anderson, 2003; Chur-Hansen et al., 2010). There is limited research in this field, allowing room for further exploration into the area between human-avian companionship and loneliness.

Problem Statement

There is a lack of research determining whether birds as pets contribute to psychological well-being in the home environment. Zimolag and Krupa (2010) commented in their case study regarding the presence of a bird that "in a public or professional setting it may lead to increased awareness of the limited world, of attachment to birds as therapy tools and animals" (p. 191). This study moved forward by exploring relationships between attachment to a pet bird, perceived meaning in life, and loneliness. I found little research exploring attachment to a pet bird and perceived

meaning in life. There is less information available about reducing loneliness; I designed my study to look at these areas.

Purpose of the Study

This work is a quantitative study assessing if birds as pets can contribute to the psychological well-being of people in the home environment. I reviewed research by Zimolag and Krupa (2010), who saw that awareness of birds in home settings was limited but might be increased through their visible presence in public and professional settings. They also referenced specific case studies of avian companions in home environments, though these frequently included other pets (Zimolag & Krupa, 2010). In the research I have examined to date, there is limited information examining the purpose of this study, which is to take a closer look and expand these areas of research.

Definitions

Affect: Any of a range of moods across a spectrum from anguish to bliss, from most basic to most complicated phenomenon, and most familiar to most unique mood responses. (American psychological association, n.d.).

Attachment: The "emotional bond between a human infant or a young non-human animal and its parent figure or caregiver; it is developed as a step in establishing a feeling of security and demonstrated by calmness while in the parent's or caregiver's presence," (American psychological association, n.d.-b).

Companion animal: " A pet that is (a) considered to be a member of the family, (b) anthropomorphized, (c) touched and caressed, (d) considered to be a child: nurtured,

protected, disciplined, and indulged, and (e) mourned upon separation" (Keil, 1990, p. 15).

Contentment: "Contentment is the calm joy or quiet pleasure we feel when our needs are (even transiently) satisfied and we are in harmony with ourselves and our surroundings." *Contentment: Definition, Examples, & Quotes*. (n.d.).

Contributory causation: A demonstrated effect must originate from a cause, and if the cause changes, so will the outcome (Riegelman, 1979).

Emotion: A momentary emotional state, which is individually meaningful, and can be categorized as "fear, joy, anger, and interest" (Fredrickson, 2001).

Human-animal bond/attachment: The relationship between a companion animal and a human characterized by friendship and reciprocity also "conceptualized as a hierarchy" (Keil, 1990, p. 15).

Interest: *"*an attitude characterized by a need or desire to give selective attention to something that is significant to the individual, such as an activity, goal, or research area." (American psychological association, n.d.-c).

*Joy: "*a feeling of extreme gladness, delight, or exultation of the spirit arising from a sense of well-being or satisfaction." (American psychological association, n.d.-d)

Loneliness: A subjective experience by human or animal, with lack of intimacy, for this study we will be focusing on people and, "lack of interpersonal intimacy" as discussed (Chelune et al., 1980, p. 462).

Love: a complex emotion involving strong feelings of affection and tenderness for the love object, pleasurable sensations in his or her presence, devotion to his or her well-being, and sensitivity to his or her reactions to oneself. (American psychological association, n.d.-e).

Meaningful life: "Commitment to some personal valued understanding of life, the generation of an internal 'scale' from this understanding of life, which the individual can use as a measure of the fulfillment of his life, and a positive self-evaluation of one's life in terms of his 'scale'," (Battista & Almond, 1973, p. 414-415).

Non-linear dynamic systems model: A model proposing that emotions are multi-part systems which are interactive and are two-directional (Fredrickson & Losada, 2005), they do not move affectually or with a parallel outcome, nor in a straight line, but maintain present unpredictability but exist with global stability (Fredrickson & Losada, 2005).

Perceived meaning in life: "People perceive their life as meaningful when they find coherence in the environment" (Park & Baumeister, 2017, p. 333).

Pet: "(a) considered a member of their family, (b) anthropomorphized, (c) touched and caressed, (d) considered to be a child: nurtured, protected, disciplined, and indulged, and (e) mourned upon separation" (Keil, 1990, p. 15).

Pet attachment: A meaningful bond that a person shares with his or her pet to provide a mutually beneficial relationship, connection, and comfort to both the pet and the human companion (Sable, 2013).

Positive affect: The amount a person emotionally experiences positive feelings such as "joy, interest, and alertness" (Miller, 2011, p. 111).

Pride: a self-conscious emotion that occurs when a goal has been attained and one's achievement has been recognized and approved by others. (American psychological association, n.d.-f).

Priming: "In the construct of cognitive psychology, the effect in which the recent experience of a stimulus facilitates or inhibits later processing of the same or a similar stimulus." (American Psychological Association, n.d.-g.).

Selective attention: "Selective attention is typically measured by instructing participants to attend to some sources of information but to ignore others at the same time and then determining their effectiveness in doing this." (American Psychological Association, n.d.-h).

Self-conscious emotion: "an emotion generated when events reflect on the worth or value of the self in one's own or others' eyes." (American Psychological Association, n.d.- i).

Well-being: The fitness of an individual, employee including body and mind, at work and life outside of work (Schulte & Vainio, 2010)

Research Questions and Hypotheses

The primary intent of this quantitative study was to address the influence of attachment to a pet bird on an individual's loneliness and perceived meaningfulness in life. To assess this, I formulated the following research questions and hypotheses:

RQ1: Is less loneliness associated with greater attachment to a pet bird (statistically controlling for the attachment manipulation)?

H_a1: Decreased loneliness is associated with greater attachment to a pet bird (statistically controlling for the attachment manipulation).

H_01: Loneliness is not associated with attachment to a pet bird (statistically controlling for the attachment manipulation).

RQ2: Is having greater meaning in life associated with greater attachment to a pet bird (statistically controlling for the attachment manipulation)?

H_a2: Greater perceived meaning in life is associated with greater attachment to a pet bird (statistically controlling for the attachment manipulation).

H_02: Perceived meaning in life is not associated with attachment to a pet bird (statistically controlling for the attachment manipulation).

RQ3: Does the level of attachment to a pet bird influence a person's feelings of loneliness?

H_a3: Loneliness is influenced by the level of attachment to a pet bird.

H_03: Loneliness is not influenced by the level of attachment to a pet bird.

RQ4: Does the level of attachment to a pet bird influence a person's perceived meaning in life?

H_a4: Perceived meaning in life is influenced by the level of attachment to a pet bird.

$H_0$4: Perceived meaning in life is not influenced by the level of attachment to a pet bird.

Theoretical Framework

To adequately explore a study of this complexity, a multitheoretical approach was necessary. The first theory I used was Bowlby's (1969) theory of attachment. Ainsworth and Bell (1970) further detailed, explored, and expanded the attachment bond by looking at characteristics such as "proximity seeking behaviors, proximity ambivalent/resistant behaviors, and proximity avoiding behaviors" (p. 62). And later, "Ainsworth identified three distinct patterns of infant attachment: secure, insecure-avoidant [sic], and insecure ambivalent/resistant," expressed by Bartholomew and Horowitz (1991), developed based on childhood interaction with the child's primary caregiver (p. 226). Bretherton (1992) revisited the work of the two founders in 1992. Julius et al. (2012) expanded further by discussing that human-avian companions could have similar attachment bonds to human-human attachment relationships, as they are like mammals in their bonding behaviors.

The second theory I used was Fredrickson's (1998) broaden and build model of positive emotions. Positive emotions, such as joy, interest, contentment, and love, can broaden an individual's physical, intellectual, and social resources, as well as motivate their "thought-action repertoire" to take actions that produce future positive life meaning (Fredrickson, p. 300). Her theory references four different urges or motivations relating to emotions. For example, (a) the urge to play relates to the emotion of joy, (b) the urge to explore comes from the emotion of interest, (c) the desire to savor and integrate into

life connects to the emotion of contentment, and (d) the recurrent cycle of all of these sums together as love. Fredrickson (1998) defined pride as the desire to share one's accomplishments with others and to anticipate even greater success in the future. In their 2002 work, Fredrickson, and Joiner found, by drawing on their earlier works (Fredrickson, 1998, 2001), that emotional well-being, motivated by positive emotions, led to positive, more diverse brain processing and beneficial emotions in the future. Also, Fredrickson and Joiner (2002) indicated that these useful emotions motivate movement toward subjectively meaningful life experiences and broaden the sense of affectual awareness, allowing one to see a broader global view. Frederickson and Joiner found that with increased clarity of cognitive processing of the world around the individual, chances for survival, health, and fulfillment increased. Chapter 2 will further explain these concepts in the literature review. The attachment theory will be related to the items that individuals report making them feel more attached or less attached to their avian companion and their interpretation of attachment.

Nature of the Study

The study was a randomized experiment with correlational aspects and a quantitative focus. The randomized experiment format allowed me to make judgments of contributory causation. The use of the quantitative method of an internet survey distributed through snowball sampling and convenience sampling provided an adequate sample to measure the variables for this study. I posted flyers for the purpose of snowball sampling with the administrator's permission on internet bird groups, both local and

national, located via Facebook. I completed convenience sampling by advertising in four bird stores and an avian and exotic clinic with flyers on bulletin boards. These were locations that individuals or families with birds may frequent. I advertised for individuals to complete a survey regarding their birds, their families, and their lives with their feathered kids. After the institutional review board (IRB) approved the survey format, I used Survey Monkey to collect data anonymously. This method was an adequate way to explore the basic association between attachment to a pet bird, perceived meaning in life (Dependent Variable 1), and loneliness (Dependent Variable 2).

The Meaning in Life Questionnaire (MLQ) developed by Steger et al. (2006) measured meaning in life—presence, and the UCLA Loneliness Measure Version 3 developed by Russell and Russell (1996) measured loneliness. I used the Lexington Attachment to Pets Scale (LAPS), developed by Johnson et al. (1992), to assess attachment to a pet bird.

Security priming is a cognitive processing principle that includes two main concepts. The first concept is the activation of sensations of safety, comfort, and love (Gillath & Karantzas, 2019). Secondly, memory triggers elicit a continued spread of language and mood-sensory communications throughout the mind and body (Gillath & Karantzas, 2019). These two concepts combine to evoke positive feelings generated by those we consider attachment figures in our lives (Gillath & Karantzas, 2019).

Using a security priming manipulation, the attachment condition versus the detachment condition measured the independent variable, which may or may not be

successful. The independent variable was the writing of instructions concerning attachment to the pet bird. For the attachment condition, I asked the individual to list a few things that made them feel attached to their pet bird, while in the detachment condition, I asked the individual for a few things that made them feel detached from their pet bird.

The participants were internet-using adults, age 18 and over, who currently own a bird of any age or gender. The dependent variables consisted of measures of loneliness, perceived meaning in life, and attachment to a pet bird. Data use included examination of the relationships between loneliness and attachment to a pet bird and between loneliness and perceived meaning in life (presence). Post completion of data collection, I completed two two-tailed *t* tests for RQ3 and RQ4. Then I completed a multiple linear regression to address the first two research questions and included means, standard deviations, and effect sizes as descriptive statistics.

Assumptions

One assumption was that the participants provided honest and accurate responses. I assumed that they could access the computer to access and complete the surveys, comprehend the questions in the original language of printing for this study, and tolerate forced answer responses. I assumed that there would be an adequate response rate to accommodate the selected power analysis. An additional assumption was that these instruments measured the attributes they purported to measure. I assumed that the manipulation as a priming exercise would be successful. An additional assumption was

that any individual receiving a flyer would comprehend that the respondents needed to be over the age of 18 and not the pet bird, which may have limited responses.

Scope and Delimitations

The focus of the study would be on those owners who possessed a minimum of one bird at the time of the study. The results of this study may expand knowledge on the benefits of bird ownership. The participants in this study included adults aged 18 and older who could comprehend and speak English, own a pet bird, and navigate a computer independently.

Limitations

Research using self-report measures frequently have challenges because people want to give the correct answer and may not honestly report their feelings and beliefs (Demetriou, Özer, & Essau, 2015). Another limitation is that one cannot make causal conclusions from correlational findings. Individuals have different personal meanings associated with such emotional issues as attachment, which likely means different things to different individuals. It was not possible to mitigate this issue within the scope of my study. Using specific instruments may be a limitation of the study. Another limitation to the correlational aspect of the study may be in the interpretation of the contributory causation. The correlations may reflect the presence of other pre-existing pets in the home besides a pre-existing pet bird, as the sample was not limited to families who only owned birds at the time of the study. Potential biases included (a) the number of people who have an attachment to a specific pet bird, including type and level of attachment; (b)

whether they are committed to one bird or have multiple birds, maintaining more of a flock mentality with diverse kinds of birds; and (c) having variable levels of attachment with different birds. People who have multiple birds and other household pets may have varying attachment levels and relationships with the animals (birds, dogs, and cats). To address this concern, I included the phrase, "If you have more than one pet bird, focus on the bird you feel closest to," in the instructions for the attachment manipulation.

Significance

While research on companion animals in society has grown (Hosey & Melfi, 2014), the area of research regarding pet birds is relatively limited. Potential contributions of the study are that it will expand the knowledge base regarding pet attachment, specific to pet birds, and add to the field of study on pet attachment theories. In this study, I uniquely addressed the question of whether greater attachment to a pet bird increased perceived meaning in life. I also addressed whether greater attachment to a pet bird decreased loneliness.

Positive social change could occur with the spread of education regarding birds as animals, pets, and their impact on the psychological well-being of humans. Along with this goal for positive social change, I hope that individuals become more aware of the benefits of adopting surrendered or previously owned birds as pets, therapeutic pets, and lifelong companions. The research asked some people to write about their attachment to their pet bird, defining what made them feel more attached to their pet, for the essay portion of the assessment.

Mental health professionals could assist their clients, whether individually or in groups, to develop concepts to help reduce loneliness or foster a meaningful life based on writing, thinking about, drawing, coloring, or creating an item related to their pet bird. Mental health professionals may also discuss concepts related to increased social involvement and possible positive experiences because of their pet bird. This research may encourage individuals to think more about their attachment to their pets, the process of developing the attachment, and their attachment to their pets.

Summary

In this chapter I presented a brief introduction to the study, the problem statement, the purpose, the nature of the study, the research questions, the theories, the scope and delimitations, the limitations, and the significance of the study. I looked at attachment, whether this may affect perceived meaning in life, and whether loneliness in humans can be alleviated when avian companions are involved. Chapter 2 will include a review of the literature about pet companions, the research strategy for the study, and some historical and scientific perspectives about birds as companion animals. I will also discuss additional theoretical formulations and further methodological concepts.

Chapter 2: Introduction

Hirschman (1994) classified pets as playing two different roles: (a) animals as objects/products or (b) animals as companions. When classified as objects or products, they are (a) ornaments, (b) status symbols, (c) avocation, (d) equipment, (e) people, and (f) extensions of the consumer's self (Hirschman, 1994). There is little available research on the affect pet birds have on their owner's emotional state. In this study I examined the affect attachment to a pet bird has on a person's psychological wellbeing. In this chapter, I explore the previous research on pets and attachments, as well as information regarding the theoretical framework.

When classified as a companion, the perception of an animal is as a (a) friend, (b) self, or (c) family member (Mosteller, 2008). For example, in a study by Raupp (1999), children's responses to pets may reflect behaviors modeled for them by their parents. In this manner, parents' modeling applies not only to attachment to people but to pets as well. Meanwhile, Noonan (1998) discussed pets in the roles of "attachment figures, transitional objects, and therapists" (p. 17). As evidenced above, birds have held many different positions under their varying guises throughout history. However, little research has examined their role as avian companions in attached relationships impacting meaning in life and loneliness. In the fields of helping professions, birds have touched the lives of individuals in several different settings. I will discuss these further as I move onwards.

Nightingale (1860) discussed that "a bird in a cage is sometimes the only pleasure of an invalid confined for years to the same room and they should be encouraged to feed

them if they are able" (Nightingale, 1860). Nightingale discussed that a person gains pleasure despite being limited in their social interaction by still being encouraged to have activities involving their pet (Nightingale, 2012). If and individual is confined to an area with limited visitors, a small space, and have few family members remaining they may feel very alone, and Nightingale saw that feeding these small birds gave individuals a task to do, encouraged the mobility, flexibility, and mental capacity to do the task, and companionship when they were alone by spending time with the living breathing bird. Nightingale, does not include numeric values for the individuals in care who had the opportunity to experience birds in their rooms. Bucks (1903a,1903b) talked about pets in relation to human psychological wellbeing. Bucks first article of writings and experiment did numerically account for children, types of pets they had, but focused on essays reviewing a wide span of concepts on childrens' views on emotional and psychological wellbeing in regard to dogs as pets. Buck's second article explores essays written by a specific number of children, specific ages, words the bird speaks, and behaviors reported by the children. Bucks compared avian companions to human companions in their ability to improve individuals' psychological well-being. Bucks's (1903b) analysis of a collection of children's essays regarding Oliver, the tame crow, demonstrated the impact the bird had on children growing up in the nearby area, recording their observations of the bird from their essays including language, behaviors and interaction with people. Watson (1914), with Terns, expanded research on companion animals when exploring the skills, abilities, and behaviors demonstrated by birds. Watson specifically describes behaviors of

infant terns with scientists in feeding, brain functions, vision, and olfactory functions, but not in companionship between people and birds.

Of their birds as companions, Tobias (1998) reported:

> For many years, my wife and I have lived with several magnificent parrots. We share everything with these friends; we moon together, goose each other, run hysterically around the house, blow out our tandem ecstasies, shake out the water, stalk, shout, laugh, groan, and sleep together… I have oriented my life to be able to spend most of my time with them, sharing to the extent possible the exquisite wonders of the world that we all perceive in different ways. Secretly, I feel incredibly lucky, for there are not greater wonders than these avians, they rival the sunlight, are tantamount to every wild scent and vision. They embody the extraterrestrial, the Earth Goddess, and all those unknowables about which philosophers have rhapsodized nostalgically about for millennia. (p. 143)

Tobias expresses the variety of behaviors, experiences, and friendships they have shared with their avian companions while they have resided in the home with them and relates them to the discussions of philosophers over time and creations which bring are beyond daily life.

Tobias also reported on companion animals, including avians: "without them, without these unexpected gifts, these wild ephemera, I am certain my life would be as cold, inorganic, and meaningless as an empty bathtub" (p. 144). Tobias expresses that his life

would be more synthetic and lack meaning without the daily interaction with and companionship of these animals in his life.

My research for the literature review revealed the wide range and process of transforming the concept of meaning in life into a measurable and quantifiable concept. Zilcha-Mano et al. (2011) discussed Bowlby's (1982) attachment theory and pets, but more specifically, "the present studies are based on the premise that pets can serve as attachment figures or attachment bonds can be formed with pets." (Zilcha-Mano et al., 2011, p. 346), in developing their Pet Attachment Questionnaire (PAQ). Although Julius et al. (2012), focused on the human attachment to pets, the majority of their research was focused on dogs. There has been little focus on pet birds.

In this chapter I discuss (a) the strategies involved in gathering research and data regarding the above topic, (b) a discussion of appropriate theoretical foundations to support this research, and (c) research regarding pets, birds, and attachment.

Literature Search Strategy

The literature search strategy included the use of a variety of databases, internet searches, word-of-mouth referrals, and attendance at a monthly bird group in Arizona. The time frame for research began in 1860 and continued through 2021. Electronic resources included the Thoreau Multi-Database Search (including ProQuest Central, Academic Search Premier, Ovoid nursing journals, University of Chicago, Dissertations and Theses, PsychArticles, PSYCHTests, and the Military and Government Collection) accessed through the Walden University Library. I was unable to retrieve some items but

was able to request copies through the Walden Document Delivery Service (DDS). If they were not retrievable through the DDS, I accessed them through Google Scholar, Google Books, and Amazon.com. The research search terminology used included *human-animal bond, human-animal attachment, attachment theory, service animals, meaning in life, perceived meaning in life, seeking life meaning, positive affect, pets and happiness, positive psychology, subjective well-being,* and *psychological well-being*. Additional research terminology included construct combinations such as *pet attachment and loneliness* and *pet attachment and meaning in life*. Additional search topics included *laughter, joy, well-being,* and *pet ownership*.

Theoretical Foundation

I hypothesized that (a) attachment to a pet bird may increase positive affect, which may increase perceived meaning in life, and (b) attachment to a pet bird may decrease loneliness by fulfilling social needs like human companions. In this section I first discuss the basis of emotion and affect, which can contribute to the perceived meaning in life. Second, I define Fredrickson's (1998) broaden and build theory. Then I close with Bowlby's (1982) attachment theory and how it related to human well-being, based on attachment to a pet bird.

Attachment to a Pet Bird and Positive Affect

Respondents to Loughlin and Dowrick's (1993) survey specifically stated that they value birds being fun and making them laugh. The social aspect of laughter at birds' ability to talk and sing appears frequently throughout the research of Anderson and

Loughlin and Dowrick as what respondents appreciate about their birds. Anderson (2006) studied attachment to a pet bird from the anthropomorphic aspect, and 26% of her study respondents in essay responses reported birds as making them laugh Frequently expressed in Anderson's research are recollections in human characteristics assigned to these avian companions. Kidd and Kidd's (1998) respondents similarly reported that what they enjoyed about birds was cuddling them, getting love from them, and their talking. . In addition to laughter, and fun are the social concepts of getting affection and closeness from their avian companions as discussed by Kidd and Kidd. Anderson's (2014) respondents discussed pet birds as being aware and sentient beings with feelings of their own 90% of the time. From Anderson's self-report measure on items stating that parrot owners feel they understand their parrot's body language and bird vocalizations, responses scored strongly agreeing = 67%, agreeing = 31%, and that they can understand the birds' language = 98%. Respondents in Andersons studies felt that they are able to understand their avian companions' emotions through vocal communications and physical responses. Pets do not replace human relationships but rather enhance them, and parrots are more of an actor in life than submissive beings like some other pet breeds.

Positive Affect and Perceived Meaning in Life

Clore et al. (2001) discussed that if a bond forms between positive affect and positive, meaningful experiences, the bond will become linked to the concept that life is meaningful. However, if these meaningful experiences are generated solely as a coping skill in order to rise above negative experiences, then the bond that life is meaningful will

be unrelated to the experiences (Clore et al., 2001). Gasper and Clore (2002) found in their experiments that the relevancy of positive or negative affect to the task impacts global versus local focus and supports the concept that global processing can be supported by resting or manipulated positive affect. According to King et al. (2006), positive affect may be a pre-emptive state leading up to a meaningful experience versus a meaningless task. King et al. found that the average daily meaning in life was related to overall meaning in life (r =.34, p < .003), was along with the average daily positive affect (r = .54, p < .001). When reviewing experimental research in the effects of positive affect on perceived meaning in life, a few different concepts appeared. Lyubomirsky et al. (2005), completed an extensive review of experimental research and found that positive affect cultivates and nurtures behaviors including sociability and activity (mean r = .51), altruism (mean r = .43), liking of self and others (mean r = .36), strong bodies and immune systems (mean r = .38), and effective conflict resolution skills (mean r = .33), promoting life satisfaction and meaning in life (p. 840). Lyubomirsky et al.'s research also displayed a mean effect size of .25 for performance on complex tasks. King et al. (2006) stated that their study results showed that a positive mood at least partially enhanced judgements of meaning in life. .

Meaning in Life and Broaden and Build Theory

Fredrickson (1998) defined four areas of positive emotions (Love, interest, contentment, and joy), and in Fredrickson (2001), she added a fifth area of pride. According to Fredrickson, even though positive emotions do not necessarily result in life-

saving actions, unlike more negative emotions, such as fear, they are beneficial. Fredrickson (1998) further defined these positive emotions, adding to how they may have played an integral part by encouraging the development of useful emotional tools for use in life situations and future life views, or meaning in life. Meaning in life is a construct with many different perspectives and perceptions.

Fredrickson (1998) suggested that positive emotions, including love, interest, contentment, joy, and pride in sharing, broaden people's temporary or instantaneous cognitive-motion reserve or thought-action repertoire. Fredrickson also indicated that thought-action repertoires also cause individuals to expand their valuable range of assets and tools at their disposal, whether they be social, physical, financial, or emotional. These assets and tools hold more strength and durability than the initial, transitory emotions that led to their discovery. As a result, the person retains a durable asset or tool that can be utilized later to benefit them in other settings and situations. Thus is Fredrickson's "broaden and build" theory of emotions.

Together, Fredrickson and Losada (2005) discussed emotions as complex systems that concurrently change repeated behaviors, including thinking behavior, subjective experience, verbal and nonverbal communication, and physiological activity. Secondly, such multicomponent affect systems are dynamic: they change over time as the various components within the affect system mutually influence one another (Fredrickson & Losada, 2005, p. 680).

Fredrickson and Joiner (2002) discussed how multicomponent systems paralleled with the non-linear dynamic systems model show how the positivity ratio and positive affect can motivate movement toward subjective meaningful life experiences, including perceived meaning in life (Fredrickson & Joiner, 2002). Fredrickson and Losada (2005) emphasize how minor positive emotions can have long-term consequences in terms of life satisfaction and perceived meaning.

Attachment Theory and Loneliness

Bretherton (1992) discussed Bowlby's (1982), principles of attachment as including (a) a *secure base* from which to explore; (b) a *safe haven* to return to for reassurance; and (c) *proximity maintenance*, which is maintaining the relationship with or nearness to the principal caregivers. The proximity maintenance grows stronger after engagement with the primary caregiver, including social meetings with the individual or infant. According to Bowlby a “secure base” is an originating territory (including people, places, and other inhabitants) that allows a person to feel confident in exploring the world around them (Bowlby, 1969).

Birds can be included in human attachment bonds because of their similarity to mammals in their attachment behaviors (Julius et al., 2012). Birds have a longer potential life span than other traditional pets (Anderson, 2014). A person's meaning in life and loneliness can be impacted by their pet bird, just as much as their current moods affect how they interact with their pet bird. The birds are not inanimate objects. They have the potential to remind their companion(s) of little things, such as a forgotten part of the

bird's daily routine, a positive event that might be a mood booster on a day when the person's life might feel less meaningful, or on a day when the person might feel more alone.

Birds, according to Jessen et al. (1996), can help reduce loneliness by increasing social engagement as conversation starters and icebreakers for older people, giving them a sense of pride in themselves, and providing an opportunity to meet new people and talk to others. According to Loughlin and Dowrick (1993), avian companions fulfill the same needs as dogs and cats and are more feasible pet options for some owners. Birds may be better companions for those with less income, more mobility challenges, smaller living spaces, and who are more socially isolated.

Kidd and Kidd (1998) showed more frequently their participants enjoyed physical companionship of their birds, followed by ability to converse with their bird, and friendliness brought to their life from those two elements of the bird's personality. Gardiánová and Hejrová (2015) discuss benefits such as lack of depression, increased bonding between clients, motivation for peer-to-peer immersion, and elevated presentation in responsibility and self-esteem in participating facilities. Cusack (1988) discusses how it is difficult to assess the benefit of human attachment to companion animals in scientific terms. It continues to be a hypothesis that merits further evaluation in current research.

Some people have chosen an avian companion as an alternative to the loneliness they feel when their social connections do not work out. This concept fulfills the

definition of Bowlby's construct of a “safe haven”. While people like to explore from their home base, they may keep a pet as an ongoing social companion. Thus, it allows them the freedom to explore from their home base while knowing their pet will still be there when they return home, as a warm reassurance or welcome (secure base/safe haven). They may take pets with them on daily outings because they cannot bear the separation from their pet (separation distress from leaving the safe haven). People desire to be close to their pets (proximity maintenance), and they may take the pet with them on everyday excursions or seek out other pet lovers. Anderson's (2014) discussed the birds as lifesavers, which prevented potential suicides and gave a reason for their existence or being.

Literature Review Related to Key Variables

Pet Attachment and Loneliness

Ainsworth and Bell (1970) stated that the tie between two people or animals that is affectionate, connected to a specific being, not transferable, or dependent on a particular situation is attachment. The abstract concept of loneliness has varied descriptions, including articles dedicated to its conceptual analysis (Huang, et al, 2010). For this study, I focused on loneliness as the "lack of interpersonal intimacy" as defined by Chelune et al. (1980, p. 462).

Researchers have continued to study and advance Ainsworth’s attachment theory. Some assessment tools used have included the standardized pet tool (Kidd & Kidd, 1994), the pet attachment questionnaire (Zilcha-Mano et al., 2011), the companion

animal bonding scale (Siegel et al., 1999), and several others I explored further in this section.

Castelli et al. (2001) presented research showing that "feeling attached to animals was not associated with being isolated from human companionship; in fact, the opposite was true, supporting their second hypothesis" (p. 184). Castelli et al. focused on a sample of male pet owners with AIDS living in the San Francisco area who received assistance from Pets Are Wonderful Supports (PAWS). Castelli et al. also indicated that men whose social networks included their friends and family had more significant relationships with their pets than those whose friends and family were not involved in their social network. Castelli et al. discovered that loneliness was higher in the sample with a smaller social network than in those with a larger social network, especially if they had fewer and farther away friends.

Black (2012) discussed the relationship between loneliness and companion animal bonding utilizing a sample (n = 293) of people who completed self-report measures of loneliness, pet ownership, companion animal attachment, and social support (Black, 2012). The measures used in the above study included the Revised UCLA Loneliness Scale (Russell et al., 1980), the Companion Animal Bonding Scale (Poresky et al., 1987), and the Social Support Questionnaire: Short Form (Sarason et al., 2016),(Black, 2012). Outcomes of this study reflected that attachment had a significantly negative relationship with loneliness and less loneliness among pet owners in the high school age group. The length of the relationship with the pet and the number of pets in the home were unique

elements of Black's study. Also, of interest in Black's study was the positive relationship between the Companion Animal Bonding Scale (CABS) and the number of pets, but not the length of the pet relationship (Black, 2012). The weaknesses of Black (2012) included the need for additional demographic assessment of diverse adolescent cultures and the use of CABS, which was not the truest to attachment theory concepts. Black's study was a cross-sectional study, which prevented Black from drawing causal conclusions. Black's study left room for additional variables to be explored further, including (1) longitudinal studies of loneliness levels before acquiring a pet and as attachment grew and (2) longitudinal changes in loneliness and pet attachment from childhood into adolescence. The sample size consisted of 47 individuals who did not own pets; this was a small representation of a large and varied population. Most not having pets wanted pets but had allergies, landlord restrictions, or parental restrictions as reasons for not having one (Black, 2012).

Zasloff and Kidd (1994) completed a study (n = 148) with female students at the graduate and postgraduate level in education and business administration who lived alone, were single, and were without a mate. The assessments included in this study were the Revised UCLA Loneliness Scale and the Pet Relationship Scale. The outcome of "t tests showed no difference in loneliness or attachment between pet owners and non-owners, or between dog or cat owners" (Zasloff & Kidd, 1994). Individuals who only lived with dogs were more attached to them than those who lived with dogs and other people (t23 = 2.27, p. 05) (Zasloff & Kidd, 1994, p. 749–750). Owners who lived solely

with their cats and did not share them with other people were much less attached to their cats than dog owners ($t34 = 2.51$, p. 01), and there was "no significant relationship between age and loneliness (r =.09)," (Zasloff & Kidd, 1994, p. 749–750). Zasloff and Kidd's research found women living alone without a pet were significantly lonelier than women in other groups of the study, $\mu = 38.9$ (±8.1), and there was no significant difference between highly attached and less attached individuals on these scores. Their findings did report a lack of correlation between loneliness and pet attachment scores Zasloff and Kidd could not draw causal conclusions regarding loneliness for women living alone because it was a correlational study. Meanwhile, they opened some exciting research avenues. Some options for building on Zasloff and Kidd's work would be utilizing the Revised UCLA Loneliness Scale with a more extensive and diverse sample than the 148 females only and a non-convenience sample, in addition to extending the study longitudinally and expanding the spectrum of acculturation beyond just the undergraduate and graduate student populations, single individuals, and those living alone without a mate (Zasloff & Kidd, 1994).

Antonacopoulos and Pychyl (2010) completed a study of 132 Canadian adults aged 18 or older living alone: 40 owned dogs, 26 owned cats, and 66 did not own dogs, cats, or other pets. Individuals completed a survey via Survey Monkey regarding "factors affecting the well-being of individuals living alone" (Antonacopoulos & Pychyl, 2010, p. 40). The 15-minute online survey packet for their study included the following measures: demographic information, items from the Multidimensional Scale of Social Support

(MSPSS) (Zimet et al., 2015), the (LAPS) (Johnson et al., 1992), and criterion variables measured by items from the Center for Epidemiologic Studies-Depression Scale (CES-D) (Radloff et al., 1997).

Significant differences in levels of loneliness were not present regardless of pet ownership status or level of social support (Antonacopoulos & Pychyl, 2010). Ownership of a cat or dog did not predict loneliness or depression levels among those living alone, but human social support did ($\beta = -0.51$, $p < 0.001$) The research by Antonacopoulos and Pychyl (2010) showed that human social support was significant, while other variables were not, as presented in the following example. When social support was low, loneliness was high, and attachment to a pet was high, compared to when loneliness was low, social support was high, and attachment to a pet was high. The main benefits of having dogs and cats, as expressed by pet owners, were first "companionship," followed by "physical activity with the dog" and "love and affection" for dog owners (Antonacopoulos & Pychyl, 2010, p. 46-47). For cat owners, "love and affection and being responsible for another living being" followed second and third (Antonacopoulos & Pychyl, 2010, p. 46–47). In response to the question on the impact of pet ownership, "84.2% of dog owners and 80% of cat owners indicated that their pet had had a strong positive impact" (Antonacopoulos & Pychyl, 2010, p. 48). The limitations of Antonacopoulos and Pychyl's (2010) study are that the study included high numbers of educated individuals, non-pet owners, females, and a measure that considers pet ownership (Antonacopoulos & Pychyl, 2010). Also, due to the study by Antonacopoulos and Pychyl (2010) being

correlational, one cannot draw causal conclusions. Another consideration in a future longitudinal study would be: (1) when the owners acquired and became attached to their pet; and (2) the length of attachment to their pet (Antonacopoulos & Pychyl, 2010). This study did not address the impact of pet owners living with other people, which could affect loneliness and attachment to the pet (Antonacopoulos & Pychyl, 2010).

Weiss (1973) discussed how limited the study of loneliness had been up to that point. Also, Weiss discussed ideas such as those of Harry Stack Sullivan and Freida Fromm-Reichmann, who related loneliness to fear impacting well-being to the point that people do not remember situations of loneliness, and professionals avoid treating it to not make themselves uncomfortable with the "loneliness of everyday man" (p. 12). Weiss equated the loss of relationships and the need to integrate new relationships as reasons to develop the coping skill of seeking new supportive relationships, thus displaying a positive relationship between loneliness and supportive attachment relationships.

For her study, Krause-Parello (2008) completed a descriptive study evaluating the relationships between loneliness and general health. She was also able to examine the relationship between pet attachment support and general health. Krause-Parello's (2008) study included a sample of (n = 159) women between 55 and 84 years of age who owned either a canine or feline, resided either at an independent living housing community that was pet friendly or participated at a senior citizen community center, and had the ability to read, write, and communicate in English. Individuals responded regarding the pet they had the most feelings for if they had multiple pets. (Krause-Parello, 2008).

This study, unlike others, included the Psychological General Well-being Scale (Dupuy, 1984) and the more familiar Revised UCLA Loneliness Scale, as well as the Pet Attachment Scale (PAS) (Albert & Bulcroft, 1988). According to Perry (1990), the mean loneliness scale score was in the moderately high range. Perry (1990) reports scoring ranges starting as follows: "65-80, equaling a high degree of loneliness; 50-64, equaling a moderately high degree of loneliness; 35-49, equaling a moderate degree of loneliness; and a score of 20-34, equaling a low degree of loneliness" (p. 298).

From work by Krause-Parello (2008), the two hypotheses that aligned most closely with the subject matter of my present study include: "What is the relationship between loneliness and pet attachment support in older women?" and "Does the coping resource of pet attachment support mediate the effect of loneliness on general health among older women?" (Krause-Parello, 2008). The results reported in response to the first question showed a "statistically significant inverse relationship" ($r = –.28$, $p = .00$) (Krause-Parello, 2008, p. 9). Study results in response to the second question required three regression analyses, and the description follows. For regression 1, Krause-Parello (2008) analyzed loneliness and general health and the PAS's mediation effect between loneliness and general health. The results showed that "loneliness (independent variable 1) had a significant effect on the mediating variable (PAS; $\beta = .19$, $p = .02$)" (Krause-Parello, 2008, p. 9). In the second regression of their study, the "analysis of the independent variable (loneliness) had a significant effect on the dependent variable (general health; $\beta = –.28$, $p = .00$)" (Krause-Parello, 2008, p. 9). According to the findings

of their third regression, "PAS did mediate between loneliness and general health (β = -.25, *p* =.00)" (Krause-Parello, 2008, p. 9). Per the discussion outcomes, pet attachment as assistive support may (1) support health and (2) mediate loneliness. (Krause-Parello, 2008). From work by Krause-Parello (2008), the two hypotheses that aligned most closely with the subject matter of my present study include: "What is the relationship between loneliness and pet attachment support in older women?" and: "Does the coping resource of pet attachment support mediate the effect of loneliness on general health among older women?" (Krause-Parello, 2008). The results reported in response to the first question showed a "statistically significant inverse relationship (*r* = –.28, *p* =.00)" (Krause-Parello, 2008, p. 9). Study results in response to the second question required three regression analyses, and the description follows. For regression 1, Krause-Parello (2008) analyzed loneliness and general health and the PAS's mediation effect between loneliness and general health. The results showed that "loneliness (independent variable 1) had a significant effect on the mediating variable (PAS; β =.19, *p* =.02)" (Krause-Parello, 2008, p. 9). In the second regression of their study, the "analysis of the independent variable (loneliness) had a significant effect on the dependent variable (general health; β = –.28, *p* =.00)" (Krause-Parello, 2008, p. 9). According to the findings of their third regression, "PAS did mediate between loneliness and general health (β = -.25, *p* =.00)" (Krause-Parello, 2008, p. 9). Per the discussion outcomes, pet attachment as assistive support may (a) support health and (b) mediate loneliness. (Krause-Parello, 2008).

According to Krause-Parello (2008), these two discussion outcomes agreed with the stress, coping, and adaptation theory (Lazarus & Folkman, 1984), which guided their research. For future research, they recommended additional work, including the concept that cohabitating with pets for aged women may "promote health" and that as loneliness increased, so did pet attachment with aged women (Krause-Parello, 2008, p. 10).

Previous studies focused on insecure attachment, while the following research focused on four components of secure attachment. Meehan et al. (2017) developed a new attachment measure for pets in their study. Meehan et al. introduced the Emotional and Supportive Attachment to Companion Animals Scale (ESACA), which began as a 60-item scale and was reduced to 31 items and found to have high (Cronbach's $\alpha = 0.96$) and strong psychometric reliability. Meehan et al. established psychometric reliability by utilizing varimax rotation and demonstrated moderate convergent reliability with their Commitment to Animals Scale ($r(79) = 0.40$, $p < 0.01$).

According to Meehan et al. (2017), owners' responses matched the projected responses that animals played a special role in the individual's social circle. They found that to owners, animals were not familial, a boyfriend, a girlfriend, or a significant other, or in the category of homo sapiens. "As expected, owners perceived their companion animals to be a unique source of social support" (p. 284). So far, this assessment has only been utilized in the two initial studies and is too new to be used in this study, so we will remain with the LAPS.

This section discussed how pet attachment and loneliness are related and referenced several studies regarding pet attachment and loneliness in humans. Included in this section were several studies with different age groups (adolescent, college, and adult), cultures (cross-sectional, southwestern schools), and a variety of breeds of animals. The studies reviewed covered areas of diversity, with many more areas for future research, and defined the gap between loneliness and attachment to a pet. In the following subsection, we move into the more specific area of reviewing research on well-being and birds as pets.

Literature review of current findings of pet birds and human well-being

Can birds as pets contribute to psychological well-being in the home environment? In Anderson's (2003) study, she concluded that "parrots, like other companion animals, become part of the social selves of their owners and integral members of their households," becoming fictive feathered kids, or "fids" (p. 410).

Lindner (1998) refers to her avian companions, both Mollucan Cockatoos, as "roommates" and describes their behaviors in attracting people for company. Per Lindner (1998), Mango calls "C'mere, I wuv you" and will "reach his head as far as it can go, even' standing on tippie toes,' so they will pet his feathers…" (p. 58). He will also "place his head against their chest and look up into their eyes" (p. 58). In Lindner (1998), Mango has also taken to calling her to "turn out the lights" around his bedtime and likes it done promptly; if not done with "the immediacy that he'd like," he discovers the light switch and turns off the lights himself (p. 58).

Gray and Young (2011) classified pets as playing eight different roles: (a) hunt, (b) defense (unspecified), (c) defense versus nonhuman predators/threats, (d) defense versus people, and (e) work (carrying burdens/sledding, or herding). (f) playthings, (g) waste removal, and (h) vermin removal Birds were classified specifically in the following categories: hunt (n = 1), defense vs. nonhuman predators/threats (n = 3), defense versus people (n = 1), and playthings (n = 13). In the areas of feeding, sleeping, and positive and negative behaviors, birds' feeding was provisioned (n = 5), of good quality (n = 1), non-nocturnal living arrangements: outdoor roaming (n = 3), indoors (n = 2), positive care: playing with (n = 1), positive care: verbal communication (n = 5), and positive care: perceptions/symbols (n = 2). Gray and Young stated, "We feel that the benefits frequently outweigh the costs of keeping dogs, cats, and other pets, and that pet-keeping in this sample is not likely to compromise human fitness." "The cases in which birds, some dogs, and other pets are kept as playthings may not offer economic benefits to human caregivers, but rather proximate emotional rewards, especially to children" (Gray & Young 2011, p. 27,) as proximate emotional rewards, or imminent or pending social rewards that involve other people in human lives.

In their study, Jessen et al. (1996) examined a group of older adults who had been newly admitted into one of two skilled rehabilitation facilities to address the question of whether there was an improvement in levels of depression, a decrease in loneliness, and a change in morale when exposed to a pet bird. Researchers placed birds in the rooms of individuals in the experimental group and not in the rooms of individuals in the control

group. Researchers gave both groups the Philadelphia Geriatric Morale Scale, the Geriatric Depression Scale, and the Revised UCLA Loneliness Scale (pretests) and collected demographic information. Subjects in the experimental group during the post-trial responded to five questions with positive responses, including that the bird was "good company, helped pass the time/entertaining, made me happy, and was interesting" (Jessen et al., 1996). In this study by (Jessen et al. (1996), the only statistically significant difference between the two groups was lower depression scores in the experimental group.

Mugford and M'Comisky's (1975) study involved six groups with a total sample of 18. Their study included a division into two control groups and four experimental groups to accommodate the necessary variables. These groups were all administered a three-part pilot questionnaire measuring attachment and perceived well-being in a pre- and posttest interview conducted five months later. The differences in variables between non-experimental groups were as follows: Groups 1 and 2 owned televisions, and Groups 3 and 4 did not own televisions (Mugford & M'Comisky, 1975). Differences in variables between experimental groups were as follows: Provisioners provided a Budgerigar bird to Experimental Groups 1 and 3 as a companion, and Provisioners provided Begonias to Groups 2 and 4 as companions the control group did not have birds or begonias. The sample of the control groups included Control Group 1 (n = 3), which had TV and no bird and no begonia, while Control Group 2 (n = 3) had no TV, no bird, and no begonia. This study found significant differences for the bird groups after five months with the

birds ($p < .01$) between the pretest and posttest results throughout the responses to the questionnaires evaluating internal and external individual attitudes "about people" and about their "psychological health." (Mugford & M'Comisky, 1975).

Beck et al. (1986) evaluated the response of individuals located in psychiatric hospitals to the presence of a caged bird in daily group therapy sessions. Seventeen individuals were randomly assigned to two groups; the experimental group, which had finches ($n = 8$; male = 6, female = 2), and the control group, which had no finches ($n = 9$; male = 6, female = 3). The outcomes showed significantly improved numbers in attendance, participation in group activities, and less hostility for the group that had a bird (experimental). The study was terminated early, after ten weeks, due to the substantial number of discharges from the hospital; the increase in hasty discharges may have been due to the addition of the finches (Beck et al., 1986).

Loughlin and Dowrick (1993) developed a 49-item questionnaire, with parts drawn from two other questionnaires. Part 1 included 13 questions that attempted to gather demographic information (age, sex, income, marital status, etc.). Part 2 included a request to rate 36 statements about why people keep birds using a 5-point Likert-like scale ranging from 1 = "not important" to 5 = "extremely important." Seven of the 11 questions in Part I were drawn from Horn and Meer (1984) for drawing demographic information (Loughlin & Dowrick, 1993). They reported fifty percent of the items in Part II were pulled from Odendaal and Weyers (1990).

Loughlin and Dowrick (1993) found in the results from their sample (N = 80) that the most crucial reason the participants selected for having avian companions was that they loved animals in general (n = 66, or 83%). They indicated that the five most frequent responses for keeping avian companions were that they could give a bird love and affection (n = 60), they liked the bird's personality (n = 60), they gained friendship and companionship with the bird (n = 56), and they enjoyed interacting with the bird (n = 56). Questions in Part II of the questionnaire related to the psychological needs of the participants for esteem, social safety, cognitive power, and aesthetic needs, as aligned with Maslow's (1970) hierarchy of needs; six graduate students categorized responses for the validity of the questionnaire (Loughlin & Dowrick, 1993; Maslow, n.d.). The study found that "59% of the bird owners thought their birds added more meaning to their lives and were judged to be related to the need for esteem from Maslow's Hierarchy of Needs." "The bird being fun and making the owner laugh fulfilled a social need of 59% of respondents" (Loughlin & Dowrick, 1993, p. 169). The relationship showed that the psychological needs of social and cognition might be fulfilled by laughter, as expressed by Loughlin and Dowrick, which is rated by respondents as one of the most important reasons they have avian companions. Anderson (2003) explored what people enjoy about their birds and their feelings about avian companionship. Anderson invited individuals to tell stories about their birds and describe how avian companionship is rewarding (Anderson, 2003).

Anderson (2003) discussed information from Ellen, who resides with:

> Her partner Leo, one dog (Butch), a parrot (Polly), and a cat (Boo), through study components including "five in-depth[sic] interviews with Ellen and her social support community, photos of pet and owner routines (past and current pets), and a pet related newsletter at Ellen's request. (p. 180)

Anderson (2003) reports in response to her survey:

> Of course, having a pet that yells, "Daddy's home!" when you walk in the door or says, "Good morning!" When you open the drapes is quite a significant event too. They are a lifetime commitment, much as your children are[sic] and they require your devotion as well as give theirs. (Survey Response No. 100)

Anderson (2014) also shared another response from her survey, where she reported:

> Bird ownership has helped me to overcome loneliness, depression, and overall sadness. I am in a wheelchair [sic] with paralysis of my legs and can't work. My birds are the best company while my husband is at work. Taking care of them (cleaning, feeding, bathing, etc.) gives me a purpose[sic] where I used to feel there was none … I take them everywhere because they are part of my family. (p. 376)

From the essay question, "What people enjoy most about their avian companionship," responses included the following statements most frequently:

"love/unconditional love, birds as family/children/Fids, companionship, interactive, physical contact," and "personality" (Anderson, 2003). Anderson concluded that "avian companionship is similar, qualitatively, to that provided by cats and dogs and is very important to those who consider parrots family members" (2003, p. 410). In 2020, Burmeister, et al., developed the Owner-Bird Relationship Scale (OBRS), a 21-question measure classified into three types of human-animal interactions: impersonal, personal, and close personal. These 21 questions were used to measure four dimensions of the owner-bird relationship: (1) how humans anthropomorphize their birds; (2) the social support provided by the bird to the owner; (3) the empathy, attentiveness, and respect of the owner toward the bird; and (4) the relationship of the bird toward the owner. The most important dimension was found to be how people anthropomorphize their bird, followed by social support by the bird for the owner, then the empathy, attentiveness, and respect of the owner toward the bird, and vice versa, the respect of the owner by the bird, measured by proxy through the survey of the bird owner (Burmeister, et al. 2020). Anderson's is the first measure of this kind; had it been created sooner, it may have been more useful as a tool in this study than the LAPS, Johnson, et al. (1992), in its specificity to birds. It also discussed an area of importance: the observation of the bird's behavior in its home environment, which has not been addressed in any study up to this point.

Summary and Conclusions

In conclusion, my study addressed attachment to a pet bird and how it impacts perceived meaning in life and loneliness. The available literature contained limited

research regarding avian companions, human attachment, and loneliness. There is, however, much information available regarding dogs, cats, and horses as animal companions, attachment, and opportunities for therapeutic interventions. Some of the weaknesses in the body of research literature include the fact that studies regarding birds are limited, those that do exist are anecdotal, and quantification is limited. Chur-Hansen et al. (2010) highlighted a gap in research literature because past research did not control for unknown influences on human-pet behavior, including attachment to companion animals and social support.

Of the available research, some of the studies were correlational, which limited the ability to draw causal conclusions. Also, I found no research examining pet attachment and perceived meaning in life, a specialization of this study. To further explore the relationships in this study, Chapter 3 will discuss the research design, instructions, permissions, and rationale for administering the assessments to measure loneliness, meaning in life, and attachment to a pet bird. Chapter three will also address threats to validity, ethical procedures and proper handling, security, and data storage over time.

Chapter 3: Research Methodology

The purpose of this study was to examine whether human attachment to a pet bird is associated with decreased loneliness and increased perceived meaning in life. This is a growing area of research, with limited studies specifically regarding birds as pets or companion animals (see Anderson, 2003; Fine, 2010). In this chapter, I review the research design, rationale, methodology, threats to validity, and end with the chapter summary.

Research Design and Rationale

The dependent variables I evaluated included perceived meaning in life, loneliness, and attachment to a pet bird. The independent variable was the writing task involving the two attachment conditions: (a) listing items that made one feel more attached to their pet bird, and (b) listing items that made them feel less attached to their pet bird. The study consisted of a randomized experiment, meaning individuals were randomly assigned to either Group 1 – more attached or Group 2 – less attached, by Survey Monkey. I selected Survey Monkey as it allowed me to evaluate relationships between the study variables, demographics, and what were presented as other unexplored or unexplained factors. The randomized experiment format allowed me to make judgments about contributory causation. In the next section, I discussed the population, tools, and assessments I used in this study.

Methodology

Population

Participants included adults who were 18 and older. Adults could be of any gender, orientation, education, or relationship background. Adults had to be able to use a computer to complete the survey requirements, which included reading, responding to a Likert scale format, and responding to a short answer essay question about their pet bird. Participants must also be owners of a bird of any age, gender, or breed.

Sampling and Sampling Procedures

I recruited the sample via convenience sampling and snowball sampling. Criteria for participation in the study included any individual who was 18 years of age or older and was currently the owner of a pet bird. The flyer/recruitment statement is included in Appendix A. The G power analysis represents a medium effect size ($d = 0.5$), with an error probability of $\alpha = .05$, power $(1-\beta) = .80$, and requiring a total sample size of 128. I selected a medium effect size due to the uncertainty of the expected effect size.

Procedures for Recruitment, Participation, and Data Collection

Snowball sampling consisted of a message post including only a copy of the flyer consisting of an image and text, an active link to the survey, and an active link to my school email for further questions, as located in Appendix A, which I posted on Facebook with the group administrator's permission. I had permission from the online administrators for Exotic Parrots in America who have nearly 3,500 members; Birds and Supplies in the United States Only, reporting 5,400 members; Hybrid Macaws & Parrots,

with 4,300 members; Hookbills for Trade in USA who had 4,200 members; Phoenix Exotic Birds, reporting 831 members; and Parront's of Fids, with 1,500 members. This message, posted on the internet bird group's news feeds, included the link to the anonymous survey as part of the flyer. I located groups at the local and national levels via Facebook. Both sample flyers are in Appendices A Flyer displaying an advertisement on bulletin boards in bird stores and in the Avian & Exotic Clinic invite individuals to complete a survey regarding their birds, their families, and their lives with their feathered kids. I received verbal consent from three bird stores and one Avian & Exotic Clinic once their lobbies opened to the public after Corona Virus 19 had abated. See Appendix A for an image of the recruitment flyer. See Appendix B for a copy of the demographic survey.

After consent to participate was received through a completed electronic consent form, each portion of the assessment was presented to participants with its instructions electronically. Individuals started by completing a writing item that involved one of two attachment conditions regarding a pet bird. Following the writing item, the UCLA Loneliness Scale Version 3 instructions and self-administration, the MLQ (Steger, et al. 2006), and LAPS (Johnson, et al., 1992) instructions and self-administration were given. Results were available via Internet data collection through Survey Monkey, and I analyzed the data. Included in Appendix C is a copy of the debriefing statement. No follow-up interviews or treatments are expected or planned at this time.

Instrumentation and Operationalization of Constructs

To assess the above variables, I used three Likert-type scales and a single essay question as a priming exercise and for manipulating the independent variable. The three assessments that used the Likert scale are the UCLA Loneliness Scale Version 3 (Russell & Russell, 1996), the MLQ (Steger, et al., 2006), and LAPS (Johnson, et al., 1992).

Loneliness

For this study, I reviewed and compared data regarding loneliness as it relates to attachment to a pet bird. As a result, subjective loneliness may be useful for correlating data. For educational purposes, I contacted the developer to request permission to use the tool (see Appendix D.

For this study, I used the UCLA Loneliness Scale, Version 3, by Russell and Russell (1996). It is a 20-item measure, scored on a 4-point Likert-like scale: 1 = never, 2 = rarely, 3 = sometimes, and 4 = always. Some examples include: "How often do you feel that you lack companionship?" "How often do you feel your relationships are not meaningful?" and "How often do you feel there are people who really understand you?" (Russell & Russell, 1996, p. 22).

The third version of the abbreviated UCLA Loneliness Scale (D. W. Russell & Russell, 1996) had a Cronbach's alpha of 0.91 for loneliness and pet attachment, indicating good internal consistency, and the UCLA Loneliness Scale, Version 3, measures loneliness. Russell and Russell (1996) report internal consistency measures ranging from 0.89 to 0.94 and test-retest reliability of $r = 0.73$ over a year (p. 20). The

scale has garnered further support for the valid use of this assessment for the current study.

Perceived Meaning in Life.

Meaning in life is a very abstract concept with various definitions and assessments. For this study, I used the MLQ to measure Dependent Variable 1: meaning in life. Developed by Steger, et al. (2006), the MLQ reviews both the presence of meaning in life (MLQ-P) and the search for meaning in life (MLQ-S). For educational purposes, I contacted the developer to request permission to use the tool, and I included the permission letter in Appendix E. I used only the MLQ-P scale. The MPQ-P scale was chosen as it is most applicable to this study. I still administered the entire MLQ scale as per the instructions.

One of two subscales, the MLQ-P has five questions and is scored between 1 (completely true) and 7. (absolutely untrue). Things like "My life has a clear sense of purpose," "I have found a fulfilling life purpose," and "My life has no clear meaning" are some instances of reverse-coded items (Steger et al., 2006a). According to Steger et al. (2006b), "the MLQ offers significant benefits over existing measures of meaning in life, including no item overlap with distress measures, a stable factor structure, stronger discriminant validity, a briefer format, and the ability to quantify the search for meaning (p. 80). The convergent and discriminant validity of the MLQ subscales (MLQ-P = presence) and (MLQ-S = search) across time and informants in comparison to two other

meaning scales is shown by a multi trait-multi method matrix. The comparison outcomes from these three evaluations are shown below.

When compared with other meaning-in-life measures by Steger et al. (2006a), the results are as follows:

> The alpha coefficients for the target self-reports on the MLQ–P and MLQ–S were 0.81 and 0.84 during Time 1, respectively, and 0.86 and 0.92 during Time 2, representing good internal consistency. One-month test-retest stability coefficients were good (0.70 for the MLQ–P, 0.73 for the MLQ–S). The PIL - Purpose in Life Test [sic] (0.86) and LRI – Life Regard Index [sic] (0.87) also showed good temporal stability and good internal consistency (0.88 and 0.93, respectively).

The correlations between the MLQ-P and MLQ-S were significant and displayed "better discriminant validity than the two often used measures" after multiple tests and retest cycles, (Steger et al., 2006b). The MLQ was found to be a short instrument with good psychometric properties, focusing on the presence and search for meaning in life, as discussed in a review by Brandstätter et al. (2012). The measure meets the description of a self-administered survey with two subscales: the presence of meaning in life and the search for meaning in life, each with five questions. It displays reliability of internal consistency (0.01-0.92) as well as test-retest reliability 1 month later, $N = 70$, 0.70, (+) 0.73 (G+)"; Brandstätter et al., 2012). The internal consistency for the MLQ-P subscale was $\alpha = 0.86$, with a small positive correlation with age ($r = 0.17$, $p < 0.05$). In Steger et al, "presence positively correlated with life satisfaction, positive emotions, intrinsic

religiosity, extraversion, and agreeableness, while negatively related correlations were found with depression, negative emotions, and neuroticism" (p. 84). In test-retest reliability for the MLQ-P the results were 0.81 at time 1 and 0.86 at time 2, representing good internal consistency (Steger et al., 2006b, p. 86). One-month test-retest stability coefficients were good at 0.70 for the MPL-Q when compared with " PIL (0.86), and LRI (0.87), which also showed good temporal stability and good internal consistency (0.88 and 0.93, respectively)" (Steger et al., p. 86). PIL and LRI showed excessive overlap with other measures of well-being. According to Steger et al., both the PIL and LRI supported past data and criticisms, with a discriminant validity of questionable quality but excellent convergent reliability overall, while the discriminant validity of the MLQ-P was of much better quality.

Attachment to a Pet Bird.

For this portion of the study, I administered LAPS (see Johnson et al., 1992), which has been used and applied in many settings. This measure assessed emotional attachment to one's pet; the primary research by Johnson et al. involved cats and dogs but included some other pets. After a review, they added questions that also measure weak and strong attachment, which were limited in other previous attachment measures. The LAPS was also a manipulation check for the attachment manipulation. If the attachment manipulation with the pet bird were successful, it would reflect higher attachment in the attachment condition than in the detachment condition on the LAPS. I contacted the developer to request permission to use the tool and included the permission letter in

Appendix F. Coefficient alpha was used to measure the 42 attachment questions' internal consistency. These items have a coefficient of 0.937, which indicates a good level of internal consistency. Creating a scale with a more manageable (i.e., fewer) number of components was the aim of this study. After looking at the adjusted item-total correlations for each of the 42 questions, it was discovered that 24 of them had values higher than 0.50 (Johnson et. al., 1992).

The ranking of item thresholds increased the reliability of the assessment because it was a measurement of the affective ties pet owners have for their animals" (Johnson et al., 1992). The correlations between the LAPS and three categories of respondent characteristics—respondent demographics, social network connections, and other traits associated with respondent-pet interaction—were investigated using an ANOVA (Johnson, et al.). Additionally, "average LAPS scores for varied interviewer estimates of respondent attachment to pets demonstrated a substantial connection between respondent and interviewer assessments of respondent attachment to a favorite pet was .64" (Johnson, et al., p. 171).

Content validity for the LAPS is displayed as all questions show a level of attachment to a companion animal. Also, it "strongly correlated to subjective ratings of respondent pet attachment that were made by interviewers" (Johnson, et al., 1992, p. 172). The three-parameter Item Response Theory (IRT) was utilized to increase the validity of the scale by including the "guessing factor," which was not included using the

two-parameter IRT. In addition, the two-parameter IRT was used to examine the structure of the LAPS across two groups of pet owners (dog versus cat).

Some examples of questions from the LAPS include: "My pet means more to me than any of my friends," or "I believe that pets should have the same rights and privileges as family members." Alternatively, "I think my pet is just a pet." These items are ranked on a four-point Likert-like scale ranging from 0 (strongly disagree) to 3 (strongly agree), though the online version also includes “don't know” and “refused”. The instructions were modified to make them pertain more specifically to a pet bird: "Keeping your pet bird in mind, please indicate whether you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with each item. If you have more than one pet bird, focus on the bird you feel closest to" (Johnson et al., 1992)

This assessment was administered to adults aged 18 to 83, with an average of 12 years of education, who are married, single, cohabiting, divorced, or widowed, male or female, and who grew up with or still have dogs or cats. Data were collected by telephone interview and random digit dialing from the population of Fayette County, Kentucky. The LAPS was revised to better suit dog owners and generalized to all pet owners. (Johnson et al., 1992)

Manipulation of the Independent Variable.

As defined in the Nature of the Study section in the first chapter, security priming is a cognitive processing principle including the activation of sensations of safety, comfort, and love and memory triggers eliciting a continued spread of language and

mood sensory communications throughout the mind and body that evoke positive feelings generated by those we consider attachment figures in our lives (Gillath & Karantzas, 2019).

Together, the attachment condition and the detachment condition acted as a security priming manipulation that may affect the dependent measures. The following procedure was followed for this portion of the study; each participant went to Survey Monkey via a link found on a flyer or Facebook post. Through one of Survey Monkey's 50% block randomization procedures, each participant was assigned to one of the two conditions. Essay responses were collected for each of the two attachment conditions: (1) those who list what made them feel attached to their pet bird, and (2) those who list what made them feel detached from their pet bird. Instructions for Condition 1: I requested that individuals, "Please list, in 50 or less words, a few things which made you feel attached to your pet bird; if you have more than one pet bird, focus on the bird you feel closest to." Instructions for Condition 2: I requested that individuals "Please list, in 50 or less words, a few things which made you feel detached from your pet bird if you have more than one pet bird, focus on the bird you feel closest to."

In a recent review by Gillath and Karantzas (2019), they report, "We found that supraliminally administered security priming (especially via guided imagery or visualization) is associated with beneficial effects across a diverse set of domains" (p. 86). In studies, ways to manipulate attachment security priming are through visualization, supraliminally through guided imagery, aurally in the voices or sounds of individuals,

creatures, or beings that one feels a close attachment to, or words that invoke a close attachment, as well as mood priming through written text. For the current study, writing about the individual's pet bird was expected to act as an exercise in visualization and, thus, could also have a priming effect on the study.

Data Analysis Plan

I used Statistical Package for the Social Sciences (SPSS) for data analysis, and there was a check for missing data and outliers, and a decision about how to deal with those items was made after the data was collected. Please see the research questions and hypotheses below. The completed statistical assessment included the administration of two-tailed *t* tests for hypotheses 3 and 4. I completed a multiple linear regression to address the first two hypotheses, as well as including means, standard deviations, and effect sizes as descriptive statistics. In addition, a *t* test was completed as a manipulation check on the attachment measure. The statistical measures discussed above were applied to the correlational data research, as well as outliers and supporting data for the hypothesis presented below.

Research questions and hypotheses

This study addressed the following research questions and hypotheses:

RQ1: Is less loneliness associated with greater attachment to a pet bird (statistically controlling for the attachment manipulation)?

H_a1: Decreased loneliness is associated with greater attachment to a pet bird statistically controlling for the attachment manipulation.

$H_0$1: Loneliness is not associated with attachment to a pet bird statistically controlling for the attachment manipulation.

RQ2: Is greater meaning in life associated with greater attachment to a pet bird (statistically controlling for the attachment manipulation)?

H_a2: Greater perceived meaning in life is associated with greater attachment to a pet bird, statistically controlling for the attachment manipulation.

$H_0$2: Perceived meaning in life is not associated with attachment to a pet bird, statistically controlling for the attachment manipulation.

RQ3: Does the level of attachment to a pet bird influence loneliness?

H_a3: Loneliness is influenced by the level of attachment to a pet bird.

$H_0$3: Loneliness is not influenced by the level of attachment to a pet bird.

RQ4: Does the level of attachment to a pet bird influence perceived meaning in life?

H_a4: Perceived meaning in life is influenced by the level of attachment to a pet bird.

$H_0$4: Perceived meaning in life is not influenced by the level of attachment to a pet bird.

Threats to Validity

Threats to External Validity

Threats to validity included participants misunderstanding the instructions or questions. Another challenge would be determining whether the findings could be

generalized to other populations and translated into other languages. I utilized assessments that have been applied to other populations, normed, and documented, as well as more recent translations, and this should not be a concern. When combining multiple assessments, the length of the complete survey could cause individuals to lose interest. For this assessment, the estimated time to complete all three assessments plus the manipulation question should be approximately 10–15 minutes.

Threats to Internal Validity

Selection maturation was not a concern in this study, as it was not a longitudinal study. Statistical regression challenges were not a concern as multiple tests and retests were not administered. The individuals not writing about what they are requested to address could be a concern in this study, as they are being asked to write about what made them feel attached to or detached from their pet bird, and they may want to please the assessor and not be truthful. Individuals who have lost birds in the past may have a different level of attachment to their current bird or may report differently than those who have never lost a pet bird. The manipulation question has not had its validity and reliability established and will have to be processed through a quantification process.

Threats to Construct or Statistical Conclusion Validity

Due to validity and reliability having been established previously through psychometric testing, there were not expected to be any issues with construct validity or statistical conclusion validity with the measures included in this study.

Ethical Procedures

Ethical procedures included approval from the IRB, provision of an explanation of the procedure, receipt of participant agreement through reading a consent form, and receipt of responses made anonymously. (Walden IRB approval no. 08-21-20-0041338) I was the only individual with access to the information through the Survey Monkey portal via an encrypted home network on a password-protected, secured laptop. All data was collected anonymously. It was analyzed through SPSS on the same secured laptop and stored on an external hard drive, which always remains with the netbook in a secure place. If hard copies are retained, they will be stored in a safety deposit box in a locked storage facility, as there is no on-campus location. Documents and data storage will be kept for three years, in accordance with IRB recommendations and the APA 7th edition. This will be completed outside of my work at the Crisis Response Network and predominantly through email, mail, and internet contacts, so ethical issues regarding conducting research in my work environment should not be an issue.

Summary

The study was a randomized experiment with correlational aspects and a quantitative focus. The randomized experiment format allowed me to draw causal conclusions. Use of the quantitative method of an internet survey with snowball sampling through the avenues of both online local and national bird stores, the Avian & Exotic Animal Clinic, plus flyers advertising for individuals to complete a survey regarding their birds, their families, and their lives with their feathered kids was an adequate way to

explore the basic association between attachment to a pet bird and perceived meaning in life (variable 1) and loneliness (variable 2). Data collection and administration situations have been discussed and clarified, data analysis reviewed, and ethical concerns addressed. After approval from the chair, committee, and IRB, the research and analyses were completed and prepared for presentation in later chapters of this dissertation.

Chapter 4: Results

The intent of this study was to evaluate whether having a pet bird was associated with human psychological well-being by assessing levels of attachment to a pet bird, levels of loneliness of people with birds, and the perceived meaning in life of people with birds. The research questions addressed four different relationships between attachment and different psychological concepts. RQ1 addressed how a lower level of loneliness is related to a greater attachment to a pet bird. RQ2 addressed how greater perceived meaning in life (presence) is related to greater attachment to a pet bird. RQ3 also addressed how a lower level of loneliness is related to the priming experiment of two groups of individuals who responded to the question about being either more attached or less attached to their pet bird and compares the means of these groups to see if their attachment level made a difference across the loneliness results. RQ4 addressed how increased perceived meaning in life (presence) is related to the priming experiment of two groups of individuals who responded to the question about being either more attached or less attached to their pet bird and compares the means of these groups to see if their attachment level made a difference across the perceived meaning in life (presence) results.

These possible associations were evaluated based on the outcomes of data collected from an online survey consisting of an experimental priming exercise, followed by MLQ by Steger, et al. (2006), UCLA Loneliness Measure Version 3 by Russell and Russell (1996), and the LAPS by Johnson, et al. (1992). Once data collection was

complete, the data was exported and downloaded from SurveyMonkey in both SPSS data file (.sav) and Excel file (.xlsx) formats for analysis in SPSS for statistical analyses. SurveyMonkey assigned a unique respondent ID to everyone who responded, which maintained anonymity by not including names. I screened the data for missing data points, which were varied and diverse, ranging from one to two questions completed, to stopping after Question 22, to only completing the experimental priming question. The results in Chapter 4 are presented in three sections: data collection, results, and closing with a summary.

Data Collection

I collected initial data for this study from 169 individuals (over 18 years of age) with birds who responded to the invitation to complete a survey. Survey Monkey collected survey data from participants for this study over two time periods. The initial period was from September 5, 2020, through April 12, 2021. It was initially closed as enough surveys were collected, but I found a significant number of them to be incomplete. With the approval of my committee, I reopened my survey for data collection from July 11, 2021, to August 11, 2021, to collect additional complete surveys. I went to extra lengths to gather adequate numbers, including adding additional time, adding additional Facebook groups, and adding additional bird stores. These efforts succeeded in gaining this number through the posting of a flyer (see Appendix A) inviting individuals to complete a survey in Facebook groups related to birds internationally, at bird stores in the Phoenix, Arizona area, and at the one cooperating avian clinic. The one cooperating

avian clinic offered to post the flyer on their Facebook page after new protocols at veterinary clinics did not allow pet owners to accompany their pets during appointments (i.e., curbside drop-off)"due to the SARS-CoV-2 Coronavirus Disease 2019 pandemic"(Applebaum et al., 2020).

Invitations were also distributed through snowball sampling by individuals. SurveyMonkey hosted the survey and collected data through a weblink via an online survey. The invitation to complete the survey flyer clarified the study's details and purpose and provided a web link and my contact information in case the participant wished to ask any questions.

Table 1 includes a summary of sample descriptive data for individuals included in this study who have birds. One hundred sixty-nine individuals enrolled in the study. I presented the risks and benefits in the information section of the online survey for this study. I received consent for treatment, explained anonymity through online documentation, and provided contact information.

Summary of Demographic Data

Regarding findings among demographic data, 169 individuals were surveyed, not all demographic or survey questions were completed on all the surveys. In both the more attached (35-54 = 33) and the less attached groups (45-64 = 37) of respondents, more middle aged individuals in the 35-64 year age bands, reported to have birds. In addition, for both experimental groups the predominant education level of those who have pet birds are those with bachelor's degrees. For both experimental groups individuals were

married or within a domestic partnership and had either 1 or 2 children. Respondents in both experimental groups reported additional pets in the home as well as additional other pets in their home as well. Of respondents surveyed, 75% (61 = more attached) and 73% (64 = less attached) reported having additional birds in their home environment. See demographic information gathered presented below (See Table 1).

Table 1

Descriptive Characteristics of People who have birds.

Demographic	Level	More attached *n* = 81	Less attached *n* = 88
Age (Years)	18-24 years	8 (9.9%)	7 (8%)
	25-34 years	9 (11.1%)	9 (10.2%)
	35-44 years	15 (18.5%)	9 (10.2%)
	45-54 years	18 (22.2%)	19 (21.6%
	55-64 years	9 (11.1%)	18 (20.5%)
	65-74 years	6 (7.4%)	7 (8.0%)
	Missing	16 (19.8)	19 (21.6%)
	Section total	81	88
Education	Some high school, no diploma	1 (1.2%)	3 (3.4%)
	High School Graduate	7 (8.6%)	12 (13.6%)
	Some College Credit, No Degree		
	Bachelor's Degree	30 (37.0%)	28 (31.8%)
	Master's Degree	16 (19.8%)	13 (14.8%)
	Doctorate Degree	9 (11.1%)	11(12.5%)
	Missing	2 (2.5%)	2 (2.3%)
		16 (19.8%)	19 (21.6%)
	Section Total	81	88
Marital Status	Single, never married.	11 (13.6%)	13(14.8%)
	Married or domestic partnership	42 (51.9%)	39 (44.3%)
	Widowed	2 (2.5%)	4 (4.5%)
	Divorced	10 (12.3	13 (14.8%)
	Missing	16 (19.8%)	19 (21.6%)
	Section Total	81	88
Children in the Home	Zero	38 (46.9%)	42(47.7%)
	One	10 (12.3%)	10 (11.4%)
	Two	11 (13.6%)	10 (11.4%)
	Three-Four	5 (6.2%)	7 (8.0%)
	Five Plus	1 (1.2%)	-
	Missing	16 (19.8%)	19 (21.6%)
	Section Total	81(100.00%)	88(100.00%)
Number of other pets in the home	Zero	2 (2.5%)	3 (3.4%)
	One	6 (7.4%)	3 (3.4%)
	Two	9 (11.1%)	12 (13.6%)
	Three – Four	9 (11.1%)	12 (13.6%)
	Five Plus	39 (48.1%)	39 (44.3%)
	Missing	16 (19.8%)	19 (21.6%)
	Section Total	81 (100.00%)	88(100.00%)
Kinds of other pets in the home	Cat	24 (29.6%)	30 (34.1%)
	Dog	44 (54.3%)	46 (52.3%)
	Bird	46 (56.8%)	52 (59.1%)
	Snake	1 (1.2%)	7 (8%)
	Rabbit	3 (3.7%	6 (6.8%)
	Hamster	2 (2.5%)	5 (5.7%)
	Chicken	15 (18.5%)	5 (5.7%)
	Lizard	3 (3.7%)	6 (6.8%)
	Iguana	1 (1.2%)	1 (1.1%)
	Gecko	2 (2.5%)	5 (5.7%)
	Pig	2 (2.5%)	-
	Guinea Pig	4 (4.9%)	2 (2.3%)
	Horse	4 (4.9%)	5 (5.7%)
	Goat	4 (4.9%)	-
	Missing	-	-
	Section Total	155(100.00%)	170(100.00%)

Total # of birds in the home	One	10 (12.3%)	14 (15.9%)
	Two – Three	21 (25.9%)	23 (26.1%)
	Four- Five	6 (7.4%)	11 (12.5%)
	Six – Seven	4 (4.9%)	3 (3.4%)
	Eight Plus	20 (24.7%)	13 (14.8%)
	Missing	20 (24.7%)	24 (27.3%)
	Section Total	81	88

Before analysis could begin, a series of key assumptions are necessary when using a multilinear regression in particular: linear relationship, multiple linear normality, and no multicollinearity (Statistics Solutions, n.d.). For the assumption of multilinear relationship, I utilized a visual examination of scatter plots of my different variables to review the alignment of the data as primarily linear and not curvilinear. For evaluation of the multiple linear normality, I completed measures of skewness and kurtosis for each variable to ensure they were as close to 1 or -1 as possible which is a normal skew as symmetry may be substantial if skewness is greater than 1 or -1 (see Schurz, 2001). The LAPS Attachment scores were negatively skewed, (skewness of -1.203, kurtosis 1.618), I attempted both a log 10 and square root transformation with no significant improvement in normalcy so continued with original data. The MLQ (Presence) scores were positively skewed (skewness 1.286, kurtosis 3.857), I attempted both a log 10 and square root transformation with no significant improvement in normalcy so continued with original data. The UCLA Loneliness Scale Revised 2 scores were negatively skewed (skewness -.534, kurtosis of .543), I attempted both a log 10 and square root transformation with no significant improvement in normalcy so continued with original data. With a large sample size, the linear regression is quite robust against violations of normality but may produce high T and F values. (Statistics Solutions, n.d.) approximate normality exists in a sample size over 50. My sample size was = 169. The statistics indicated that the data is

adequately robust, that this should not have been a concern, nor should it have affected the outcome.

Homoscedasticity is discussed as having the same homogeneity of variance or the same scatter (Glen, 2021). In preparation for analysis I reviewed the data for homoscedasticity assessing for the assumption of homogeneity of variance with Levene's test and found that loneliness F (1, 142) = 3.75, p = .056 was not significant, LAPS attachment F(1, 165) = .068, p = .80 was not significant, and meaning in life (presence) F(1, 165) = .097, p = .76 was not significant, but all three met the assumption of homogeneity of variance.

In addition, due to the variables MLQ (Presence), loneliness, and LAPS attachment all presenting with .991 -1.000 for VIF and .999 – 1.009 for tolerance, the assumption of collinearity was met. According to O'Brien (2007), a VIF between 4 and 10 (equivalent to a tolerance level of 0.10 or 0.25) can be used to identify serious multicollinearity.

Description of Data for the Lexington Attachment to Pets Scale

I used the LAPS (Johnson, et al., 1992) to measure individuals' attachment to their pet birds. For the LAPS, the scores ranged from 18 to 69 (M = 56.94, SD = 9.21). The scores for the MLQ-P ranged from 4 to 29 (M = 12.51, SD = 3.66). The UCLA Loneliness Scale Revised 3 scores ranged from 39-62 (M = 53.64, SD = 4.35).

I administered a priming question prior to the administration of the assessments. For the priming question, individuals were assigned randomly by Survey Monkey's 50%

block algorithm to either provide information "in statements of 50 words or less what made them feel attached to their bird" or "in statements of 50 words or less what made them feel detached from their bird." These were treated as the experimental and control groups and assigned as Group1-more attached or Group 2-less attached, respectively. I made no modifications to the data to account for outliers, as SPSS was able to account for outliers in the statistical analysis.

Scoring of the UCLA Loneliness Scale Revised 3, the MLQ-P, and the LAPS was the next step in the process. Any reverse items would have been statistically reverse-scored had they not been reverse-weighted in the original survey process. I summed the items according to the scoring rules for the individual scales.

Response Rate for Attachment Manipulation

Of 169 respondents, nine (5.3%) of respondents did not answer Question 1, the experimental question. This could attest to the number of individuals interested in expressing feelings about their pet bird, interest in responding to a short answer question, interest in the survey itself, disinterest in the psychological portion of the assessment, or a variety of reasons.

Hypotheses Testing

RQ1: Is less loneliness associated with greater attachment to a pet bird (statistically controlling for the attachment manipulation)?

H_a1: Decreased loneliness is associated with greater attachment to a pet bird (statistically controlling for the attachment manipulation).

$H_0$1: Loneliness is not associated with attachment to a pet bird (statistically controlling for the attachment manipulation).

RQ2: Is having greater meaning in life associated with greater attachment to a pet bird (statistically controlling for the attachment manipulation)?

H_a2: Greater perceived meaning in life is associated with greater attachment to a pet bird (statistically controlling for the attachment manipulation).

$H_0$2: Perceived meaning in life is not associated with attachment to a pet bird (statistically controlling for the attachment manipulation).

RQ3: Does the level of attachment to a pet bird influence a person's feelings of loneliness?

H_a3: Loneliness is influenced by the level of attachment to a pet bird.

$H_0$3: Loneliness is not influenced by the level of attachment to a pet bird.

RQ4: Does the level of attachment to a pet bird influence a person's perceived meaning in life?

H_a4: Perceived meaning in life is influenced by the level of attachment to a pet bird.

$H_0$4: Perceived meaning in life is not influenced by the level of attachment to a pet bird.

To test hypotheses 1 and 2, I used SPSS to analyze the survey data through two multilinear regressions. I evaluated the first multilinear regression through SPSS by comparing the means for attachment and loneliness as determined by their respective

scales. I evaluated the second multilinear regression through SPSS to evaluate the relationship between the means for attachment and the means for ML-P as determined by their respective scales.

Procedure and Results of Testing RQ1

The first multilinear regression results were significant, indicating that greater attachment to a pet bird did predict a movement or correlation aligned with loneliness however it did not predict a decrease in loneliness as stated in H_a1, which was not significant. The multilinear regression was calculated to predict loneliness based on attachment to a pet bird statistically controlling for being more or less attached to the pet bird they feel closest to in the attachment manipulation exercise. A significant regression equation was found for (F [1,142] = 5.77, p = .018 with and R^2 of .04. According to the model attachment accounts for 3.9% of the variance in loneliness.

The positive correlation of r = .198 showing participants' loneliness scores increased as their LAPS attachment scores increased, for every unit where loneliness increased by 48.65, LAPS attachment increased by 1 unit.

I ran the multilinear regression through SPSS for H_a1, which shows the significance between loneliness and attachment with p = .018, which gives a high probability to refute H_a1 and accept the H_01while acknowledging the existence of the correlation between the variables. Therefore, I accepted the H_01 that loneliness is not associated with greater LAPS attachment to a pet bird (statistically controlling for the attachment manipulation).

Procedure and Results of Testing for RQ2

After running the multilinear regression for Research H_a2, the meaning in life (presence) results did not reach significance. Specifically, that greater LAPS attachment to a pet bird did not successfully predict the increase of meaning in life (presence) (F [1,165] = .007, p = .932), with an R^2 = .000. Neither independent variable, 1- more attached, nor 2 – less attached, were significant indicators of the dependent variable. Therefore, I refuted H_a2 and failed to refute the $H_0 2$. The model explains 0% of the variance in the meaning in life (presence) scores.

Procedure and Results of Testing for RQ3

For testing Research H_a3, I completed a two-tailed *t* test through SPSS to assess if loneliness was influenced by the individual's perception of feeling more or less attachment to a pet bird between my two-attachment manipulation priming groups. I completed an independent sample *t* test using SPSS to assess if there is a statistically significant difference between loneliness and higher or lower perceived attachment to a pet bird following the manipulation.

I used SPSS to run an independent samples *t* test to see if there is a statistically significant difference in the mean levels of loneliness for people who were assigned to respond with what made them feel more attached to their pet bird (group 1) or what made them feel less attached to their pet bird (group 2) in the attachment priming manipulation prior to completing the main assessments of the survey. The mean loneliness level for perceived feelings of the more attached group is numerically higher than that of

perceived feelings of the less attached group. The results of the independent samples *t* test showed that the mean loneliness level of those who were in the perceived feelings of more attached group ($M = 54.03$, $SD = 3.76$, $n = 70$) and those who were in the perceived feelings of less attached group ($M = 53.27$, $SD = 4.84$, $n = 74$) were not statistically significantly different ($t\,[142] = 1.046$, $p = .149$). Thus, those in the perceived feelings of more attached group and those in the perceived feelings of less attached group did not express a significant difference in the amount of loneliness reported on the UCLA Revised 3 and therefore the priming experiment failed to make a significant difference. Therefore, I refute the H_a3, which suggested a significant decrease in the mean amount of loneliness among those with perceived feelings of more attachment to a pet bird and accept the $H_0 3$.

Procedure and Results of Testing for RQ4

For testing Research H_a4, I completed a two-tailed *t* test using SPSS to assess if an individual's perceived feeling of more or less attachment to a pet bird influenced MLQ-P between our two-attachment manipulation priming groups. The *t* test assessed for a statistically significant difference between mean levels of meaning in life (presence) for people who were assigned to respond with what made them feel more attachment to their pet bird (group 1) or what made them feel less attachment to their pet bird (group 2) in the attachment priming manipulation, completed prior, to completing the main assessments of the survey. The mean results for the two test groups by meaning in life (presence) are more attached ($n = 81$, $M = 12.74$, $SD = 3.635$) and less attached ($n = 86$,

M = 12.29, SD = 3.687). The results of the independent samples t test showed that there was not a statistically significant difference (t[165] = .794, p = .214) in the mean amount of MLQ-P between the two groups. As a result, I refute H_a4 which states that perceived meaning in life is influenced by the level of perceived feelings of more or less attachment to a pet bird and accept the H_04.

Procedure and ANCOVA Results for Covariate Testing

Finally, I completed a one-way ANCOVA to assess for covariates between the results of the LAPS, MLQ-P, UCLA Loneliness Revision 3, controlling for the covariate the Priming Attachment Manipulation. Also, to see if the priming attachment manipulation impacted the results of the survey assessments based on which group, they were assigned to. There is not a significant different of LAPS attachment on loneliness after controlling for the perceived attachment manipulation (feeling more or less attached to a pet bird) F(1,144) = 1.277, p > .25. Additionally, there is also not a significant difference in attachment on perceived MLQ-P after controlling for the perceived attachment manipulation F(1, 144) = .915, p >.25. Therefore, there are no statistically significant differences between covariates in this study.

Procedure and *t*-Test Results for Attachment Manipulation

Lastly, I completed an independent samples t test to evaluate the strength of the attachment manipulation. The independent samples t test appropriately measured the difference between means for the LAPS attachment measure for the attachment manipulation groups, which did not display a significant difference between more

attached (M = 52.36 ±8.99 units) versus less attached (M = 50.40 ± 8.98) ($t(127) = 1.238$, $p = .218$) with a difference of 1.96 (95% CI 1.172 – 5.09) . As a result, the manipulation could have been stronger, which I will discuss in the next chapter.

Summary

As presented above, I collected data to investigate whether I was able to support the four hypotheses regarding the impact of human attachment to a pet bird on psychological well-being. I reviewed the data collection process, the scales used, the statistics collected, and the analysis. The outcomes resulted in refuting the research hypotheses but detecting the positive correlation between loneliness and attachment to a pet bird. For every unit attachment increases, loneliness increases by 48.65 units. I also refuted the other research hypotheses and accepted the null hypotheses for hypotheses two, three, and four. I ran an ANCOVA to assess covariates between results of the LAPS, loneliness, and meaning in life (presence), and none were found. Now I will continue to Chapter 5 and discuss what the outcomes of the statistics mean, what could have been done differently that may have improved the study, what this research means for future studies and additional information regarding this study.

Chapter 5: Discussions, Conclusions, and Recommendations

I conducted this experimental quantitative study to evaluate the impact of a pet bird on the psychological well-being of individuals who had a pet bird through the examination of relationships between attachment, meaning in life, and loneliness. This study was to compare results of respondents on three different self-report measures the LAPS, UCLA Loneliness Scale Revision 3, and the MLQ-P, and an experimental question in addition to gathering some demographic information on people who have birds. Traits commonly found were that owners may have been in their middle years, had a bachelor's degree + more or less education, may have been married or in a domestic partnership, may have had one or two children, other pets, and other birds in their home. While there were additional variances to these demographic factors and a large number of surveys were incomplete, these did hold similarities between the experimental groups. I will discuss the interpretation of the research questions further below.

Interpretation of Findings

As I discussed in Chapter 2, limited research exists regarding people and their pet birds. A significant amount of it has been anecdotal or anthropomorphic. Historically, a few articles existed that did show that birds had been beneficial companions to older populations in nursing homes, such as Mugford and M'Comisky's (1975) bird, budgerigar, and begonia experiment, which showed improvement in the completion of surveys regarding participants views on their mental health and their feelings towards others) in the bird group with and without television. This is similar to my results in that

the attachment relation which predicted reduced loneliness, as discussed below in the results of the hypotheses.

In opposition to other research, I found no significance for the research questions. For RQ1, I found that greater attachment to a pet bird did not successfully predict a reduction in loneliness, but I did find a positive correlation between loneliness and attachment to a pet bird. These findings indicate that people who are lonely may have a pet bird due to their loneliness or have continued loneliness even with the pet bird. I found no significance in RQ2 as attachment to a pet bird did not predict an increase in the presence of meaning in life. Similarly, for RQ3, I did not find significance between the experimental groups. There was not a significant difference in levels of loneliness between the individuals who were manipulated to be more attached or less attached term to their pet birds. For RQ4, I did not find significance between the experimental groups; there was not a significant difference in levels of presence of meaning in life between the individuals who were manipulated to be more attached or less attached to their pet birds.

Possible reasons for the lack of significance were that there might not have been a powerful enough manipulation to discriminate between the more attached group and the less attached group of individuals completing the experimental portion, as evidenced by a *t* test measuring the difference between means for the LAPS attachment measure which did not display a significant difference more attached $t(80) = 58.05$, $p = < .001$ versus less attached $t(85) = 57.16$, $p = < .001$. Also, I collected a medium-sized sample for this study; a larger sample of fully completed surveys may have been beneficial. There is

always a possibility that a Type II error may have occurred. This survey did not account for gender, age, or other cultural differences, which may also have had an impact on its significance. The order and organization of the assessments used in the measure may have allowed the individuals to lose interest before approaching the measure specifically aimed at a pet bird and before completing the sections measuring loneliness and meaning in life. As a result, there are many areas where significance may be lacking in this study and several opportunities for expanding this study for future research and exploration.

Limitations of the Study

Limitations of the study include that it was only in an online survey format and written in English. Its distribution was only through Facebook groups, one avian clinic, and four bird stores in a limited area during the height of the COVID outbreak. The distribution included only bird owners but did not have a survey instrument specific to birds, and the instrument specific to animal attachment was located last after two other surveys plus demographic questions and several individuals had discontinued before this point. Another limitation was individuals' interpretation of the language in the advertisement regarding the age of the bird for participation versus the age of the participant to complete the survey. Also, I left one question out of the survey, unintentionally, on UCLA Loneliness Measure 3. As a result, there may be one to four more points positively in favor of each loneliness scale score ratio, and the scoring may be inaccurate and artificially inflated as a result.

Implications for Future Research

One recommendation is that future researchers include all survey questions on the scales used in the study. Another option would be to include the LAPS earlier in the battery of scales. Shortening the battery of scales to lose fewer candidates before the administration of the LAPS survey would be beneficial. Also, another option would be to include or develop a scale specifically measuring the attachment to birds instead of a survey directed toward pet owners or people who have pets. With the LAPS assessment being oriented towards pets in general they may have responded to attachment they felt toward other pets, not specifically birds. I could further culturally diversify this study by using more languages and reaching out to more diverse populations through recruitment through larger pet store chains, including better advertising or additional incentives for individuals or agencies to participate. In this study, I tested the impact of human attachment to a pet bird on psychological well-being by focusing on loneliness and meaning in life through an internet study and online surveys. There is room for exploration into attachment to a pet bird and the search for meaning in life; this was part of the testing, and there was significance even though this was not part of the original study. This might give further information on what individuals were searching for when they acquired their birds, if the birds related to the search for meaning in their lives, and if they knew they were searching for meaning in their lives prior to acquiring a bird. It might also give more information into relationships between search for meaning and decreases or increases in loneliness. Whether individuals were searching or just presented

with having meaning in life. Or if acquiring the bird gave them a new search for meaning in life through the investigation of becoming a bird owner.

The study did show statistical significance in the relationship between attachment and loneliness, but not between loneliness and meaning in life (presence). The demographic measures of the number of birds and people in the home, the positive and negative attachment feedback provided by those surveyed, and the population who have birds, as well as information on meaning in life (search), show there are areas for further exploration and research in this area. For example, there was little to no information showing a contrast between attachment to smaller birds versus larger birds as companions, or if size matters, which can impact care, personality, cost of living, and comfort of interactions with your feathered companion. There is room for the development of an avian- or bird-specific attachment measure that is not based on anecdotal or anthropomorphic information; currently, existing measures generalize to pets or specific four-legged breeds. There is room for further exploration into the area of birds and the search for meaning in life, as this area did inadvertently reflect significant results, though I developed no hypothesis for it in the initial planning of this study. Positive weighted responses in the search portion of the MLQ could relate to acquiring social connections, individual meaning in life, a lifetime of learning, entertainment, and an opportunity to teach others by acquiring a pet bird as a companion. Finally, there is room for exploration regarding the use of birds not only with patients in both community

therapy sessions and inpatient treatment settings as pets but also in clinical research settings.

While Burmeister, et al. (2020) completed a study generating the Owner-Bird Relationship Scale (OBRS), the dimensions of their most important findings were in the areas of Dimension 1: anthropomorphism, Dimension 2: social support, and Dimension 3: empathy, attentiveness, and respect. They also discuss Dimension 4: the owner's perspective on bird behavior as measured by gratuitousness, autonomy, and reciprocity, which is beyond the scope of their research. The fourth strongest factor was the bird's desire for proximity to the owner. The OBRS has not been used in studies related to meaning in life or levels of loneliness, which hold potential for future areas of interest regarding pet birds.

One could complete a qualitative study to find out if working with birds, rescuing birds, or rehoming birds was the most salient preference for bird owners. One could also complete a qualitative study to find out if rehoming birds, adopting out, or selling birds was a more salient preference for bird owners if they were unable to keep their feathered pets. Another option is to conduct a qualitative study to determine whether they would get another pet bird, what breed it would be, the method and length of their grief, the types of support they received, and how they depicted their grief. These studies would be beneficial because, as expressed by the online bird communities where the data was collected, people care about their birds as well as other birds in society, and frequently, even after their companion bird has passed away, they continue to remain involved in

bird groups on social media, supporting other individuals, educating others, and giving advice to new and future bird owners and enthusiasts.

Implications for Social Change

There is a great deal of data in the priming experiment regarding people's responses about the birds they have and why they feel attached to or do not feel attached to these birds. These areas can be used as educational measures for new bird owners, individuals, and agencies that work with birds, rescue birds, and rehome birds.

Implications for social changes open a spectrum of possibilities for the inclusion of birds in society as companion animals. On an individual basis, pet birds can exist in the household as animal companions or emotional support animals. Some examples of service animals include completing tasks as part of routines appropriate to their size and behaviors, such as retrieving objects and turning lights off and on. Birds may be trained to retrieve objects in private living environments for those with limited mobility. These can be found in examples from the priming experiment responses as well as research publications. Birds can present as a replacement, or found, family member or fill a void in an environment.

As implications for the therapy office, these birds in assorted sizes may be kept as companions in individual offices or as calming displays in the lobby. If therapists found people who were lonely, then encouraging an individual to get a bird as a companion might be helpful. An area for future study could be to provide individuals scoring high in the area of loneliness with a bird as a companion to see if this avian companion reduces

their loneliness. A bird in a cage in an office, for example, could provide a pleasant sound or a more soothing environment. Birds can be used to demonstrate how and where to identify good and bad physical touch, as well as to provide examples of warning signals.

In institutions, allowing individuals to spend time with birds during group sessions encouraged attendance at groups as well as a more positive attitude about attending group sessions. Placing birds in the rooms of individuals who were able to care for them brought them more independence and responsibility and served as a conversation starter to share with other colleagues (Gardiánová and Hejrová, 2015; Jessen, et al, 1996; Loughlin and Dowrick, 1993). Placing birds in an aviary or cage in community areas can provide soothing background sounds. Birds can also be examples of animals making displays or expressions of emotions and feelings. When interacting with individuals in groups, classroom settings, and symposium or presentation settings, a bird can teach them about setting boundaries and safety. A social change concept of whether bird ownership fosters the desire to share knowledge and educate others.

Conclusion

The results of this study show that attachment to birds as companion animals did not reduce loneliness, which was the opposite of what was projected in my first hypothesis. But the results did show a positive correlational relationship between attachment and loneliness. Indicating that some people with loneliness may have birds as pets. The results from this study did not show that attachment to birds as pets increased MLQ-P which was the opposite of what was projected in my second hypothesis. While

MLQ-P did not show significance, the MLQ-S portion did which was not part of the hypothesis and research questions, and maybe an avenue for future research in relation to attachment to a pet bird. The experimental manipulation of the first question presented did not have an impact to diversify between groups in either the areas of loneliness or MLQ-P as projected in the third and four hypotheses and displayed by the single sample *t* test for strength of the experimental manipulation. As a result, there were some interesting findings and there remain many avenues for future research into the impact of pet birds on psychological wellbeing. The possible impact on society and psychological practice were discussed.

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Appendix A: Recruitment Flyer

Purpose of the Study:

I am studying how humans feel about their life with their pet birds

Seeking anyone who has a bird!

Can use the computer/internet, any gender, age 18 & older, to complete a brief, anonymous online survey

The study will consist of:

- Completion of some demographic questions
- One short answer essay response of what makes you feel close or not close to your bird
- And some survey questions about your life and your pet bird

Study details:

- The survey should take between 10-15 minutes to complete
- You can skip questions or choose to discontinue the survey at any time.

Please follow the link below to participate:

If you are not able to follow the link,

please copy and paste into the URL bar of your browser to access the survey.

If you have any questions, please feel free to contact me at:

Appendix B: Demographic Survey

1. What is your age?

- 18-24 years old
- 25-34 years old
- 35-44 years old
- 45-54 years old
- 55-64 years old
- 65-74 years old
- 75 years or older

2. What is the highest degree or level of school you have completed? If currently enrolled, the highest degree received.

- Some high school, no diploma
- High school graduate diploma or GED
- Some college credit, no degree
- Bachelor's degree
- Master's degree
- Doctorate degree

3. What is your marital status?

- Single, never married.
- Married or domestic partnership
- Widowed
- Divorced
- Separated

4. How many children live in the home?

- 0
- 1
- 2
- 3-4
- 5+

5. How many other pets do you have?

- ◉ 0
- ◉ 1
- ◉ 2
- ◉ 3-4
- ◉ 5+

6. What kind(s) of other pet(s) does your family have?

- ☐ Cat
- ☐ Dog
- ☐ Bird
- ☐ Snake
- ☐ Rabbit
- ☐ Hamster
- ☐ Chicken
- ☐ Lizard
- ☐ Iguana
- ☐ Gecko
- ☐ Pig
- ☐ Guinea Pig
- ☐ Horse
- ☐ Goat

7. If you have additional birds in the home, how many total birds do you have?

- ◉ 1
- ◉ 2-3
- ◉ 4-5
- ◉ 6-7
- ◉ 8+

Appendix C: Debriefing statement

DEBRIEFING STATEMENT

The Impact of Attachment to a Pet Bird on Psychological Well-Being

Kathryn Trautmann, M.Ed.

Walden University

School of Psychology

You recently participated in a research study of how humans feel about their life and their pet birds. In the previous exercise/survey, you were requested to complete some demographic questions, one short answer essay response of what makes you feel close or not close to your bird, and some survey questions about your life and your pet bird. The purpose of this debriefing statement is to inform you that the true nature of the study or an aspect of the study was not previously disclosed to you.

Background Information: The purpose of this study is to look at peoples' experiences with their pet birds and impact on their loneliness and perceived meaning in life. It is hypothesized that greater attachment to a pet bird increases perceived meaning in life and decreases loneliness.

Confidentiality: The records of this study will be kept private. In any sort of report, we might publish, we will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only researcher will have access to the records.

Contacts and Questions: The researcher conducting this study are Kathryn Trautmann, M. Ed. You may ask any questions you have now. If you have questions later, you are encouraged to contact them at. You may also receive a summary of the findings by contacting Kathryn Trautmann at

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), you are encouraged to contact the Institutional Review Board,

Appendix D: Permission to Use Instruments - ULCA Loneliness Version 3

Dear Sir

I am a doctoral student from Walden University writing my dissertation titled The Impact of Attachment in a Pet Bird on Psychological Well-Being, under the direction of my dissertation committee chaired by Dr. who can be reached at

I would like your permission to use the Ulcaing to Life Questionnaire: Revised Scale instrument in my research study.

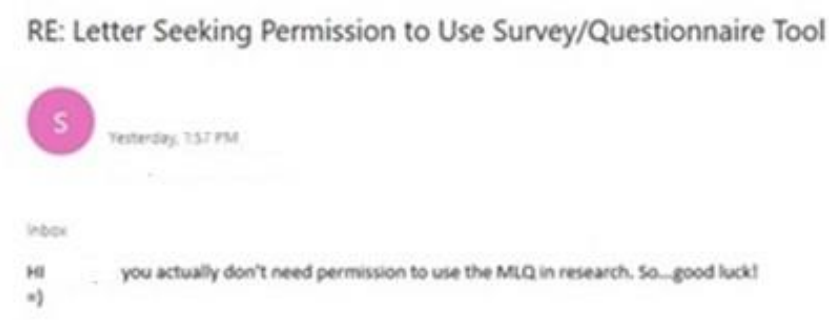
I would like to use your survey electronically under the following conditions:

- I will use the survey only for my research study and will not sell or use it with any compensated or curriculum development activities.
- I will include the copyright statement on all copies of the instrument.
- I will send a copy of my completed research study to your attention upon completion of the study.

If these are acceptable terms and conditions, please indicate so by replying to me through e-mail. I

Sincerely,

Doctoral Candidate



RE: Letter Seeking Permission to Use Survey/Questionnaire Tool

S

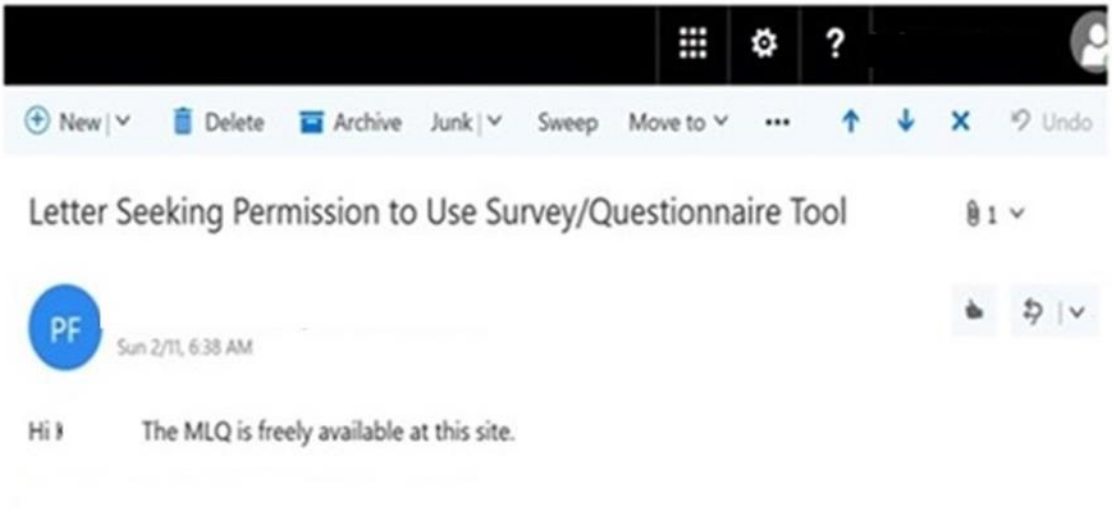
Yesterday, 7:57 PM

Inbox

Hi you actually don't need permission to use the MLQ in research. So...good luck!
=)

Appendix E: Permission to Use Instruments – Meaning in life Questionnaire – Presence (MLQ-P)

Letter Seeking Permission to Use Survey Questionnaire Tool



Appendix F: Permission to Use Instruments – Lexington Attachment to Pets Scale (LAPS)

KT

Reply all

Dear

I need to make an additional change in how the instructions read for this assessment, do I have your permission to make the additional minor changes to the wording. The instruction would read as "If you have more than one pet bird, please answer the questions for the bird that you previously wrote about." referencing another question about attachment earlier in the study material.
If this is acceptable, please respond.

Thank you.

JP

Today, 2:01 AM

Sure. That is fine.

Sent from my iPhone - Please reply to