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I am submitting herewith a dissertation written by Lee Ann Peabody Taggart entitled "Relationships Among Affiliation with Companion Animals, Attachment Style, Depression, Loneliness, Satisfaction with Life, and Self-esteem: Implications for Human Candidate Selection for Adjunctive Use of Companion Animals." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

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RELATIONSHIPS AMONG AFFILIATION WITH COMPANION ANIMALS, ATTACHMENT STYLE, DEPRESSION, LONELINESS, SATISFACTION WITH LIFE, AND SELF-ESTEEM: IMPLICATIONS FOR HUMAN CANDIDATE SELECTION FOR ADJUNCTIVE USE OF COMPANION ANIMALS

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee

Lee Ann Peabody Taggart

August, 1996

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DEDICATION

My "John Henry" for my best friend, MAT

This dissertation is dedicated to my families of birth and of marriage whose members all cherish camaraderie with companion animals, especially my parents who modeled profound respect, appreciation, and love for animals. This dissertation is also dedicated to my beloved godmother Dolores Ocel, and to the memory of a special friend Loyce Houlton, founder and artistic director of the Minnesota Dance Theatre. And, finally, this work is dedicated to the Perfessors, Melodies, 'Seedies, Ollers, Big Boys, Phils, Puppets, Lucys, Opies, Milos, Fridays, Steiners, Gonzos, Jesses, Babas, and Snooks who have blessed all of us with their precious gifts of unconditional love, faithfulness, and friendship.

Tack så mycket.

ACKNOWLEDGMENTS

I would like to thank the members of my committee, Kathleen A. Lawler, Ph.D., chair, John W. Lounsbury, Ph.D., John New, Jr., D.V.M., and Wesley G. Morgan, Ph.D., for their encouragement and assistance during the preparation of this dissertation, especially in the area of research design. In addition, I would like to thank Dr. Lawler for her extensive assistance with editing, statistical analysis, and manuscript organization, and Dr. New for generously sharing his time, expertise, and reference materials collection for the purpose of teaching me about the field of animal-assisted therapy.

I would like to express appreciation to the following individuals who gave me permission to use their scales: Aaron T. Beck, M.D., University of Pennsylvania Medical School; Kim Bartholomew, Ph.D., Simon Fraser University, British Columbia, Canada; Letitia Anne Peplau, Ph.D., University of California at Los Angeles; Ed Diener, Ph.D., University of Illinois, Champaign-Urbana, and Walter W. Hudson, Walmyr Publishing Company, Tempe, Arizona.

I am grateful to Linda Allred, Ph.D., and Philip Spelt, Ph.D., who provided invaluable assistance with research and statistical design, and maintenance of mental hygiene. S. Katharine Presty, Ph.D., and Stephen Tuel, M.D., were immensely helpful with data analysis. Minnie Savage, M.A., was my first mentor in the field of psychology. Way back when she encouraged me to go to graduate school to pursue a doctorate. Carolyn Spelt, Maxine McSwords, Carol Marshall, Laura Skinner, Ph.D., and Susan McCammon, Ph.D., were tremendously supportive advocates. And to Michael O. Buckner, Ph.D., I remain beholden.

Abstract

This study examined relationships among affiliation with companion animals, attachment style, depression, loneliness, satisfaction with life, self-esteem, history of pet ownership, and gender. Using questionnaires, data were collected from 351 undergraduate students (215 women, 135 men, one not identified) enrolled in liberal arts classes at the University of Tennessee. Based upon Bowlby's concept of internal working models of "self" and "other" (1973), Bartholomew's (1990) paradigm of adult attachment hypothesizes four styles: a) secure (positive models of both self and other); b) dismissing (positive view of self, negative view of others); c) fearful (negative models of both self and other), and d) preoccupied (negative image of self, positive image of others). Using ANOVA's, both the secure (45% of subjects) and dismissing (16% of subjects) categories had mean group scores that were significantly less "distressed" than both the fearful (29% of subjects) and preoccupied (10% of subjects) categories on measures of depression, loneliness, satisfaction with life, and self-esteem. Although there was no relationship between attachment style and likelihood of owning a pet, for the fearful category pet ownership was associated with significantly less distress in the areas of depression ($p < .01$) and satisfaction with life ($p < .05$). (On the other hand, pet ownership was associated with a significantly higher level of depression for the preoccupied group.) These findings support earlier research that suggested strength of affiliation with companion animals may be an important factor associated with emotional benefits of pet ownership, in that the fearful category had the highest level (significantly

higher than the dismissing and preoccupied groups) of affiliation with companion animals. Interaction and main effects were also observed when evaluating gender. Women were proportionately overrepresented within the fearful category, and men were overrepresented within the dismissing category. Except for the area of loneliness, where women endorsed significantly less distress than did men, gender differences were not in evidence on the emotional health measures. More women than would be statistically expected were present pet owners, and more men than would be expected were past owners. In addition, female pet owners had a significantly higher animal affiliation score than did both male pet owners, and female past owners. Implications of these findings for the application of adjunctive use of companion animals, as well as directions for future research, are discussed.

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CHAPTER 1

INTRODUCTION

That pets are "good for you" seems intuitively obvious to animal lovers. Dedicated enthusiasts have attempted to convince the medical establishment of the benefits of animal companionship, yet empirical data to support this theory have been scare (Culliton, 1987). Anecdotal reports, however, abound in the popular (and even professional) media. For example, the Minneapolis, MN Star Tribune (Shulins, August 14, 1994) printed an article entitled "Dogs can sense epileptic seizures." It stated, "in the world of epilepsy, a world of waking nightmares and broken bones, dark depression and deep despair, deliverance sometimes comes on four legs, with hot breath and a cold nose."

Ninety-eight percent of a sample of pet owners asserted they considered their animals to be family members (Cain, 1985). In a survey of senior citizens who lived with companion animals, over 90% stated that owning a pet added to their happiness and that they considered their pet a friend with whom they regularly talked (Stallones, Marx, Garrity, & Johnson, 1988). In addition, almost 90% of the respondents claimed their pet knew how they felt. In a study of adults ranging in age from 21 to 64 years of age, 60.7% stated that owning a pet had helped improve their physical health (Stallones, Johnson, Garrity, & Marx, 1990).

Although theoretical in basis, Katcher and Friedman (1982) summarized the major assumptions of why animals are good for people:

There is abundant evidence to suggest that the companionship provided

> by pets has the capacity to both reduce the frequency of serious disease and prolong life...If a pet can provide companionship, it should be able to decrease the pathological effects of social isolation...There is direct evidence that the actions and feelings involved in caring for another person or thing have positive health benefits...It may be that caring for another facilitates a pattern of psychoendocrine organization which results in greater resistance to disease...Touch can act as an antianxiety agent and can decrease the probability of a progression of conditions (e.g., hypertension, stroke, coronary artery disease, and diabetes) which are worsened by the presence of consistent emotional arousal...The presence of an animal, especially an animal that makes demands on the owner, provides a stimulus for maintaining a daily routine...Any factor which decreases fear and depression is likely to have direct, beneficial psychological and physiological effects on health (italics in original).

The first recorded use of animals in a therapeutic role was at the York Retreat in England, founded in 1792 by William Tuke (McCulloch, 1986). The use of punishment and restraints in the "lunatic asylums" of the time was considered inhumane by Tuke. He chose to treat psychiatric patients with positive reinforcement for self-control. Residents at the York Retreat wore their own clothes, worked in gardens, were encouraged to do handiwork, to read and write books, and to care for animals such as rabbits and poultry.

The first recorded use of animal-assisted activities in the United States was at the Pawling Army Air Force Convalescent Hospital in Pawling, New York in 1942. On the premises was a working farm with poultry, livestock, and

horses. Veterans recovering from physical or emotional war-associated trauma were encouraged to be actively involved with the animals during the course of their farm work.

The pioneer of animal-assisted therapy was psychologist Boris M. Levinson. He first published on the subject in 1962 but his seminal book, Pet-oriented Child Psychotherapy, was published in 1969. Levinson was trained in psychoanalysis. He was interested in the symbolic qualities of animals and used this symbolism in the working through of issues related to emotional conflict. Levinson (1984b) identified four primary therapeutic functions of animals assistants: 1) as a therapeutic adjunct, 2) as sole therapist, 3) as catalysts, and 4) as a means of making contact with nature.

The Delta Society, based in Washington state, is a non-profit organization that as an institution is a leading authority in the international arena of human-animal interactions. In 1991, the Delta Society's Definitions Development Task Force attempted to codify terminology used in reference to animal-assisted therapies. The field was divided into three areas: 1) animal-assisted activities, 2) animal-assisted therapy, and 3) human-animal support services. The word "animal" was used instead of "pet" as it better accounted for the variety of animals often employed. The term "assisted" was felt to indicate greater participation on the part of the animals than "facilitated."

In 1993, the Delta Society proposed the adoption of terminology that would be consistent with language used, in reference to service animals, for the Americans with Disabilities Act. The ADA defines a "service animal" as "any guide dog, signal dog, or other animal individually trained to do work or perform

tasks for the benefit of an individual with a disability, including, but not limited to, guiding individuals with impaired vision, alerting individuals with impaired hearing to intruders or sounds, providing minimal protection or rescue work, pulling a wheelchair, or fetching dropped items." The Delta Society identified "guide dogs" as those animals assisting people with vision impairments, "signal dogs" as those animals assisting citizens with hearing impairments, and "assistance dogs" as those animals helping individuals with physical disabilities or impaired mobility. Under the Americans with Disabilities Act, service animals are considered to be working animals. This distinction allows these animals access to public places such as restaurants, libraries, hotels, and public transportation.

Animals have been employed in a wide variety of therapeutic settings. As summarized by Arkow (1986), these settings include:

I. Long-term care
   a. Nursing homes, convalescent centers, and other residential treatment facilities, primarily for the elderly
   b. Community-based day programs
   c. Hospitals
   d. Hospices

II. Physically-challenged
   a. Equestrian therapy/hippotherapy
   b. Wheelchair-confined: service animals
   c. Visually- and hearing-impaired

III. Psychotherapy
   a. Individual level
   b. Within the context of family therapy

IV. Rehabilitation Centers
   a. Emotionally disturbed
   b. Alcohol and drug treatment
   c. Juvenile delinquent deterrence
   d. Mental retardation

V. Correctional Institutions
    a. Prisons
    b. Criminally insane

The journal Anthrozoos (published by the Delta Society), the magazine InterActions (also published by the Delta Society), and The Latham Letter (published by The Latham Foundation) are dedicated to the exploration of human-animal interactions.

The Kal Kan report (The Kal Kan Company, 1986) revealed that 57% of psychiatrists, 48% of psychologists, and 40% of family practice physicians consulted reported that they had prescribed animals for companionship and to relieve loneliness and depression. Some of these practitioners also felt that animal companions could provide unconditional affection and warmth, a focus or perspective, entertainment, and a feeling of being needed.

Anderson and Riger (1991) stated, "if depression is the common cold of mental health, then loneliness is the headache." Houpt and Wolski (1982) commented that more middle-aged adults are finding themselves alone as divorce rates continue to rise and they posited that the presence of an animal could alleviate some of the depression experienced by lonely people. Several of the leading advocates of animal-assisted therapy have asserted the belief that pets can alleviate loneliness (and other negative emotional states), including Katcher (1981), Lynch (1977), Bustad (1980), Levinson (1969), and McCulloch (1981). This theme is echoed by Robb (1983) who suggested that, "association with animals may alter the individual's subjective perception of morale in such a way that regardless of objective indicators such as health impairments, low income,

or advancing age, the individual still labels himself as tranquil, not lonely, confident, and so forth."

Two studies (both using the Revised UCLA Loneliness Scale) have studied the question of whether pet owners perceive themselves as less lonely than nonowners. Willie (1985) found no difference in level of loneliness between pet owners and nonowners living in a retirement village. She suggested, however, that these findings may have been influenced by the fact that these individuals lived in a close-knit community offering many social activities. Ninety-two percent of all respondents, however, believed pet ownership was beneficial to health. The majority of nonowners stated they did not have a pet as they wished to avoid bereavement associated with pet loss.

Zasloff and Kidd (1995) also examined the possible relationship between pet ownership and loneliness. Respondents (all single women attending a university) ranged in age from 21 to 53, with a mean age of 28.4 years. Data indicated that women living entirely alone were more lonely than those living with pets, with both pets and other people, and living just with other people. Zasloff and Kidd stated they were surprised to find no difference in level of loneliness between pet owners and non owners living with other people. They concluded, however, by suggesting that the acquisition of a pet could be beneficial for people living alone. They felt that their study was limited by the fact that they were not able to examine cause and effect relationships between pet ownership and loneliness.

There are two studies that are able to address the question of cause and effect in reference to beneficial effects of relationships with companion animals.

One study examined physical health and one depression, variables that are both associated with loneliness. James Serpell (Kale, 1992b) undertook a 10-month study that tracked changes in health status following the acquisition of a cat or dog. Compared with control-group subjects, new pet owners reported a significant decrease in minor health problems, noticeable within the first month following the addition of the animal. In addition, after six months, pet owners also reported improvements in overall psychological well-being. Reported gains were maintained for the entire 10-month study period for respondents owning dogs, but not cats.

Folse, Minder, Aycock, and Santana (1994) studied animal-assisted therapy (A-AT) in a psychotherapy clinic. Forty-four participants with significant scores on the Beck Depression Inventory (Beck, A. T., 1978) were assigned to one of three groups: 1) A-AT in conjunction with group psychotherapy (directive group), 2) A-AT only (nondirective group), and 3) control. Participants in the two treatment groups were asked to attend at least six of seven 45-minute weekly sessions. All subjects were readministered the Beck Depression Inventory at the conclusion of the seven week study period. The initial hypothesis of the study was that participants of both A-AT groups, but not the control group, would demonstrate decreased depression scores, with this decrease being greatest in the directive group. Using an ANOVA, with treatment as the independent variable, significant differences were in evidence among the groups ($F\ [2,41] = 3.69,\ p < .05$). Although depression scores did decrease for both treatment groups, the significant difference was found between the

nondirective group (A-AT alone), which had the lowest mean post-study depression score, and the control group.

The purpose of the present study was to examine the possible effects of animal companionship on depression, loneliness, satisfaction with life, and self-esteem. How attachment style (based upon the theories of Bowlby and Ainsworth), and the ability to form attachments with companion animals (including consideration of the strength of the bond), may affect these variables was also studied. The issue of whether attachment style may be related to the ability to affiliate with pets was also addressed. In addition, the issue of gender was evaluated as research has indicated there may be differences between men and women in terms of proportional representation within attachment categories, strength of affiliation with companion animals, and perceived levels of both loneliness (often negatively correlated with self-esteem) and depression (levels of which are possibly higher for people with a dependent-type of insecure attachment style, perhaps overrepresented among women). Chapter II provides an introduction to current theories regarding the phenomenon of loneliness, including an overview of commonly concurrent, negative emotional states. Chapter III presents the attachment theories of John Bowlby and Mary Salter Ainsworth, and includes discussions of attachment formation in infancy and throughout the life span. This section also addresses the possibility of transgenerational transmission of attachment style, and provides an introduction to attachment disorders and psychotherapeutic interventions. Chapter IV outlines the human-companion animal bond, and includes a discussion of possible detrimental and beneficial sequelae of animal companionship. The

purpose of the study is presented in Chapter V, and methods and procedures are presented in Chapter VI. Chapter VII outlines data analyses and, based upon the findings, addresses the original questions of the study. This is followed by the discussion in Chapter VIII which relates study results to previous research findings and hypotheses about the effectiveness of animal-assisted therapy, cautions in reference to generalization of these study results to other populations, implications of these study findings for the adjunctive use of companion animals, and suggested future directions for research.

CHAPTER II

LONELINESS

In his groundbreaking book, Loneliness: The Experience of Emotional and Social Isolation, Weiss (1973) announced that "loneliness is among the most common distresses." He said that severe loneliness occurred almost as often as colds during the winter season. To experience loneliness is indeed, in itself, a lonely phenomenon. Weiss stated that when people are not lonely, they have difficulty remembering what it feels like, emotionally, to be lonely. Lonely people are often encouraged to shrug it off and engage themselves in useful activity. They are even advised to "label it solitude and thereupon enjoy it." Upon hearing this advice, lonely people may resort to self-condemnation when they are not able to dispel their uncomfortable state. This behavior only tends to reinforce the loneliness.

Slater (1970) stated that loneliness may be perpetuated due to a "basic conflict between American values of competition, uninvolvement, and independence - and basic human needs for community, engagement, and dependence on others." In addition, the media (often through advertising) fosters unrealistic expectations about relationships.

How pervasive is loneliness? Children as young as three years of age have been observed to experience social isolation and loneliness (Rubin, 1982). In a national sample (Bradburn, 1969), 26% of adult respondents answered in the affirmative to the following question: "During the past few weeks, did you ever feel very lonely or remote from other people?" In addition, those who described

themselves as "very lonely or remote" were also likely to report they were "depressed or very unhappy." Among a psychiatric population, 80% of respondents claimed that loneliness was their primary motivation for seeking treatment (Rosenbaum & Rosenbaum, 1973). Revenson and Johnson (1984) found that loneliness decreased with age, with loneliness being reported least by respondents over the age of 65. Wood (1978), on the other hand, found loneliness to increase for adults between the ages of 18 and 54.

Several studies have indicated that loneliness is most prevalent among adolescents and young adults (Rubenstein & Shaver, 1982b; Ostrov, 1978; Brennan, 1982; Collier & Lawrence, 1951). Collier and Lawrence (1951) identified social loneliness in 65% of adolescents surveyed. In a large international study of adolescents between the ages of 12 and 16 (Ostrov, 1978), 22% of the boys and 20% of the girls endorsed the statement, "I am so very lonely." Loneliness appears to be less problematic for married people (Blai, 1989; DeJong-Gierveld & Raadschelden, 1982; Perlman, Gerron, & Spiunner, 1978). Although a few studies found that male respondents were more lonely than female respondents (Bikson & Goodchilds, 1978; Ouellet & Joshi, 1986), the majority of studies have found loneliness to be more prevalent for women (Blai, 1989; Ellison, 1978; Svanborg, 1979-1980; Wood, 1978; Clark & Anderson, 1980; Kivett, 1979; Hoferek & Sarnoroski, 1981; Brennan, 1982). Russell (1982) and Ostrov (1978) are among the few researchers who found no difference in reported degree of loneliness between men and women.

Peplau and Perlman (1982) identified eight primary theoretical orientations that have addressed the issue of loneliness. These include:

psychodynamic, phenomenological, existential, sociological, interactionist (based upon attachment theory), cognitive (attribution theory), privacy-based (i.e., self-disclosure concepts), and general systems (involving feedback mechanisms from the cellular to international levels). Peplau and Perlman stated that the interactionist, various cognitive, and perhaps social reinforcement approaches, "are apt to play a seminal role in guiding loneliness research."

In describing cognitive theories of loneliness, Peplau and Perlman (1982) stated this approach "emphasizes cognitive processes concerning peoples' perception and evaluation of their social relations." They stated that loneliness is a response to a discrepancy between "desired and achieved levels of social contact." In addition, cognitive process such as attributions have a moderating influence on the perception of loneliness. Lonely people tend to attribute interpersonal, but not noninterpersonal, failures to ability and trait factors (Anderson, Horowitz, & French, 1983). (This attributional style is also typical of people who are depressed, and may be a factor in the high correlations between loneliness and depression scores. This will be discussed in more detail below.)

Weiss (1989), who was strongly influenced by the attachment theory of Bowlby, stated, "my own taste and judgment tell me that the approach to the study of loneliness most likely to produce a large intellectual payoff is to try to learn more about the social linkages of attachment and social integration." He posited that there are two affective states usually perceived or labeled as loneliness, the loneliness of social isolation and the loneliness of emotional isolation (Weiss, 1973). Weiss (1974) felt that various types of relationships fulfilled different aspects of the interpersonal needs embedded within "social

provisions." He identified six social provisions: 1) attachment, 2) social integration, 3) opportunity for nurturance, 4) reassurance of worth, 5) consistent and reliable sense of alliance, and 6) guidance. He hypothesized that emotional loneliness would result from deficits in the area of attachment, and that social loneliness would result from a lack of social integration.

In addition to a perceived lack of social partners, feelings of being misunderstood by others may lead to the loneliness of social isolation (Rook, 1984). Weiss (1973) felt that social loneliness could be ameliorated by better access to, and utilization of, a social network. An effective social system may "buffer" people during times of stress (Rook, 1984). "Buffering" may: 1) increase motivation to deal with problematic issues, 2) alter an individual's cognitive perception of presenting problems, 3) have positive effects in the affective realm such as reduction of anxiety, and 4) provide additional resources (i.e., in the form of services or material aid) through the support network.

The loneliness of emotional isolation, on the other hand, "represents the subjective response to the absence not so much of a particular other but rather of a generalized attachment figure," and becomes possible only with the onset of adolescence (Weiss, 1973). This is the time when parents are relinquished as primary attachment figures. Emotional loneliness, therefore, as viewed by Weiss, "is a developmental extension of an infant's attachment to its parents" (Schultz & Moore, 1989). Weiss (1989) stated that an attachment figure is not necessarily an intimate or confidant, but a figure that represents a sense of safety through perceptual and emotional linkages. He said that the loneliness of emotional isolation (which typically first appears during adolescence) "can only

be remedied by the integration of another emotional attachment or the reintegration of the one that had been lost" (Weiss, 1973). Emotional loneliness may be "triggered" by feelings of separation distress similar to that experienced by young children (Weiss, 1989). What may complicate the issue for adults, however, is that this separation distress is sometimes "without an object" (Weiss, 1989). The lost attachment "object" may not be easily identified or replaced.

Perlman (1989) felt that Weiss's differentiation between the loneliness of social and emotional isolation "is clearly one of the most influential in the literature...One usually hopes a set of types are mutually exclusive and exhaustive. If social and emotional loneliness stem from different deficits, however, these categories may at times overlap. Indeed, I suspect the most severe cases of loneliness occur when people have both forms." Perlman did, however, add that there may be other types of loneliness. These include: chronic vs temporary, existential, and negative vs positive forms of aloneness. Perlman felt that any type of loneliness involved negative emotions and that this should be considered as distinct from a positive perception of being alone, which he referred to as solitude. Existential loneliness may be a manifestation of confusion or dissatisfaction in reference to questions about the meaning of life or religion. Moustakas (1961) did not feel that existential loneliness was in all instances a negative experience. He theorized that this type of loneliness could possibly facilitate creativity and personal growth.

Loneliness has been associated with various problematic behaviors and emotional states. Lonely adolescents appear to experience more difficulty with poor grades, truancy, school suspensions and expulsions, and delinquency

(Peplau & Goldston, 1984). Some studies have suggested that people who abuse alcohol experience a high degree of loneliness (Calicchia & Barresi, 1975; Nerviano & Gross, 1976). Wenz (1977) found an association between suicide attempts and loneliness. Loneliness may also have a negative impact on physical health (Perlman, Gerron, & Spiunner, 1978; Kivett, 1979). An extensive analysis of health and immunological consequences that may be associated with loss and separation was provided by Laudenslager and Reite (1984). West, Kellner, and Moore-West (1986) stated, after reviewing the literature, that there were inadequate data to make associations between socioeconomic or cultural factors and loneliness.

Loneliness has also been associated with various negative emotional states. It has been linked with shyness, low self-esteem, hostility, alienation, and negative attitudes toward specific persons and human nature in general (Jones, Freemon, & Goswick, 1981). In a study by Ouellet and Joshi (1986), loneliness was significantly correlated with self-esteem ($\underline{r} = -.28$, $\underline{p} < .006$). Lack of assertiveness, increased self-consciousness, introversion, and external locus of control have also been associated with loneliness (Peplau, 1985). Hojat (1982) found that the variables of anxiety, low self-esteem, depression, introversion, and external locus of control accounted for 48% of the variance of loneliness scores. Overholser (1992) demonstrated that individuals reporting elevated levels of interpersonal dependency (using the Dependent Personality Style Scale) displayed significantly lower levels of self-esteem, and significantly higher levels of depression, self-criticism, and loneliness. (It is important to note that female subjects, as a group, had significantly higher scores than did the male

subject group on the Dependent Personality Style Scale.) Depression, in particular, has been firmly linked with loneliness. (Peplau, 1985, provided a good synopsis of the research literature in this area and the association between depression and loneliness will be examined in more detail below.) Peplau and Perlman (1982) cautioned, "...in loneliness as in many similar phenomena, causality is complex and probably circular. For example, the extent to which low self-esteem is an antecedent cause of loneliness or a consequence of the experience of loneliness is unclear; it may well be both for some individuals."

The most widely-employed instrument for measuring loneliness is the Revised UCLA Loneliness Scale (RULS)(Russell, Peplau, & Cutrona, 1980). In a large normative sample, the mean loneliness score for respondents from a clinical setting was almost two standard deviations above the mean score for a general student sample (Russell, 1982). Loneliness scores were strongly related to depression, anxiety, dissatisfaction, unhappiness, and shyness. Respondents who described themselves as hard-working and as having wide interests tended to have lower loneliness scores. In another study, Russell (1978, September) found that the following "at risk" groups scored significantly higher on the loneliness measure than did college students: adult psychiatric inpatients, divorced adults, and adults participating in social skills workshops.

As mentioned previously, depression is commonly associated with loneliness. Correlations between scores on the Revised UCLA Loneliness Scale and the Beck Depression Inventory are typically in the range of .5 to .6. (For example, Anderson, Horowitz, and French [1983] obtained a correlation of .588. Staight and Harvey [1990] found a correlation of .6. These correlations were

significant at a p value of less than .001 for both studies.) Not all people who are lonely experience depression, however, and not all people whose primary complaint is depression perceive themselves as lonely (Blai, 1989).

The question of the temporal relationship between loneliness and depression has been addressed in two longitudinal studies. Rich and Scovel (1987) used a two-panel cross-lagged correlational analysis and determined that loneliness preceded depression. Their data also suggested that "interpersonal mistrust and neuroticism were related to depression through the variable of loneliness" (italics in original). Weeks, Michela, Peplau, and Bragg (1980), however, found that both depression and loneliness were highly stable over time. They stated that loneliness does not cause depression, and depression does not cause loneliness (though they may share some common origins). Weeks and his colleagues also demonstrated that although loneliness and depression are related, they represent two clearly different constructs. Over half the variance in loneliness was not accounted for by depression, and vice versa.

Research appears to lend support to Weiss's (1973) hypothesis that there are two primary affective states within the domain of loneliness (although more strongly supportive of the notion of emotional than social loneliness). Using the Revised UCLA Loneliness Scale (which appears to assess primarily emotional loneliness) and the Social Provisions Scale (designed to examine social loneliness), Russell, Cutrona, Rose, and Yurko (1984) found that emotional and social loneliness, although positively correlated, were largely independent of one another. Social loneliness was more strongly associatedwith not feeling well integrated, socially, than was emotional loneliness. Emotional loneliness was

more strongly associated with lack of intimacy with a particular person. Using Weiss's (1974) social provisions, the factors of attachment and opportunity for nurturance were significantly related to the experience of emotional loneliness. The factor of reassurance of worth was the strongest predictor of social loneliness.

Hsu, Hailey, and Range (1986) substantiated the idea that loneliness is not a unitary concept. They employed the Revised UCLA Loneliness Scale and the Belcher Extended Loneliness Scale (BELS) for their study and demonstrated that emotional loneliness is a greater component of depression than is social loneliness. Russell, Cutrona, Rose, and Yurko (1984) found that although both social and emotional loneliness were accompanied by depression, depression was best predicted by emotional loneliness. Rubenstein and Shaver (1982a) found four reliable factors after analyzing their data on loneliness: desperation, depression, impatient boredom, and self-deprecation. These authors felt that the category they labeled desperation was more characteristic of individuals experiencing emotional loneliness and that the category of impatient boredom was characteristic of people who felt socially isolated. Rubenstein and Shaver stated that the remaining two factors, depression and self-deprecation, were best conceptualized as generalized reactions to loneliness.

CHAPTER III

ATTACHMENT

Theoretical Foundations: John Bowlby and Mary Salter Ainsworth

Currently, the predominant theory of attachment is one put forth by John Bowlby and Mary Salter Ainsworth. Bowlby, a child psychiatrist, was originally trained in psychoanalysis, a system that placed prime importance on the processes of development and attachment. Psychoanalytic theory emphasized the critical nature of the influence of early relationships. Bowlby retained this emphasis, but departed from the Freudian idea that these relationships were based on an instinctual drive to reduce tension caused by unfulfilled biological needs. In order to set the stage for this point of departure, Bowlby cited both Sigmund and Anna Freud in his seminal work, Attachment and Loss (1969). In his essay, Psycho-analysis (1922/1955), Sigmund Freud wrote:

> In the first instance the oral component instinct finds satisfaction by attaching itself to the sating of the desire for nourishment; and its object is the mother's breast. It then detaches itself, becomes independent and at the same time auto-erotic, that is, it finds an object in the child's own body. Others of the component instincts also start by being auto-erotic and are not until later diverted onto an external object (p. 245).

In Three Essays on the Theory of Sexuality (1905/1953), Sigmund Freud referred to the child's sucking at the breast as the prototype of later sexual relations:

> But even after sexual activity has become detached from the taking of nourishment, an important part of this first and most significant of all sexual relations is left over, which helps to restore the happiness that has been lost. All through the period of latency children learn to feel for other people who help them in their helplessness and satisfy their needs, a love which is on the model of, and a continuation of, their relation as sucklings to their nursing mother. There may perhaps be an inclination to dispute the possibility of identifying a child's affection and esteem for those who look after him with sexual love. I think, however, that a closer psychological examination may make it possible to establish this identity beyond any doubt. A child's intercourse with anyone responsible for his care affords him an unending source of sexual excitation and satisfaction from his erotogenic zones (pp. 222-223).

Anna Freud wrote in Psychoanalysis and Education (1954):

> ...the relationship to the mother, although the first to another human being, is not the infant's first relationship to the environment. What precedes it is an earlier phase in which not the object world but the body needs and their satisfaction or frustration play the decisive part....In the struggle for satisfaction of the vital needs and drives the object merely serves the purpose of wish fulfilment, its status being no more than that of a means to an end, a "convenience." The libidinal cathexis at this time is shown to be attached, not to the image of the object, but to the blissful experience of satisfaction and relief (pp. 11-12).

In contrast, Bowlby (1969) posited that an infant was not motivated to form an attachment with its mother based on her association with food, nor was it linked to sexuality. According to Bowlby, the central issue for the infant was not the amount of oral gratification, but the overall quality of care received from the primary attachment figure. This pertains more specifically to the caretaker's responsiveness and availability. The infant's primary motivation, as a result of the evolutionary process, is to maintain proximity in order to insure survival.

Working independently from Bowlby, Harlow and his associates also arrived at the conclusion that oral gratification by a primary caretaker could not account for the development of attachment behavior. Harlow and Zimmerman (1959) found that infant monkeys, given the choice of a terrycloth surrogate "mother" or a bottle-feeding "mother" constructed of wire, preferred the terry cloth figure. They felt the monkeys derived more comfort from the cuddly, warm surrogate than from the cold surrogate made of wire. The infants spent more time clinging to the cloth surrogates and used this "mother" as their homebase when commencing exploratory expeditions, returning to her quickly upon presentation of novel or startling stimuli.

In formulating his attachment theory, Bowlby acknowledged the influence of two prominent ethologists, Lorenz (1935/1937), for his theory of imprinting during critical developmental time periods, and Tinbergen (1951), for his formulation of the concepts of sign stimuli and social releasers. In addition to ethology, Bowlby (1977) incorporated principles derived from control theory. Bretherton (1992) explained that Bowlby was referring to a system such as that put forth by Miller, Galanter and Pribram (1960) in Plans and the Structure of

Behavior. These authors stated that behavior is organized by schemata composed of plans and images: "A Plan is any hierarchical process in the organism that can control the order in which a sequence of operations is to be performed." Bretherton (1992) said that behaviors can be "goal-corrected" and "can adapt in greater or lesser degrees to changes in environmental circumstances, provided these do not deviate too much from the organism's environment of evolutionary adaptedness." Bowlby (1977) stated that by borrowing from ethology and control theory, his attachment theory "is enabled to dispense with concepts of psychic energy and drive and also to forge close links with cognitive psychology. It conforms to the ordinary criteria of a scientific discipline." (In 1980, Bowlby published an article entitled, "By ethology out of psycho-analysis: An analysis in interbreeding.") Bowlby (1969) described his system as a control theory of attachment behavior. For the young human, sucking, clinging, following, crying, and smiling contribute to the formation of attachment in that they are primitive means of gaining proximity to the primary caregiver. Approach behavior appears very early in human beings and other species, well before avoidance and withdrawal behaviors. The range of stimuli which can activate the behavioral systems in the very young is wide. The infant learns to become more discriminating as it ages and, eventually, proximity to the mother becomes a matter of being a set goal: behavior becomes more complex and more goal-directed.

Bowlby theorized that there are behavioral systems specific to human beings that have evolved because they contributed substantially to species survival (Ainsworth, Blehar, Waters, & Wall, 1978). This implies survival of the

individual to an age where it is sexually mature, able to reproduce, and able to raise its young. The human infant is vulnerable for a lengthy time. Specific behavior patterns (i.e., attachment behaviors) evolved in order to maintain proximity to the figure of the principal caregiver during this time. Behaviors involved in the initiation and maintenance of interactions support the attachment function in that proximity serves as protection from predators in the environment. Bowlby pointed out that even in modern Western society, a child is much safer when in the attendance of its principal adult figures (e.g., is less likely to become a victim of a traffic accident).

Behavioral systems may be comprised of species-specific, fixed-action patterns. Bowlby contended, however, that species-specific patterns may also be flexible and goal-directed. This is an important dynamic of his control systems theory that acts purposefully, just as "goals" are built into machines by people who "program" them. The term Bowlby preferred to use was "goal-corrected." Behavioral systems that are "goal-corrected" are structured in terms of set-goals (i.e., degree of proximity to an attachment figure):

> ...a variety of different conditions may activate attachment behavior, in addition to exceeding the distance (and time) away from the attachment figure that was specified by the "original" setting of the set-goal. Depending on the intensity with which such conditions may activate the attachment system, the set-goal may abruptly change its setting to specify the required degree of proximity more narrowly. Indeed, when the attachment system is activated to a high degree of intensity, the set-goal may be close bodily contact, and attachment behavior will not be

> terminated until this new set-goal has been achieved. Furthermore, there is substantial flexibility in the attachment behaviors that may be used for the achievement of the set-goal (Ainsworth et al., 1978).

Bowlby outlined four stages through which a child progresses in the process of attachment formation (Ainsworth et al., 1978). The first stage is the initial preattachment phase. This is the phase of "orientation and signals without discrimination of figure" (Bowlby, 1969). The second stage is the phase of attachment-in-the-making. Here there are "orientation and signals directed towards one (or more) discriminated figure(s)." In the phase of clear-cut attachment, there is "maintenance of proximity to a discriminated figure by means of locomotion as well as signals." During the phase of goal-corrected partnership, there is a lessening of egocentricity to the point that the child is able to see things from another's point of view and is able to infer what feelings and motives, set-goals, and plans might influence another person's behavior.

Bowlby (1977) stated that when a child is forming an attachment, it is critical for the parents to:

> (a) provide him with a secure base, and (b) encourage him to explore from it. This entails, first, an intuitive and sympathetic understanding of a child's attachment behaviour and a willingness to meet it and thereby terminate it, and secondly, recognition that one of the commonest sources of anger is the frustration of a child's desire for love and care, and that anxiety commonly reflects uncertainty whether parents will continue to be available. Complementary in importance to a parent's respect for a child's attachment desires is respect for his desire to explore and

> gradually to extend his relationships both with peers and with other adults....Exploratory activity is of great importance in its own right, enabling a person or an animal to build up a coherent picture of environmental features which may at any time become of importance for survival....In this sense exploratory behaviour is antithetical to attachment behaviour. In healthy individuals the two kinds of behaviour normally alternate.

Bowlby (1973) felt that a child's perception of his caretaker(s)' availability and responsiveness determined the degree of security or anxiety in the resulting attachment. A child's internal working model of "self" and "other" concepts is developed by the end of the first year. Independently of Bowlby, Ainsworth also developed an attachment theory that incorporated different types of attachment based on caretaker synchronicity. In 1940 Ainsworth (then Salter) wrote, "familial security in the early stages is of a dependent type and forms a basis from which the individual can work out gradually, forming new skills and interests in other fields. Where familial security is lacking, the individual is handicapped by the lack of what might be called a secure base from which to work."

Primarily by means of evaluating maternal responses to infant signals, Ainsworth studied the development of attachment using naturalistic observation. She identified three primary types of attachment patterns: secure, anxious-avoidant, and anxious-resistant. A high degree of syncronicity of both verbal and nonverbal behaviors between mothers and infants usually produced secure attachment. Lower maternal sensitivity to infant signals generally resulted in

anxious-avoidant or anxious-resistant styles (Ainsworth & Bowlby, 1991). Ainsworth's utilization of the Strange Situation allowed for the empirical investigation of both her and Bowlby's hypothesis that varying degrees of synchronicity produced different types of attachment patterns (Bretherton, 1992). The Strange Situation was originally designed to study the ratio of proximity to exploratory behaviors in high and low stress situations. This twenty minute laboratory session was comprised of eight segments with various combinations of mother and infant, mother with infant and stranger, infant with stranger, and infant alone. Although data in reference to percentage of time spent in proximity and exploratory behaviors were as expected, what was serendipitously of interest to Ainsworth were observed infant behavior patterns upon reunification with their mothers. Securely-attached babies appeared to have an internal working model of their mothers as being available even when out of sight (Ainsworth & Bowlby, 1991). They cried less than insecurely-attached infants when their mothers left the room and also greeted their mothers more enthusiastically upon their return. Most insecurely-attached infants cried a great deal when their mothers left. Some, however, showed apparent disinterest in the fact that their mother was leaving or absent. These infants then avoided their mothers when they returned. Ainsworth and her colleagues hypothesized that this seemingly unresponsive behavior served a defensive function in the face of separation, perhaps due to prior inconsistency (if not downright rejection) on the part of the mothers.

Campos, Barrett, Lamb, Goldsmith, and Sternberg (1983) conducted research on what percentages of a large infant population fell within the various

attachment categories. They found that approximately 60% of infants demonstrated secure attachment, roughly 15% of the babies had developed an anxious/ambivalent attachment style, and approximately 25% exhibited an avoidant style.

Isabella, Belsky, and von Eye (1989) conducted a well-designed study to investigate Ainsworth's and Bowlby's theory of the attachment formation process. Utilizing the Strange Situation, they observed thirty infant-mother dyads at 1-, 3-, and 9-month intervals in an attempt to track development of attachment to age one year. The study included ten securely-attached, ten avoidantly-attached, and ten resistantly-attached dyads. The results indicated that development of secure attachment by age one year is best predicted by synchronous interactions between primary caretakers and their infants during the first twelve months. The authors found that, conversely, insecure attachments result from asynchronous interactions. Interactional synchrony is defined as "the extent to which interaction appeared to be reciprocal and mutually rewarding, so that its frequent occurrence would presumably foster development of the infant's working model of mother as available, responsive, and trustworthy."

Bowlby's and Ainsworth's relational position, in reference to attachment formation, has been challenged by investigators who suggested that observed attachment styles may be influenced largely, or in part, by endogenous temperamental factors (Sroufe, 1985). Theorists such as Belsky and Nezworski (1988), however, hypothesized that virtually any infant is capable of forming a secure attachment regardless of behavioral characteristics. No matter the

temperamental disposition of the infant, what is of paramount importance in determining attachment style is still the sensitivity of the primary caretaker(s) (i.e., degree of consistency despite infant idiosyncrasies). Similarly, Belsky and Rovine (1987) stated that temperament is not a prominent factor in the development of attachment style. They did suggest, however, that temperament may influence how various attachment styles may be expressed by infants. Sroufe (1985) reviewed the literature (empirical and theoretical) pertaining to both the relationship and temperament models of attachment. He found that the evidence clearly supported the stance that attachment style is a reflection of the infant-caregiver relationship history. "The whole Ainsworth scheme is trivialized if differences in attachment classification may be reduced to endogenous infant variation. In fact, if these assessed differences are due largely to temperament, then they cannot be measures of attachment at all in the Bowlby/Ainsworth sense, because within their framework, attachment (the affective/organizational bond between infant and caregiver) is inherently a relationship concept."

Nurturance and Bonding

The terms "nurturance" and "bonding" are also used in reference to relationships between infants and their primary caretakers. Nurturance is defined in The American Heritage Dictionary as, "the providing of loving care and attention." This same source defines bonding as, "the formation of close, specialized human relationships, such as those that link parent and child." It can

be argued that this definition of bonding is subsumed under Bowlby's concept of the attachment process (especially in terms of its evolutionary/adaptive role) (Papousek & Papousek, 1992). Papousek and Papousek (1992) addressed the importance of synchronicity in the bonding process (in essence recapitulating a primary theme of Ainsworth and Bowlby). "Once the interchange begins, the first signs of attention and responsitivity from the infant can prime intuitive predispositions in the parent for further interchanges." Block (1965) defined maternal nurturance as, "an indication of warmth, involvement, and recognition of the child's desires and emotional needs." The Bowlby/Ainsworth theory of attachment encompasses the processes of bonding and nurturance. This is important to note as much of the research specifically addressing these two terms dovetails well with, and supports, the theory first put forth by Bowlby and Ainsworth. Research on bonding and nurturance often examines parental factors involved in the attachment process. For example, Rickel, Williams, and Loigman (1988) found that maternal nurturance was negatively correlated with mothers' scores on anxiety (trait and state) and depression scales. Van de Carr and Lehrer (1986) outlined a prenatal intervention program for both parents that involves physical and tactile fetal stimulation. The primary purpose of the program is to promote better maternal health practices and to enhance bonding with the infant by both the mother and the father. Results of this study indicated that prenatally-enhanced infants communicated and spoke earlier than non-participant infants. Mothers breast-fed longer and fathers showed evidence of a stronger bond with their infant than did control group parents. In addition, study

infants developed teeth earlier. (In some instances teeth were present at birth.) Papousek and Papousek (1992) also addressed parental bonding with infants. Their theoretical work deals with the mechanisms of "dialogic interchanges" and they posited that "preverbal communication plays a key role in the environmental support to infant cognition, communication, and social integration."

The Role of Touch in Bonding and Therapeutic Interventions

Recent research has demonstrated that touch (kinesthesia) is a fundamental element in the human bonding process. The skin is the largest organ of the body, and of the five senses, touch is the most sensitive (White, 1988). According to Wanning (1993), "all human senses are a specialization of the sense of touch; touch remains the deepest, the most intimate, the most primal means of knowing, the most elemental form of communication." He added that human beings comfort each other by means of holding or stroking, and when in pain, will rub the affected area. Hatch and Maietta (1991) stated that by the time of birth, both mothers and infants have a reality based upon "shared and highly synchronized motion....This ability of mothers and infants to maintain highly compliant motion relationships at the time of birth is the result of the mutual touch-guided motion following what goes on between them beginning with conception." As "families develop unique patterns of movement that bond them together and mark them as members of the same family," a newborn (as a result of in utero experience) "is intimately familiar with the family's motion patterns." Hatch and Maietta outlined methods whereby parents may enhance bonding through the use of kinesthetic "mutual following skills."

Ludington (1990) studied the effect of skin-to-skin contact (SSC) between premature infants and their mothers. She measured indices of energy conservation in the infants, specifically heart rate and percentage of time spent in sleeping and waking states. Ludington stated that "awake states are known to be more costly to infants than either quiet or active sleep." She hypothesized that reductions in energy expenditure might have a positive impact on weight gain. Skin-to-skin contact was made via the kangaroo position where a diaper-clad infant was placed upright between its mother's breasts. Activity level during SSC (both when infants were awake and asleep) was significantly lower than during both pre- and post-SSC periods. Heart rate did not drop during SSC as expected, but this may have been due to the increase in body and skin temperatures associated with SSC. Ludington's study did not involve tracking the infants after discharge, but she suggested this was an important question for future research (specifically in reference to weight gain).

Another SSC study with premature infants was conducted by Affonso, Bosque, Wahlberg, and Brady (1993). Maternal bonding was studied over a three week period using SSC via the kangaroo method. During the first week, mothers were preoccupied with their pregnancy, labor, and delivery. They commonly expressed feelings of victimization, helplessness, lack of control, and guilt (especially over lack of mastery in reference to caretaking skills). Mothers often reported that they did not feel "tuned in" to their infants. Early in the second week, the mothers related feeling increased anxiety over fears for their infant's well-being and their ability to cope in general with events at home. By the end of the second week, however, the women became more assertively

involved in the care of their infant, often verbalizing improved self-esteem in reference to their caretaking abilities. The mothers appeared to be calmer during the third week of the study, and self-esteem and sense of mastery continued to increase. Mothers expressed eagerness to take their babies home and it was common for them to voice a new "closeness" with their infants.

Obviously it is not possible to obtain information from infants regarding subjectively-felt benefits of physical contact with caretakers. Empirical data on the effects of massage have been gathered, however, from adult populations. Field, Morrow, Valdeon, Larson, Kuhn, and Schanberg (1992) studied reduction of perceived anxiety in a sample of juvenile psychiatric patients. Children in the sample ranged in age from seven to 18. Half were diagnosed with adjustment disorders and half with depressive disorders. A control group from the same population watched a relaxing video tape (of pleasant sounds and visual images) during the same time periods experimental subjects received therapeutic massage. Data were collected on Day 1 and Day 5 (following daily treatment) by means of The State Anxiety Inventory for Children (STAIC)(Spielberger, Gorsuch, & Lushene, 1970), The Profile of Mood States (POMS)(McNair, Lorr, & Droppleman, 1971), and behavioral observations. Although improvement was more striking for depressed than adjustment-disordered patients, significant positive gains were reported on all measures, both within and between data collection sessions. Using the same measures, no apparent changes occurred within the control group. In addition, percentage of nocturnal sleep time was significantly increased over the five day period for the experimental group.

Urine cortisol and norepinephrine levels also decreased significantly for the depressed patients.

Ferrell-Torry and Glick (1993) studied the effects of therapeutic massage on perceptions of pain, anxiety, and relaxation in nine adult male cancer patients (mean age 56.6 years). Self-reports of pain and relaxation were measured using a 100-mm visual analogue scale (VAS). Self-reports of anxiety were measured using the State-Trait Anxiety Inventory (STAI)(Spielberger et al., 1970). Data were collected on two consecutive days. On both days, group mean scores on perceptions of pain, anxiety, and relaxation showed significant improvement. In addition, group means for all measures showed slight improvement prior to massage on Day 2 compared to Day 1. (Significance levels were not given.) Although not statistically significant, decreases in blood pressure and heart and respiratory rates were also noted, both within and between massage sessions.

Attachment Throughout the Life Span

Bowlby (1979) stated that "...attachment behaviour is held to characterize human beings from the cradle to the grave." During the past fifteen years, several research studies have been conducted in an attempt to track attachment style throughout the life span.

Sroufe, for example, has studied Ainsworth's and Bowlby's theories in longitudinal follow-up studies. In an extension of Ainsworth's work, Sroufe has studied children with attachment patterns identified during infancy, in their preschool and kindergarten settings (Sroufe, 1983; Sroufe, Fox, & Pancake, 1983). Sroufe also acknowledged a heavy debt to Bowlby (Sroufe, 1988). He

stated, "differences are primarily a matter of emphasis. For example, we have emphasized how relationships are internalized, in addition to generalized expectations concerning self and others" (italics in the original). Sroufe (1983) stated that his research has centered primarily on the hypothesis "that quality of infant-mother attachment would be related to later personal and interpersonal competence." According to Sroufe, research of this nature is important in that possible behavioral difficulties may be predicted prior to the beginning of the academic career. (Psychotherapeutic interventions for use with attachment disorders will be discussed below.)

In a study comparing interpersonal behavior of children with secure and insecure attachment styles, Sroufe (1983) predicted that avoidant children could be expected to show hostile, isolated, and disconnected behaviors and that resistant children could be expected to exhibit impulsive, overly-anxious, and adult-oriented behaviors. The study group was comprised of forty children who were in preschool or kindergarten. Participants were divided in a roughly equal manner in reference to attachment type and gender. Age of the study participants ranged from forty-seven to fifty-seven months. Data were collected from teachers by means of rankings and ratings (emotional health/self esteem, self-confidence, social competence, social dominance, dependency, and their liking of the child), Q-sort indices pertaining to adequacy of social functioning, and various behavior checklists. In addition, a group of independent monitors made their own observations. Generally, securely-attached children scored significantly higher on measures of positive characteristics and behaviors than did the avoidantly- and resistantly-attached children. In all measures there were

no statistically significant differences between the avoidant and resistant children. Securely-attached children were found to be more flexible in their management of impulses and feelings. This group also provided the best fit on the Q-sort for criteria describing high self-esteem. They showed fewer problem behaviors and fewer behavior aberrations. Securely-attached children also demonstrated a higher rate of positive attention-seeking behaviors. They more often initiated, responded to, and maintained interactions with both peers and adults using positive affect. These children ranked higher on popularity and empathy indices and were viewed as more compliant and socially competent.

In another longitudinal study, Sroufe, Fox, and Pancake (1983) sought to determine whether children with various attachment styles exhibited different levels of attachment vs dependent (specifically, overdependent) behavior. The distinction between attachment and dependent behavior was outlined by Bowlby (1977). "The concept of attachment differs greatly from that of dependence. For example, dependence is not specifically related to maintenance of proximity, it is not directed towards a specific individual, it does not imply an enduring bond, nor is it necessarily associated with strong feeling. No biological function is attributed to it." Sroufe, Fox, and Pancake (1983) added, "children who require a high degree of contact, approval, or attention from adults are showing a deviation from the developmental course toward autonomy usual in our culture. To the extent that this adult contact interferes with environmental mastery and peer relations such dependency would be maladaptive." (The same subject pool and data collection methods were used for this study as for the previously discussed 1983 Sroufe study.) The authors hypothesized that anxious-avoidant children

would be more indirect in their expression of dependency (i.e., low on child-initiated contact, but relatively high on teacher-initiated contact) than the other two groups. The anxious-resistant group would most likely score high on both contact measures, while the securely-attached group was expected to be moderate on child-initiated contact but low on teacher-initiated contact. Data showed evidence of a clear trend to support the hypotheses although results were not statistically significant. Securely-attached children showed less emotional dependence (and a less generalized tendency to seek attention) on their teachers. They usually sought assistance only after unsuccessful attempts to utilize their own resources. They accepted feedback appropriately and quickly returned to their peer group. Securely-attached children exhibited more positive attention seeking and appropriately greeted the teachers upon their arrival. They also enjoyed mutually positive interactions with the teachers. The anxious-resistant children constantly sought attention from the teachers. They were generally near the teachers during free play and tended to ask for help without first attempting tasks on their own. Anxious-avoidant children sought attention using indirect strategies and generally only in times of low stress levels for the group as a whole. In addition to ignoring rather than greeting teachers upon arrival, these children avoided teachers who sought to initiate interaction. As group stress rose, this group was more likely to withdraw physically and isolate themselves when injured or disappointed. Anxious children received more directives from the teachers who appeared to have low expectations for compliance. Although the teachers rarely expressed anger overtly, when they did it was generally directed toward the avoidant children. Sroufe and his colleagues were careful to

point out that anxious attachment does not cause later over-dependent behavior; it does, however, appear to predict it.

In a fashion similar to Sroufe (1983), Rosenberg (1984) used a longitudinal design to examine how attachment style influenced a child's ability to engage in fantasy play. Themes and scripts of securely-attached children tended to be more elaborate than those of their anxiously-attached peers. In contrast to securely-attached children, avoidantly-attached children rarely incorporated human characters into their play scripts. In addition, fewer themes dealing with conflict appeared in the play of securely-attached children. More importantly, perhaps, is the finding that when these themes occurred, securely-attached children were better able to fantasize conflict resolution of an effective and appropriate nature.

Belsky and Nezworski (1988) clarified that when Sroufe and his professional colleagues use the term "maladaptive," they are referring to future interactions and development. Although an insecure attachment style may prove problematic as a child moves out into the world, this means of functioning may have been adaptive initially given rearing circumstances. The employment of an insecure style may have functioned to protect the child against anxiety engendered by an inconsistent or unavailable caretaking style.

Grossman and Grossman (1991) conducted two longitudinal attachment studies based upon Ainsworth's theory. These studies followed German children from infancy through the age of ten. (One study was begun in 1976 and the other in 1980.) Grossman and Grossman found that attachment behavior was largely determined by the sensitivity of maternal responses to infant signals

during infancy. They stated that not only did their results confirm Ainsworth's theory, but their observations yielded important data in reference to the development of a child's sense of communicative competence. In observations of 12- and 18- month-old infants, Grossman and Grossman found that attachment style affected how parents monitored, and interacted with, their infants in play. Parents in insecurely-attached dyads interfered more often during play, while parents in securely-attached dyads were more supportive of independent play. Securely-attached infants were more open in communications with their parents, especially when distressed, and were also more sensitive to the emotional states of new adult play partners. When the children were two years of age, Grossman and Grossman studied how attachment style was related to parents' interactions as playmates and teachers with their offspring. Children whose parents fit an "explaining teaching parent" model, had higher scores on the Mental Developmental Index and played longer at a higher cognitive level. The study children were next observed at the age of five years in their preschool setting. Severe behavioral problems were rare for securely-attached children and they were more self-reliant in conflict management with their peers. They also initiated more activities with other children during play than did insecurely-attached children. Reunion patterns with parents were studied when the children were six years of age. Grossman and Grossman found that reunion behaviors for different types of attachment were remarkably similar to those typically observed in infants in the Strange Situation. As a result of these observations at the age of six, 87% of the children were classified in the same attachment group as they were at the age of one year. The six year old children (in their mother's absence)

drew pictures of their family. These drawings were scored for individualization of the figures, including lack of repetitiveness, and completeness of the figures. Children with secure attachments at the ages of one and six, scored significantly higher in terms of individualization than did children with insecure attachments at both ages. At the age of ten, the study children were evaluated on their perceptions of their parents' supportiveness. The parents were interviewed as well. Although no relationship was found between early attachment to parents and perceived parental support, there was strong agreement in reference to degree of parental support as assessed by both the children and their parents. Early attachment style was found, however, to influence how children responded in stressful situations. Children with an early secure attachment were more willing to admit negative feelings resulting from these situations and were more relationship-oriented in their problem-solving strategies. Insecurely-attached children were more likely to stay by themselves and try to solve problems without seeking help from another person. One of the most important findings from this time period was in the area of peer interactions. Children with early secure attachments usually had at least one good friend whom they felt was trustworthy and reliable. Children with early insecure attachments, on the other hand, reported either having no good friends or stated they had many good friends without being able to name them. They also reported often feeling ridiculed or excluded by their peers. Assessments made by the children and their parents in reference to peer relations were highly congruent. At the time of publication, Grossman and Grossman stated they hoped to continue their

longitudinal studies through adolescence and into early adulthood if research resources were available.

Ainsworth (1991) theorized how children's attachment patterns may change in their relationships with their parents as they mature into adulthood. She stated that it is reasonable to assume that a major shift occurs for children around the age of six, when they begin school and are required to begin assuming more responsibilities. Ainsworth said that although research has demonstrated that significant changes do occur at this time in terms of attachment (i.e., movement toward peers), the processes underlying these changes are not as yet well understood. Another shift occurs with the onset of adolescence which marks the onset of physical and sexual maturity. Young people at this age begin searching for a peer/mate partnership and attachment mechanisms are centered around reproductive and caregiving systems. A significant shift occurs for women in the course of pregnancy, childbirth, and childrearing. At this time, the need for one or more attachment figures intensifies. Ainsworth proposed that women may be genetically predisposed throughout the course of development toward becoming more attached to, and relying more upon, attachment figures than men (although this may not be evident during infancy). From an evolutionary viewpoint, females of a species are generally not as strong or swift as males. In terms of evolutionary adaptedness, they were less able to protect themselves and more vulnerable to danger, especially when they had offspring to protect as well. Even though adults usually have a primary attachment figure in their mate, that attachment to parents does not cease is evidenced by response to a parent's death.

Weiss (1991) suggested that the bonds of adult attachment are developmental extensions of the bonds of childhood attachment. He posited that attachment bonds of childhood and adulthood have three major similarities: emotional characteristics, generalization of experiences, and temporal linkage. Although perceptual aspects are different, attachment of both periods can be triggered by threat. Resulting emotional and motivational factors are similar in both adults and children. Weiss hypothesized that emotional elements associated with childhood attachment may be generalized to the arena of adult attachment. For example, children who lose confidence in their parents as attachment figures, may have difficulty bonding with a mate due to distrust. In reference to the notion of temporal linkage, adult attachments (i.e., pair bonding) appear after parents are less significant as attachment figures. Weiss stated this pattern is consistent with the hypothesis that adult attachment is a later stage of the childhood attachment system. Attachment does occur in adult bonds and Weiss believed this is evidenced by the deep grief experienced at the death of a spouse, "in which separation protest is a principal component."

Bowlby (1977) believed that individuals continue to exhibit characteristics of their particular attachment style, developed during infancy, into adulthood. "As a result (the adult) tends to assimilate any new person with whom he may form a bond, such as spouse or child, or employer or therapist, to an existing model...and often to continue to do so despite repeated evidence that the model is inappropriate." Bowlby added that the adult expects to be perceived and treated by others within the context of his or her model. This leads to "various misconceived beliefs about the other people, to false expectations about

the way they will behave and to inappropriate actions, intended to forestall their expected behaviour." Bowlby identified three patterns of insecure attachment manifested in adult interactions: compulsive self-reliance, compulsive care-giving, and compulsive care-seeking. A person who is compulsively self-reliant takes great pride in their self-sufficiency. "Closeness to others is shunned lest the underlying attachment needs be awakened and place the person in a position of too great vulnerability" (West & Sheldon, 1988). It is possible for the compulsive care-giver to establish close relationships. They are continually in the position of the care-giver, however, never allowing themselves to receive ministrations of others. Bowlby (1977) felt the compulsive care-seeker functioned from a base belief of doubt in another person's availability and responsiveness. "As a consequence of this anxiety, these individuals attempt to confirm their security with the attachment figure in a concrete manner by displaying urgent and frequent care-seeking behaviors" (West & Sheldon, 1988).

Bowlby (1988) stated that the study of attachment throughout the life span requires "the development of psychological methods for assessing patterns of attachment and their derivations at each phase of the life cycle." A variety of measures have been utilized in studies on childhood attachment and several instruments have been developed for the study of attachment during adulthood. Measures based upon the theories of Bowlby and Ainsworth have been designed to study adult attachment, including those by the following researchers: George, Kaplan & Main, 1987 (Adult Attachment Interview), Hazan and Shaver, 1987 (romantic relationships), West and Sheldon, 1988 (based on Bowlby's descriptions of insecure attachment), Armsden and Greenberg, 1987 (Inventory

of Parent and Peer Attachment), and Bartholomew, 1990 (based upon positive or negative models of self, and positive or negative models of others). (Lyddon, Bradford, & Nelson [1993] have reviewed the literature on attachment measures for adolescents and adults.)

In developing an adult attachment scale, Shaver and Hazan (1988) hypothesized that "if romantic love is an attachment process, it should manifest itself in three primary forms akin to the three styles of infant-caregiver attachment identified by Ainsworth...Because attachment is the first of the socially oriented behavioral systems to develop, the form it takes affects a person's caregiving and sexual behavior." Adult attachment, as viewed from a romantic point of view, encompasses not only attachment but also caregiving and sexual mating. Hazan and Shaver (1987) found that adults in their sample classified themselves into the various attachment categories at approximately the same percentages as found in studies of infant attachment style: 56% secure, 24% avoidant, and 20% anxious/avoidant. Although many important results were produced by this examination of adult attachment style, a finding of particular interest was that romantic relationships of securely-attached adults tend to last more than twice as long as those of insecurely-attached adults (mean = 10.02 years for secure adults, 4.86 years for anxious/ambivalent adults, and 5.96 years for avoidant adults). In addition, divorce rates were significantly higher for the two insecurely-attached groups.

Bartholomew (1990), utilizing Bowlby's concept of internal working models of "self" and "other" (1973), developed a theory of adult attachment based upon four prototypic patterns using combinations of a person's image or

model of self (positive or negative and, respectively, low or high in dependence upon others) and a person's image or model of others (positive or negative and, respectively, low or high in avoidance of others). (See Table 1.) Secure individuals have a positive image of both self (i.e., see self as worthy of love and attention) and others (i.e., view others as trustworthy, caring, and available). These people are comfortable with intimacy and autonomy and, therefore, are low on both avoidance of, and dependence upon, other people. Dismissing people are detached from and avoid other individuals, but have a positive self-image and are, therefore, not particularly dependent upon others. They make themselves "invulnerable to negative feelings which might activate the attachment system," a stance similar to that observed among children with an avoidant style in the Strange Situation. Individuals who are preoccupied with intimate relationships have a negative model of self but a positive model of others. High in dependence and low in avoidance, they have "an insatiable desire to gain others' approval and a deep-seated feeling of unworthiness." This style is equivalent to the ambivalent stance from the Strange Situation. People with both a negative self-image and negative model of others are fearful of becoming close to other individuals, although they do desire social contact. They view others as uncaring and unavailable, and themselves as unlovable and vulnerable to rejection. (This group may be an extension of the avoidant attachment style.) Both the preoccupied and fearful groups have strong dependency needs. Although members of the former group are more willing to attempt making social contacts, both groups are susceptible to depression and loneliness (particularly the fearful group).

Table 1

Bartholomew's (1990) Model of
Adult Attachment Styles

Model of Self	Model of Others: Positive	Model of Others: Negative
Positive	SECURE	DISMISSING
Negative	PREOCCUPIED	FEARFUL

Bartholomew, K. (1990). Avoidance of intimacy: An attachment perspective. Journal of Social and Personal Relationships, 7, 147-178.

Bartholomew and Horowitz (1991) conducted a study to determine proportional representation within the four attachment styles. They were also able to delineate several personality factors characteristic of the different attachment styles. Secure individuals (49% of the normative sample) rated high on measures of warmth, intimacy, self-esteem, and balance of control in friendships. Although the dismissing group (18% of the sample) scored particularly high on self-esteem, they rated low on emotional expressiveness, and measures of intimacy and self-disclosure. The profile for the preoccupied group (12% of the sample) was the opposite of that of the dismissing group. They scored high on emotional expressiveness, caregiving, and self-disclosure (but showed a tendency to self-disclose inappropriately), but low on self-esteem. The fearful group (21% of the sample) scored significantly lower on factors of self-disclosure and intimacy than did either the secure and preoccupied groups. Distrust of others was very high and self-esteem was low for subjects in the fearful group. Bartholomew and Horowitz found that male subjects received significantly higher ratings than did female subjects on variables characteristic of those with a dismissing attachment style ($t\ [75] = 2.70$, $p < .01$). Female subjects received significantly higher ratings than did male subjects on variables considered representative of a preoccupied attachment style ($t\ [75] = 2.88$, $p < .01$).

Transgenerational Transmission of Attachment Style

Bowlby (1977) suggested that attachment style may function within an intergenerational transmission model. "The inheritance of mental health and of

ill health through family microculture is no less important, and may well be far more important than is genetic inheritance." There is research indicating that Bowlby's hypothesis may be correct. Grossmann and Grossmann (1991) assessed parents of six year old children using a German version of the Adult Attachment Interview (George, Kaplan & Main, 1985). This measure asks for descriptions of close relationships in childhood, positive memories, and evaluations of respondents' relationships with their parents. Grossmann and Grossmann were interested in the following four parameters: descriptions of parents or other attachment figures as supportive or unsupportive, ability to focus on the topic of attachment, impressions of their own attachment experiences, and defensiveness during interview (particularly when discussing present emotional relationships with their own parents). Using these categories, mothers were classified into four groups: positive, reflexive, defensive, and repressive. (Data were collected from fathers as well but had not yet been analyzed at the time of publication.) Mothers of infants who had secure attachments five years prior to this study generally showed positive or reflexive patterns. Defensive and repressive patterns were typically found among mothers whose infants had been insecurely-attached five years previously.

Main (1991) found that the most significant factor for secure infant attachment was the overall "coherence" of the parent's descriptions of his or her own attachment history, using the Adult Attachment Interview (George, Kaplan, & Main, 1985). Parents of securely-attached children appeared to have unusually easy access to childhood memories and were consistent in describing, evaluating, and discussing effects of their attachment history. On the other hand,

parents of insecurely-attached children tended to be relatively incoherent in their interviews. These respondents frequently exhibited logical and factual contradictions, as well as contradictions between descriptions of their relationships with their parents and actual, previously provided, autobiographical information. In addition, they had difficulty focusing on the interview topic and difficulty accessing early memories.

Caspi and Elder (1988) found "a reinforcing dynamic between problem behavior and unstable ties in the family" across four generations of women in their Berkeley Guidance Study. They suggested "that relational styles that are learned in one situation are likely to be evoked in other situations,...especially in relatively ambiguous situations that can be structured to permit the pattern to be expressed. Moreover, when relational patterns are carried into new situations they typically elicit responses from others that support and validate that pattern."

Attachment Disorders and Psychotherapeutic Interventions

Sroufe (1988) suggested that a child's attachment style may shift to another mode if environmental factors change and then remain consistent in the new situation. He stated that "attachment theory is not a critical period theory." Although inner working models become "somewhat firm even in early childhood," and influence how experiences are processed, they can be altered over the course of a lifetime. Sroufe, however, did conclude his discussion by stating that early experience does retain some influence. "This may take the form of a tendency to resume the previous pattern in the face of loss or other

serious stress, or it may take the form of issues which remain salient or challenging for the individual."

Disorders of attachment in infancy may be defined as "distortions in the parent-child relationship that result in the baby's inability to experience the parent as emotionally available and as a reliable protector from external danger or internal distress" (Lieberman & Pawl, 1988). These disorders may be classified into three main categories: 1) non-attachment, 2) anxious attachment, and 3) disrupted attachment. Non-attached infants have no opportunity for forming emotional connections and have difficulty with interpersonal relationships, cognitive functioning, and modulation of aggression, displeasure, and frustration. Infants who have anxious or ambivalent attachments have been able to form a relationship with a preferred caregiver, yet they show a high degree of conflict about the perceived physical and emotional availability of this figure. These children tend to engage in reckless behavior and are accident-prone. They are also reluctant to explore new environments and are withdrawn in interactions with unfamiliar people. Children with disrupted attachments have usually been separated in a premature and prolonged manner from their primary attachment figure(s). These children tend to experience intense anxiety around the issue of separation and their capacity to form enduring and trusting human relationships is limited.

Several overviews of treatment and assessment programs which are based upon the theories of Bowlby and Ainsworth are available in the published literature. In the Penn State Family Intervention Pilot Project (Nezworski, Tolan, & Belsky, 1988), infants with attachment disorders were initially identified at

twelve months of age using the Ainsworth Strange Situation. Issues addressed within family therapy include: disparities between parents in household and childcare responsibilities, disagreements over parenting styles, and marital issues (including sexual difficulties and conflict resolution). At Indiana University, Bates and Bayles (1988) developed an assessment and treatment program for five and six year old children who were experiencing behavior problems as a result of attachment difficulties. (These authors, however, found that early attachment style did not predict mothers' reports of behavior problems in their five and six year olds. They discuss how environmental and family variables may affect attachment throughout the early years of a child's life.) Hopkins (1991) described a treatment regimen that involves increasing caregiver-infant synchronicity for the purpose of ameliorating avoidant attachment.

Byng-Hall (1991) utilizes Bowlby's theories in his family therapy work. He stated that the family therapist strives for interactional awareness within a family so that members have the possibility of creating new working models of attachment behavior. Liotti (1991) provided an overview of treatment for agoraphobia in a woman with insecure attachment. From the viewpoint of attachment theory, agoraphobics cannot tolerate separation from attachment figures and, in addition, have difficulty evaluating emotions related to threatened separation.

Harris and Bifulco (1991) stated, "with the advent of the 1990's, attachment theory can fairly be said to have come of age. No longer is it looked upon as primarily a variant of psychoanalysis and thus automatically suspect in scientific terms because unamenable to empirical disconfirmation." In their

Walthamstow Study, these authors empirically identified attachment-based factors that could lead to depression in women. They also addressed the issue of how early loss of an attachment figure could lead to the development of particular attachment styles, and how these particular styles contributed to vulnerability to depression in adult life. Parkes (1991) documented how difficulties with attachment and bonding early in childhood could lead to bereavement problems in adult life.

A few days prior to his death, Bowlby (1991) wrote, "nothing can give a scientist more lasting pleasure than to see his ideas utilized in well-executed and productive research." He stated that once personality development and psychopathology could be seen from an ethological perspective, enigmas that have perplexed students of human relationships could be solved. This is essentially a recapitulation of one of Bowlby's earliest theories, that the attachment behavioral system is a product of evolution and has a biological function. Bowlby stated:

> When seen in this light, the urge to keep proximity is to be respected, valued, and nurtured as making for potential strength, instead of being looked down upon, as so often hitherto, as a sign of inherent weakness. This radical shift in valuation, with its far-reaching influence on how we perceive and treat other people, especially those whose attachment needs have been and still are unmet, is, I believe, the single most important consequence of the change of conceptual framework.

CHAPTER IV

THE HUMAN-COMPANION ANIMAL BOND

Introduction

In 1991, the American Veterinary Medical Association collected data about demographics of companion animals in the United States (American Veterinary Medical Association, 1993). Surveys were sent to 80,000 randomly selected households nationwide, and 56,000 completed surveys were returned. Using these data, it was estimated that approximately 54.8 million American households (or 57.9 % of U.S. households) owned a companion animal. It was further estimated that 52.5 million dogs, 57 million cats, 11.7 million birds, and 4.9 million horses were living with American families. An additional 6.7 % of households kept other types of pets such as fish (24 million), rabbits (4.6 million), hamsters (1.3 million) and gerbils (600,000). Messent (1983) reported that 11,000 veterinarians give about 55 million consultations per year, resulting in 100 million veterinarian-client contacts per year. He further stated that an average of 1.7 family members consult a veterinarian per year compared to 1.2 to 1.3 family members who consult family physicians.

The dog is man's oldest domesticated animal companion (Messent & Serpell, 1981). Messent and Serpell defined domestication as including the care, feeding, and breeding of a specific species. Fossil remains from domesticated canids have consistently been excavated from 12,000 years ago (the preagricultural Mesolithic period) in Iraq and Israel. There is evidence,

however, that canine domestication may have occurred as early as 500,000 years ago by the Peking man.

As a domesticated animal, one of the dog's first functions may have been to serve as a camp scavenger, responsible for removal of food scraps. Savishinsky (1983) suggested that wild dogs could have been adopted by hunting tribes to familiarize hunters with the habits of their game. In this way dogs could have sensitized hunters to be more adept at stalking and hunting. A hunter who was able to mimic the habits of a canine hunter could possibly have been a more accomplished stalker. It is conceivable that early humans organized hunting parties utilizing dogs in order to lead to game or to follow them to recent kills (Messent & Serpell, 1981). Dogs may also have been used to herd and drive game into traps (Fiennes & Fiennes, 1970).

It is more difficult to trace the history of the domestication of the cat due to the fact that it's skeletal morphology is similar to that of its presumed wild ancestor (Todd, 1977). Archeological remains of the lybica group of Felis sylvestris have been found throughout the Near East and North Africa. Even at the present time, domesticated cats differ from this presumed ancestor only in the variations of texture, length, and color of the coat (Messent & Serpell, 1981). Cat remains have recently been excavated from a pre-pottery Neolithic site in Cyprus dated to around 7,000 years ago (Clutton-Brock, 1993). This find is significant in hypothesizing about the history of human beings' relationship with cats, as no fossil remains of cats have been found in this area that date prior to the first human immigration to this island. It is possible that cats were first

domesticated to assist in control of rodents, primarily in granaries (Fox, 1975), and large agrarian societies did not emerge until about 4,000 BC.

The cat was considered a sacred animal in Egypt (Clutton-Brock, 1993). Domestic cats were first presented in Egyptian pictures and paintings during the time of the New Kingdom (from 1567 BC) and the term "puss" may have been derived from the name of the Egyptian goddess Pasht (the goddess of sexuality and fertility). Egyptian cats were often adorned with jewelry and following their deaths were frequently mummified (Wastlhuber, 1991).

Human Attitudes Toward Animals

Animals and people have always been intimately connected as throughout history animals have functioned as prey, predator, parasites, competitors, beasts of burden, protectors, entertainers, and friends (Burghardt & Herzog, 1989). Animals have also served as deities and have been symbolized in art, myth, and literature. Burghardt and Herzog (1989) stated that "...the objective science of animal behavior is a much more recent development stimulated by the serious acceptance of Darwin's theory of evolution by natural selection. People began looking at animals in a new light, because to recognize essential, rather than superficial, similarities between human and nonhuman could no longer be attacked as either unscientific or sentimental." Burghardt (1985) polled subjects on their attitudes toward evolution and perception of animals. Generally his data suggested that people who accept the concept of evolution believe animals to be more similar to humans in reference to feelings,

emotions, and general behavior patterns than those individuals who refute the theory of evolution.

Value attributions toward animals are major factors influencing their treatment (Burghardt & Herzog, 1989). Baby releasers are important aspects of our attraction to animals. Juvenile characteristics seem to strengthen attachment behavior which keeps young animals close to parental figures. General, positive value attributions of human beings toward nonhuman animals include: being awkward and playful, being large, reliance upon visual and auditory (rather than olfactory) stimuli within the human range, and the tendency to bond with individual people rather than displaying an indiscriminant, generalized response to all people. Burghardt and Herzog (1989) stated that "a survey of factors that can influence our attitudes toward animals should serve to show that many of our apparently value-laden attitudes toward animals may be based on innate, biological predispositions. They may derive from our genetically evolved responses to fellow humans, or from the survival value that certain attitudes toward animals had for humans."

Kellert (1983), one of the foremost researchers in the area of attitudes toward animals, stated that the dearth of research in this area might reflect an anthropocentric worldview detached from "considerations of human relatedness and dependence on the nonhuman world." He obtained a large data base in reference to demographics and attitudes toward animals (Kellert, 1980, 1983). One (of many) of Kellert's findings was that education has a significant effect on attitudes toward animals. "Respondents of less education were characterized by a relative lack of appreciation, concern, affect, and knowledge of animals. In

contrast, the college-educated were far more protective, emotionally attached, actively involved, and factually informed about animals and the natural environment" (Kellert, 1983).

In addition, Kellert and Berry (1987) found a significant effect for gender in reference to attitudes toward animals. Women's attitudes were generally influenced by humanistic and moralistic orientations, while men's attitudes were typically more utilitarian and dominionistic. Herzog, Betchart, and Pittman (1991) obtained similar results in a study on gender and attitudes toward animals. This study utilized the Bem Sex Role Inventory (Bem, 1981) to measure sex role orientation. Feminine sex role orientation (typified by nurturance, warmth, and expressiveness) was positively correlated with a concern for animal welfare. This trend was also noted in studies examining strength of attachment to pet animals. Although pet owners as a whole scored significantly higher than did nonowners on pet affiliation measures, when mean affiliation scores for pet owners were compared between genders, women scored significantly higher than did men (Kidd & Kidd, 1989; Straede & Gates, 1993; Taggart, 1993).

Kellert (1984) also addressed the question of how children develop their attitudes toward animals. He collected data from 267 children who were in the second, fifth, eighth, and eleventh grades. Kellert was also able to identify a developmental process through the age groups in reference to the humanitarian viewpoint, which was the most prevalent viewpoint for all age groups. The needs of people were consistently placed above the needs of animals by the youngest children. They also had little regard for animal rights and animal protection. There was a noticeable increase in concern and affection for animals

by the fifth grade. In addition to feeling affection and concern for animals, eighth graders had greatly added to their base of factual information about animals. An ethical concern for animals and the environment had generally emerged by the eleventh grade.

Roles of Companion Animals

Davis and Juhasz (1985) identified several roles filled by animal companions: socialization facilitator, stress reducer, personal responsibility, and social companion. In a similar vein, Fox (1981) said, "...the pet may fulfill many needs for the adult and child alike: a companion, confidant, sibling partner in many games, an unconditionally affectionate and accepting emotional support, a link with nature, with natural, uninhibited and honest emotions and responses, a refreshing break from the vacuous impersonal and often dehumanizing human transactions." In addition, a majority of respondents who participated in a study on benefits of dog ownership (Salmon & Salmon, 1983), indicated they believed dogs provided good protection and could act as a deterrent to a potential burglar. Regardless, however, of the roles attributed to companion animals, Fox (1981) cautioned, "to value a pet (or a person) simply on the basis of his or her utilitarian function is crass 'deanimalization.'"

Messent (1982) suggested that animals can also function as "social lubricants." He found that people walking dogs were approached more often by strangers and were engaged in a greater number of, as well as longer, conversations. Rossbach and Wilson (1992) tested the hypothesis that people accompanied by dogs are viewed as being more likable. They photographed

people in different situations: alone, alone and holding flowers, or with a dog. Although not statistically significant, a trend was noticed whereby the people photographed with dogs were perceived as being more approachable than those portrayed in the other experimental conditions. Subjects who viewed the pictures also judged the people accompanied by dogs to be happier and more relaxed. Similar results were obtained by Lockwood (1983), who utilized Thematic Apperception Test (TAT) type pictures depicting people alone or positioned with animals.

Veevers (1985) pointed out that animals can also function as convenient "barriers." Many people feel threatened when relating to other people at a personal level. Veevers suggested that animals "like an unusual object d'art, may be a focus of interest and a subject of casual conversation. Indeed, next to the weather, a pet may be almost the most neutral subject of conversation."

Sussman (1985) reported on statistics compiled from a survey on the perceived effects of animal companionship. Eighty percent of pet owners stated they received more companionship from their animal companions than they did from family and friends. They also tended to view their animals as equal in importance to relatives and family members. Almost all respondents felt that animals were important for the development and socialization of children. The opinion that families should have pets while children were growing up was almost universal.

An important component in the socialization of children is learning about stages of the life cycle. VanLeeuwen (1981) suggested that "the comment that children learn about sexual behavior and procreation through observation of

animals is found like a refrain in almost every talk on companion animals." By watching animals, children may view the birth process with subsequent breast feeding. Many children are exposed to mating behavior for the first time by watching animals and this may be an early and important lesson in sexuality. VanLeeuwen cautions, however, that children must realize this is not necessarily a model for human sexuality. Robin and ten Bensel (1985) stated that by means of their associations with animals, children may learn about the reality of illness and death. "By fully experiencing the grief of losing a pet, the child learns that death is a natural part of the life process, is painful, but is tolerable and [that the emotional pain] does not last forever."

Beck and Katcher (1983) described how pets are often treated in a similar manner to human children within a family. "Like children, the animal must be continually cared for: fed and watered, kept from eating dangerous foods and objects, bathed, groomed, protected against the elements, clothed when necessary, brought to the doctor and spoken for at the doctor's." While animal companions often serve as child surrogates for those without children, in the majority of cases, pets are found in homes with children (Bulcroft, 1990). Only 15% of those who have pets live alone (Beck & Katcher, 1983). While children often initiate the acquisition of a pet, it usually falls to the female head of the household, however, to take responsibility for the feeding and maintenance of the animal. On the other hand, men in the household are more often involved in the exercising of the animal. Bulcroft (1990) mentioned that although animals are most often part of families with children, these are not the situations where

attachment is rated highest. Higher rates of attachment are oftentimes found among newlyweds, the widowed, and those who have never married.

Working within the Bowen family systems model, Cain (1985) analyzed data from 896 completed surveys from military families. Following are a few of the many statistics Cain compiled: 98% said that the companion animal was either a full family member or a close friend, 72% said their pet, usually to always, had "people status" in the family, with 39% saying always, 50% said their animals were extremely important to the family, and 46% said that they were very important to important to the family. The majority of the respondents felt that after an animal had been added to the family constellation there was an increase in family happiness and fun, increased display of affection around the animal, and increased family time together. The majority of respondents felt that animals understood what was being said to them and, therefore, confided in their pets. Most of the respondents also felt that their animals could communicate with them and were sensitive to their moods.

Animals may also play an important function even within secure families in that they may provide a safer place to try out love and hate, preferences and rivalries, independence and cooperation, and destructive or creative feelings (Bridger, 1976). Family systems theorist Murray Bowen addressed the role of the companion animal in reference to the family communication network. Bowen (1971) stated that a unit consisting of two people is inherently unstable, especially in times of stress. A third member (which could be a person, animal, or even an inanimate object) is drawn into the unit, producing a triangle, to reduce stress. Animals may become triangulated and function as objects of the

family projection process, with level of involvement being determined by the intensity and reactivity within the family (Entin, 1986). Soares (1985) stated that, based on these dynamics, one could expect the function of the family dog to vary according to the level of stability or dysfunction within a family.

Cain (1983) said that a triangulated animal often provides displays of affection, anger, or distancing. Entin (1986) found that one way to discern whether animals had been triangulated was to observe their positions within family photographs. For example, "one photograph showed a lawyer hugging his two children tightly, at a distance from his wife. The dog was in an affectionate embrace with her. A few months later, to everyone's shock, the 'happy couple' split up. He won a legal battle for joint custody of the youngsters; the dog stayed with the wife."

Cain (1983) found it was not unusual for a family member to speak to the animal within hearing distance of other family members, thereby indirectly relaying information. She also witnessed pets in apparent attempts to resolve family tension by acting silly or cute, or by actively seeking attention. Cain also cited instances where family members used the animal as a diversion during a crisis, or yelled at or hit pets instead of other family members. Veevers (1985) also commented on this process and identified this phenomenon as using the family pet as a scapegoat. She said that within disturbed families, one child is often singled out to be the scapegoat (i.e., the "identified patient") who is responsible for a variety of family ills. DeViney, Dickert, and Lockwood (1983) found that in 88% of families with pets, where children were being physically abused, animals were being abused as well.

Human-to-Animal Attachment

Attachment behaviors play a crucial role in all social animal species (Rynearson, 1978). Primary mechanisms crucial to attachment between human beings and other animals are physical closeness (i.e., proximity) and amount of time spent in interaction (Voith, 1985). Visual and tactile signals further strengthen attachment. Borrowing from the attachment theories of Bowlby and Ainsworth, Melson (1991) posited that children may employ similar mechanisms when they form attachments to both human beings and companion animals. Based on the traditional attachment literature, Melson identified four areas critical to attachment formation. These included: 1) time with, and activities directed toward, the attachment object, 2) interest in, and affect expressed toward, the attachment object (including separation and reunion responses typical of children in the Strange Situation), 3) knowledge about the attachment object, and 4) behavioral responsiveness to the attachment object. She then critiqued the child/pet attachment literature (which generally appears to meet her criteria for attachment formation, although Melson does not explicitly state this), and offered suggestions for future research, with particular attention to methodological issues.

Research has demonstrated that human-to-human touch can be therapeutically beneficial (see above, pages 30-33). Levinson (1984a) stated that tactile stimulation offers the neonate not only pleasure, but relief from anxiety. Harlow and Zimmerman (1959) found that when given a choice, infant monkeys preferred a warm, cloth surrogate "mother" (non-feeding) to a bottle-feeding, but cold, wire surrogate "mother." Levinson (1984a) stated that physical contact

releases endorphins in the nervous system that reduce anxiety. In fact, separation anxiety can be alleviated in puppies by giving them injections of opiates that are chemically similar to naturally occurring endorphins.

Levinson (1984a) suggested that human-animal physical contact offers a sense of security and safety similar to that provided by human-to-human tactile interactions. Katcher (1981), noted that the fact that the English term for a companion animal is "pet," lends strength to the assumption that touch is a critical component in the human-animal relationship. Research has demonstrated that petting dogs can significantly lower blood pressure in human beings (Friedman, Katcher, Thomas, Lynch & Messent, 1983; Vormbrock & Grossberg, 1988). Katcher, Goodman, and Friedman (1979) observed physical contact between people and dogs in the waiting room of a veterinary clinic. Eighty-nine percent of the women, and 88% of the men, engaged in tactile interactions with their animal companions. (This included idle fingering, scratching, massaging, stroking, passive body-to-body contact, and patting.) (This study is further described in Katcher, 1981.) On the average, women spent 19% of the waiting period in physical contact with their animals. Men, however, engaged in physical contact with their dogs for 35% of the time period. This finding was surprising to Katcher as he believed men generally use touch less often as a form of expression or communication than do women. He suggested that for some men, physical contact with an animal may be a "safe" and socially acceptable means through which to receive and express intimate affection in public.

Dogs, and to some extent cats, have been selected for juvenile characteristics at both the behavioral and morphological levels. Voith (1985)

stated, "if we are genetically predisposed to becoming attached to other people, particularly our children, and if animals exhibit many of the same characteristics that cause our attachment to other people, it is easy to see why people become attached to pets and, in many respects, behave and feel toward them as though the animal were a child." Morris (1977) maintained that "virtually all pet-keeping can be seen...as a form of pseudo-parentalism, with animals standing in for missing infants, either because the 'parents' are too young to have real children, or because for some reason they have had children but are now without them. These are the conditions in which pet-keeping is at its most intense."

Brickel (1985) stated there are some theories that argue for an innate attraction to animals. He offered social learning theory as an alternative explanation. Brickel said that we learn to perceive animals in a positive manner, and that love for animals is not instinctive. "We do not innately recognize any particular animal species as emotional ally or enemy, but are taught, systematically and extensively, recognition of some learned emotional taxonomy." He did say, however, that associations between people and animals are generally positive. American society values animals and the family is the main means of instilling these beliefs. The child learns to associate animal figures with the home environment (even if it is only a stuffed animal in the nursery). A child is reinforced for rudimentary and successive approaches to pets. The reinforcement may come in the form of attention, praise, or affection. The child will eventually act independently of the family and the pet will have acquired reinforcing properties of a secondary nature (after having originally been paired with positive reinforcement from the parents). Brickel explained

that operant conditioning with reference to animals occurs throughout the human life cycle:

> As individuals continue their maturation and formulate independent cognitions about the world, animals come to represent tabula rasa stimuli upon which persons inscribe their own symbolism and roles. This role-play with animals performs a more utilitarian function than earlier role-play by defining the individual's self-identity and relationships with family and society....Following this model we understand that having been associated with innumerable reinforcements, pets become unconditioned stimuli that evoke positive affective responses. Furthermore, neutral stimuli, people or objects, contiguous to animals, will, through association, in turn evoke positive affective responses and evaluations. These occurrences encourage maintenance of the human-animal bond through role-taking.

Kidd (1983) felt that children who had animals living in their home developed attachments to animals within the first year of life. She observed young children between the ages of six and twelve months. All the infants displayed positive affect when the pets entered the room, as evidenced by behaviors such as smiling. The children all tried to follow the animals around the room.

Melson (1990) hypothesized that emotional attachment to companion animals is well-established by the preschool years. She stated that it continues to develop, however, through the preadolescent period. Melson never studied a home that included both children and a companion animal where the child was

indifferent to the animal. She also found that children's strength of pet attachment was associated with empathy and feelings of competence as well as fewer behavior problems during transition periods (e.g., changing schools). She did caution, however, that there are times when children may become too attached to companion animals. She was concerned that at times of high stress or crisis, children would reject the companionship of peers in preference for animals. On the other hand, Melson also stated that children who were feeling particularly powerless and dependent could learn a sense of mastery and self-efficacy through relationships with animals. She felt that children could also learn about nurturance, and add to a sense of mastery, through associations with animals. Melson stated that the pool of those who traditionally assumed the role of the nurturant caretaker may be changing with the return of large numbers of women to the workforce and the increase in the elderly population. She further stated that learning about nurturance was an especially important lesson for young boys. Raising and caring for animals is gender-neutral, whereas traditionally the tasks of caring for babies, siblings, and elderly relations falls to female family members.

Voith (1985) suggested that the fact that many people keep their pets despite problematic behaviors is another indication that people bond with companion animals. Data were collected from 100 cases (62 dogs and 38 cats) at the University of Pennsylvania School of Veterinary Medicine. Ninety-nine percent of the owners felt that the problem in question was either serious or very serious. When clients were specifically asked why they continued to keep their pet, 55% answered with a statement of affection such as, "I love him." The

second most frequent reason given was one of responsibility, such as, "no one else would take this animal, therefore, I have to keep it." If this type of response was offered first, in most instances a statement of affection followed. Not infrequently owners would say that the animal was a family member. It was not uncommon to hear statements such as, "you wouldn't get rid of a child because it had a behavior problem, would you?"

Beck and Katcher (1983) raised the question of whether people whose pet dies experience a grieving process similar to when they lose a human companion. Cusack (1988) suggested that many pet owners experience the stages outlined by Kubler-Ross (1969) which include denial, depression, anger, guilt and, finally, acceptance. Carmack (1985) found that people often endure painful regret, crying, shock and numbness, deep sorrow, despair, mental suffering, and loneliness upon the death of a companion animal. In addition, as animals are often considered to be part of the family, family functioning can be disrupted.

Cusack (1988) suggested there is often another factor complicating the grief due to the death of a pet. This occurs when there has been a decision to euthanize. The owner must decide whether or not the quality of the animal's life is worth continuing. This is not generally a factor in human relationships. Cusack said, "with a pet...we can, quite literally, be asked to play God." Cowles (1985) stressed the importance of involving all family members, especially children, in the decision to euthanize. She said if this is not done, young children often direct extreme anger at their parents for not adequately protecting the animal, and may hold them responsible for the death of the pet.

Support for grief after the loss of a pet is often not offered by society at large. Bereavement after the death of a companion animal may be seen as a more appropriate response for children than for adults (Beck & Katcher, 1983). Many people do not understand that a pet can be a significant attachment figure. Grief for the animal may be considered inappropriate (or excessive) as the animal can easily be "replaced" (Carmack, 1985). This may be an easy solution for someone who has never valued the companionship of an animal but this suggestion often causes the bereaved owner to feel an even deeper sense of isolation and despair.

Quackenbush (1984), a pet bereavement counselor, studied pet loss grief in older citizens (specifically, persons over the age of 50). He stated, "if older pet owners have only their pets as household companions and social affiliates, an owner's emotional and/or physical health may be compromised when the pet dies." Ninety-seven percent of the subjects experienced some disruption of their daily routines (e.g., erratic eating and sleeping patterns, and diminished socialization accompanied by physical isolation). All of those who were employed experienced work-related difficulties, often taking the form of missed days.

Animal-to-Human Attachment

Domestic dogs have to some degree maintained the pack-like mentality of their possible ancestor, the wolf (Fox, 1978). Like wolves they tend to maintain a strong infant attachment in that they remain bonded to a "parent" throughout life. Domestic dogs are oriented toward, and give obeisance to, a human "alpha wolf." Within the human household, dogs gravitate toward a

dominance hierarchy that includes human members and other domesticated animals living within the same confines.

Freedman, King, and Elliot (1961) demonstrated that unless socialization to human beings occurs before the age of fourteen weeks, it is very difficult for dogs to bond with people later in their life. They raised puppies in large fields with little human contact. The puppies were brought in from the field at different ages and placed in a room with a passive person for ten minute intervals. At three weeks of age, the puppies immediately approached the human observer. If the first interaction with people was at seven weeks, it took on the average two days before the puppies made a positive approach. Puppies whose first contact with people was at fourteen weeks were so fearful they did not approach the observer even after a week's time. These puppies could only be tamed by keeping them confined to prevent escape and by feeding them only by hand so that they were in forced contact with people.

Messent and Serpell (1981) stated that the most important aspect of socialization is that it determines how a mammal will respond socially and sexually as an adult. A wolf cub raised from birth exclusively by human beings will later fail to recognize other wolves as members of the same species and, as a result, be useless for breeding. A cub allowed to stay with its mother and litter mates and given the opportunity to interact with human beings through the first six to eight weeks of its life, will later be capable of both sustaining relationships with people and functioning suitably for breeding purposes.

Sometimes difficulties with bonding to people are manifested in dogs. Mugford (1981), Voith (1981), and Washington (1981) have independently

identified the most common behavior problems in dogs for which owners seek consultation. The most frequently reported problems included dominance issues and aggression toward people and other dogs, and destructiveness as a result of separation anxiety. Borchelt and Voith (1982) suggested that obedience training may often assist in the resolution of these type of difficulties.

Possible Detrimental Psychological and Physical Health Consequences of Animal Companionship

McCulloch (1986) cautioned that companion animals may not always provide beneficial effects for people (especially those with physical or emotional difficulties). If a situation is not carefully analyzed, the addition of an animal could actually make a person's condition worse. The capabilities of an older or emotionally ill person could be overestimated. They may find the daily requirements of pet-keeping overwhelming or too tiring. The animal could come to harm if the individual is not able to properly care for it. People with brain injury, senility, or mental retardation may inadvertently provoke or injure an animal. It has also been observed that sometimes animals appear to "reject" those they are supposed to be comforting if they are given excessive attention or are required to remain in one place for long periods of time.

Another area of concern is zoonoses. It is possible for animals to transmit bacterial, viral, and fungal conditions to people (McCulloch, 1986). This is important in that many people who could benefit from animal companionship are already in a fragile or physically vulnerable state. It is also possible that an animal may be given to a person without the prior knowledge that that person is allergic to the animal.

Simon (1984) stated that there is often a psychological cost involved in owning an animal. He said this often emerges as a surprise because the decision to acquire an animal, on the surface, appears to be innocuous. Animals can develop serious behavior problems if not properly trained. As mentioned previously, this could result in aggressive behavior toward people or in destruction of property.

Bryant (1989) suggested that animal companionship may be beneficial to children but that it can also be a source of psychological discomfort. Children feel distressed when animals die or are given away, and worry when they are sick. They sometimes find taking care of animals bothersome and stressful and may worry about the safety of the pets. In addition, some children have been punished because parents think they do not treat animals with enough respect.

Salmon and Salmon (1983) interviewed 308 people from households having dogs as pets. (The total number of residents in these households was 1,063.) Only 15% of the respondents felt the dog had not lived up to their expectations, and only 6% of the total sample regretted owning a dog. Problems associated with owning dogs included the following: restrictions on travel, destruction of property, "mess" such as hair, odors, and tracked-in dirt; roaming, barking, and fighting with other dogs; veterinary expense, unwanted puppies, time required for feeding, grooming, and exercising, and the fact that dogs can frighten other people.

Quigley, Vogel, and Anderson (1983) compared perceptions and attitudes about the disadvantages of owning pets between pet owners and nonowners.

The following data were collected by means of a questionnaire from 176 owners and 181 nonowners. Nonowners identified the following as disadvantages of owning pets at a significantly higher level than did owners: restraint required, allergy problems, overpopulation, disease, reproduction problems, and the inconvenience of noise, odor, and feces. Owners only identified one disadvantage more often than did nonowners, that being the problem of shed hair. Owners, however, felt that pet ownership offered no disadvantages far more often than did nonowners ($p < .001$).

Possible Psychological and Physical Health Benefits of Animal Companionship

One of the most frequently cited studies in reference to the benefits of animal companionship was published in 1980 by Friedman, Katcher, Lynch, and Thomas. They conducted a two-year study, begun in 1977, of 92 coronary care unit patients. It appeared that social factors played a crucial role in one year survival rates. Of all variables studied, none was more significant in terms of increased rate of survival, however, than the presence of pets in the household. After one year, 28% of nonowners had died but only six percent of owners were deceased. Results were similar across the board for owners of all types of pets. Exercise from walking dogs, therefore, was not necessarily the relevant factor.

With shifting demographics, an increasingly greater amount of the national health care budget will be allocated to care for elderly citizens. Toward this end, Bustad and Hines (1983) stated that studies should be conducted to determine the possible role of animal companionship in reducing health care costs. Katcher's (1980) research suggested that elderly people who own pets are

able to live independently longer in their own homes and that they also enjoy better health. Siegel (1990) found that Medicare patients who own dogs make fewer visits to physicians than do Medicare patients who are nonowners. In addition, elderly pet owners tend to rely less upon prescription drugs, and also have fewer difficulties with dependence (Corson & Corson, 1980).

Lago, Knight, and Connell (1983), however, did not find significant differences between pet owners and nonowners in the areas of level of social activity, social satisfaction, morale, or functional health. Likewise, Robb and Stegman (1983) found no differences in reference to emotional or health-related variables between pet owners and nonowners. (In addition, this study controlled for strength of pet attachment which is addressed below.)

Empirical research addressing emotional benefits associated with animal companionship generally indicate positive findings for pet owners, or no differences when comparing pet owners with nonowners. Published findings have primarily addressed self-esteem, life satisfaction, and happiness, or depression and loneliness. One of the earliest, and probably the most widely cited, empirical studies of general emotional benefits of companion animals for elderly people is that by Mugford and M'Comisky (1975). Either budgerigars or begonias were placed with old-age pensioners who ranged in age from 75 to 81 years. At the beginning and end of the study, subjects completed questionnaires that asked about attitudes toward others and attitudes toward themselves. Unfortunately, only 60% of the subjects could be located for follow-up but the difference between the bird and begonia groups, in terms of positive benefits, was significant at less than the .02 level. Those given birds showed consistent

and significant improvement in regard to attitudes toward others and attitudes toward themselves. Bird owners had more positive attitudes about their psychological and physical health. They tended to focus less on health problems and felt more self-confident than did those participants given begonias.

Several studies have found that pet owners have higher levels of self-esteem than nonowners (Kidd & Feldman, 1981; Kale, 1992a; Davis & Juhasz, 1985; Covert, Whiren, Keith, & Nelson, 1985; Davis, 1987; Brickel, 1985). Findings in reference to positive self-esteem in children who live with pets is similar to that of data for adults. Davis (1987) conducted research on the development of self-concept with 22 preadolescents who had pets. Using Rosenberg's Perceived Self-Concept Indicators there were a total of fourteen positive, six neutral, and only two negative perceived self-concept scores. Covert, Whiren, Keith, and Nelson (1985) obtained similar results and, in addition, found that children who lived with pets were more likely to join clubs. Kale (1992a), however, cautioned that it takes more than an animal's presence alone to encourage the growth of self-esteem in a child. It also requires the guidance of responsible adults. Kale stated, "adults design and transform the meaning of an experience for children. Animals are an adjunct. It's analogous to merely bringing home a book - it does not create a high-achieving child; it's what you do with it."

Although Hyde, Kurdek, and Larson (1983) did not find differences between pet owners and nonowners in reference to level of self-esteem, they did find that pet owners had significantly higher scores than nonowners in the areas of empathy and interpersonal trust. Martinez and Kidd (1980) found that pet

owners scored significantly higher than did nonowners on measures of self-acceptance and well-being. In a study conducted by Straede and Gates (1993), cat owners had significantly lower scores, thus indicating less distress, on a measure of general psychological health (The General Health Questionnaire, Goldberg, 1972) than did nonowners. The two groups did not differ significantly, however, on measures specifically assessing depression, anxiety (both state and trait), and nurturance. In a study examining effects of pet ownership on both physical and emotional variables, Robb (1983) found that pet owners had significantly higher scores on measures of morale, number of social resources available and utilized, and physical health. The association between pet ownership and mental health was positive (although not significant) and pet owners tended to more often have an internal locus of control than did nonowners. In contrast, Friedmann, Katcher, Eaton, and Berger (1984) found no differences on several emotional variables when comparing current pet owners with former pet owners and those respondents who had never owned a pet. Variables examined included: tension, depression, anger, vigor, fatigue, confusion, and anxiety (including cognitive, somatic, state, and trait anxiety).

Several research studies have attempted to control for strength of attachment to pets when analyzing benefits of pet ownership on mental and physical health. Often, strength of attachment is influential when analyzing data from pet owners. In some studies, research subjects are classified into those with high vs low attachment by means of standardized pet attachment scales (often Lickert-type measures). For example, although Stallones (1990) found that elderly pet owners generally had higher levels of happiness and lower mortality

rates than did nonowners, depression was significantly lower among pet owners who had a strong attachment to their companion animals. Although Garrity, Stallones, Marx, and Johnson (1989) found that for elderly citizens, pet ownership alone was not associated with measures of emotional or physical health, strong attachment to a pet was associated with less depression and fewer health complaints. In addition, the strength of this finding was more prominent for respondents with a limited social support network. Two additional studies with elderly citizens (Ory & Goldberg, 1983; Connell & Lago, 1984) also found that although the presence of pets alone was not associated with increased happiness, strength of pet attachment was. Lago, Delaney, Miller, and Grill (1989) discovered that, among senior citizens, a positive attitude toward pet ownership, and animals in general (whether or not the respondents actually owned a pet), was a statistically significant predictor of morale and positive self-reports of physical health status. These authors suggested that the effect of pet ownership on self reports of health and functioning levels may be indirect. It is possible that these factors are actually influenced indirectly through improved morale accompanying pet ownership.

In contrast to studies measuring associations between pet attachment and emotional and physical health among senior citizens (which generally find a positive relationship), Stallones, Marx, Garrity, and Johnson (1990) examined data from three younger age groups (ages 21-34, ages 35-44, and ages 45-64). In their overall analyses, they found that neither pet ownership nor attachment was associated with illness, emotional distress, or negative life events and changes. They did find, however, that human network index scores were significantly and

negatively correlated with emotional distress and life changes, and pet attachment. (The human network index measured degree of social integration and included information on numbers of friends, frequency of interactions, group participation, and marital status.) The authors suggested that "socially isolated individuals may well be attached to pets to the detriment of human contacts...attachment to pets...in some situations, may in fact be detrimental." As pet owners, however, do generally tend to score more positively on measures of emotional health than do nonowners, some authors have raised the question of whether this is actually due to pet ownership per se, or whether adults who chose to acquire animals already have higher levels of self-esteem, social sensitivity, and interpersonal trust (Kidd & Feldman, 1981; Hyde, Kurdek, & Larson, 1983).

CHAPTER V

PURPOSE OF THE STUDY

In one study of a psychiatric population, 80% of the respondents indicated that their primary reason for seeking treatment was loneliness (Rosenbaum & Rosenbaum, 1973). In addition, research has indicated there are some negative emotional states commonly found to be concurrent with loneliness (e.g., lower levels of self-esteem, and higher levels of depression and alienation [see pages 14-17 above]). Fifty-seven percent of psychiatrists, 48% of psychologists, and 40% of family practice physicians who participated in a survey (the Kal Kan Company, 1986), indicated they had prescribed companion animals for their patients in the belief this would help alleviate loneliness and depression. Research generally supports the hypothesis that animal companionship provides physical and emotional benefits (e.g., higher levels of self-esteem and life satisfaction, and lower levels of depression [see pages 72-76 above]). At worst, published research indicates no differences on variables of physical and emotional health between pet owners and nonowners. One empirical study that examined the effect of animal companionship in a clinical population (in the form of animal-assisted therapy), found that subjects in a non-directive group with a dog "co-therapist" had post-study depression scores that indicated significantly more improvement than either a traditional psychotherapy group (also with a dog "co-therapist") and a control group (Folse, Minder, Aycock, & Santana, 1994).

The question has been raised whether the higher levels of self-esteem, happiness, and satisfaction with life exhibited by pet owners are actually related to animal companionship, per se. Perhaps these particular people would score higher on these variables whether or not they owned pets (Kidd & Feldman, 1981; Hyde, Kurdek, & Larsen, 1983). Research indicates that adults with a secure attachment style tend to score higher on emotional health measures (i.e., indicating less psychological distress) than do people with an insecure attachment style (Bartholomew, 1990; Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987). Bartholomew (1990) stated that two of the three types of insecure attachment styles she identified (i.e., preoccupied and fearful), are particularly prone to loneliness and depression due to strong dependency needs and lack of attachment figures. In addition, research has demonstrated that emotional loneliness is strongly associated with lack of intimacy and lack of opportunity for nurturance (Russell, Cutrona, Rose, & Yurko, 1984). The vast majority of pet owners in two studies that examined perceived roles of pets within family and support systems, indicated that they considered their pets to be family members and friends (Cain, 1985; Stallones, Marx, Garrity, & Johnson, 1988). The question may, therefore, be asked whether a companion animal can fulfill the role of an attachment figure and, thus, help alleviate emotional loneliness. For the prescription of pets to be considered a viable adjunctive measure for the alleviation of loneliness (and, perhaps, the commonly concurrent difficulties with depression, low self-esteem, and dissatisfaction with the quality of life), the following issue must be addressed and examined: Do people with insecure attachment styles who own pets have scores on emotional health

measures that are significantly higher (i.e., less distressed) than people with similar attachment styles who do not own pets? This question, then, raises the following issues: 1) Is a similar process involved in attachment formation with both human beings and companion animals?, and 2) Is there any relationship between a person's attachment style to other people and their ability to affiliate with companion animals? Melson (1991), borrowing from the attachment theories of Bowlby and Ainsworth, believed that for children a similar process was involved in their attachment formation with both people and pets.

Several studies have found that generally, women appear to experience loneliness more often than do men (Blai, 1989; Ellison, 1978; Svanborg, 1979-1980; Wood, 1978; Clark & Anderson, 1980; Kivett, 1979; Hoferek, 1981; Brennan, 1982). In addition, Ainsworth (1991) proposed that women may be genetically predisposed toward becoming more attached to, and more dependent upon, attachment figures then men. Overholser (1992) was able to support this hypothesis. As a group, women had significantly higher scores on the Dependent Personality Style Scale then did the male subject group. He also found strong relationships between interpersonal dependency and self-esteem, depression, and loneliness (with higher levels of dependency being associated with lower self-esteem, and higher levels of depression and loneliness).

Gender may also be a factor that influences strength of attachment to companion animals. Three studies found that although pet owners as a whole scored significantly higher than did nonowners on pet affiliation measures (Kidd & Kidd, 1989; Taggart, 1993; Straede & Gates, 1993), when mean affiliation scores for pet owners were compared between the genders, women scored

significantly higher than did men. In addition, Herzog, Betchart, and Pittman (1991) found significant gender differences in reference to attitudes toward animals and suggested this is due to different cognitive and emotional orientations toward animals. Generally, women's attitudes were more humanitarian and moralistic in nature, while men's attitudes were more utilitarian and dominionistic.

If, therefore, women tend to experience higher levels of loneliness, in general have a style that may be more dependent upon attachment figures, and their attitude toward animals is generally strongly humanitarian (i.e., affectionate toward pets), it is possible that pet ownership may be even more beneficial for them than for men. This question could be critical as there are more women than men in the elderly population, and this population is being allocated an increasingly greater proportion of the national health care budget (Bustad & Hines, 1983). Research has indicated that elderly people who own pets tend to enjoy better physical health, are able to remain longer in their own homes, make fewer physician visits, and tend to rely less on prescription drugs than do nonowners (Katcher, 1980; Siegel, 1990; Corson & Corson, 1980).

This study was generally exploratory in nature. The following issues were considered to be of interest:

1) Is attachment style related to self-report measures addressing the issues of loneliness, depression, self-esteem, and life satisfaction?

2) Is attachment style related to the ability to affiliate with companion animals?

3) Do people with various attachment styles who own pets, have scores on emotional health measures that are significantly "healthier" than people with similar attachment styles who do not own pets?

4) Is the ability to affiliate with companion animals related to self-report measures of loneliness, depression, self-esteem, and life satisfaction?

5) Is gender a significant factor in proportional representation within the various categories of attachment style, the ability to affiliate with companion animals, and ratings on measures of loneliness, depression, self-esteem, and life satisfaction?, and

6) Is it possible that pet ownership may be more beneficial for women then men in terms of emotional health factors?

CHAPTER VI

METHODS AND PROCEDURES

Subjects

Data were collected from 351 students enrolled in undergraduate, liberal arts classes at the University of Tennessee during the second summer session of 1995. Participation was voluntary and any person who was interested was invited to complete the study questionnaires. There were no restrictions in terms of age, gender, marital status, race or ethnic background, major field of study, or history of pet ownership. Whether extra-credit was offered was at the discretion of the instructor.

Procedure

Participants were told they would be participating in a study examining the relationship between people's attachment style to other people and to pet animals, and whether these factors, in turn, appeared to be related to various emotional states. Both pet owners and nonowners were asked to fill out six brief questionnaires and a general information form. A cover letter, outlining the purpose of the study, was attached to the front of the questionnaires. The questionnaires included: 1) Adult Attachment Scale (Bartholomew, 1990), 2) Affiliation with Companion Animals Scale (Taggart, 1993), 3) Beck Depression Inventory (Beck, A. T., 1978), 4) Revised UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980), 5) Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffen, 1985), and 6) Index of Self-esteem (Hudson, 1982).

The questionnaires were presented in a randomized order to prevent an effect from order of presentation. It was estimated that the entire procedure would take no longer than fifteen to twenty minutes and data were generally collected either at the beginning or the end of a class session in a group setting. No identifying information (other than demographics) was requested in the study materials, thereby ensuring anonymity.

Instruments

Adult Attachment Scale

Attachment style was determined using the Adult Attachment Scale (Bartholomew, 1990). (See Appendix A.) This scale includes four brief descriptions of how people feel they relate to others and the importance of having close emotional relationships with other people. Subjects were asked to select one of the four options. The four attachment styles are derived from combinations of a person's self-image (positive or negative), and a person's image of others (positive or negative). Individuals with a secure attachment have positive images of both self and others. People with a dismissing style have a positive self-image, but a negative image of (i.e., are detached from) others. Individuals who are preoccupied with intimate relationships have a positive image of other people, but a negative self-image. People who are fearful of intimate relationships have negative images of both self and others. Alpha coefficients computed to assess the reliability of the prototype groups ranged from .87 to .95 (Bartholomew & Horowitz, 1991).

Affiliation with Companion Animals Scale

The Affiliation with Companion Animals Scale (Taggart, 1993) is a seven point Likert scale with sixteen items. (See Appendix B.) The scale has one primary factor that captures aspects of the original construct of affiliation with pets used in designing the scale. This construct included the ability to project human needs and emotions onto animals and to derive comfort and pleasure from these projections, while being willing to provide for pets in a responsible manner. This factor has an alpha of .86. An eigenvalue of 5.6 accounts for 30% of the variance.

Beck Depression Inventory

The Beck Depression Inventory (Beck, A. T., 1978) has 21 items (each with four choices, rated 0 to 3 in terms of intensity of the item) that describe specific manifestations of depression such as somatic preoccupation, vegetative symptomatology (i.e., disturbances of sleep, appetite, and sex drive), energy/activity level, suicidal ideation, and disturbances of cognition and affect. (See Appendix C.) The BDI was originally published in 1961 and revised in 1978. The alpha coefficient of the revised version of the BDI is .86 (Beck & Steer, 1984).

Revised UCLA Loneliness Scale

The Revised UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980) is a 20 item scale. (See Appendix D.) Subjects are asked to indicate whether they experience the descriptions in each item often, sometimes, rarely, or never. The authors of this scale conceptualized loneliness as a unidimensional construct

that varied primarily in terms of intensity and frequency. Internal consistency has been reported with an alpha of .94.

Satisfaction with Life Scale

The Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) is a seven point Likert scale with five items. (See Appendix E.) The authors' intention in designing this scale was to tap into an individual's assessment of the quality of their life. The alpha for internal consistency is .87 and test-retest reliability after two months is .82.

Index of Self-esteem

The Index of Self-esteem (Hudson, 1982) is a Likert scale with 25 items. (See Appendix F.) This scale was designed to measure the degree, magnitude, or severity of problems with self-esteem. The alpha for internal consistency is .93 and test-retest reliability after two hours is .92.

General Information Form

The general information form (see Appendix G) asked participants for information on age, gender, marital status, whether or not they had children, history of pet ownership (e.g., if they had a pet at the time of the study, if they did not have a pet whether they had had one in the past, if they had no pet whether they would have one if circumstances permitted, reasons nonowners did not have a pet), what type of pet they would consider ideal and why, and perceived level of loneliness (given choices of frequency of such feelings).

Cover Letter to Study Participants

The Cover Letter to Study Participants (see Appendix H) explained the purpose of the study and informed subjects they would remain anonymous as no identifying information other than general demographics would be collected. Subjects were also informed that there were no foreseeable risks involved with participation. The letter explained that the return of the completed questionnaires constituted consent to participate.

Statistical Design

A series of analyses was conducted using data obtained from the six questionnaires described above and the general information form.

A) A series of correlations was conducted among the variables of affiliation with companion animals, depression, loneliness, satisfaction with life, and self-esteem.

B) A series of chi square comparisons was made to determine proportional representation for the following variables: 1) distribution of men and women within the various attachment style categories, 2) distribution within attachment style categories for current relationship status, 3) distribution within attachment style categories for history of pet ownership, 4) distribution within attachment style categories for concept of ideal pet species, and 5) distribution by gender for history of pet ownership.

C) Three-way Anovas with attachment style, gender, and history of pet ownership as the independent variables, and affiliation with companion animals, depression, loneliness, satisfaction with life, and self-esteem as dependent variables. Interaction and main effects were evaluated.

Power Analysis

Significance level was set a priori at $p < .05$. Prior to data collection, a power analysis was conducted and criteria selected were a medium effect size (f=.25) and power of at least .90. (Cohen, 1977). A high degree of power was desirable to protect against, and account for, the fact that the number of subjects in each cell was likely to be uneven (particularly in analyses with attachment style as a variable). It was determined that the criteria selected for effect size and power could be met with a sample size of 350 subjects.

CHAPTER VII

RESULTS

Results of the various analyses will be presented in the following order: a) demographic data; b) correlations among affiliation with companion animals, depression, loneliness, satisfaction with life, and self-esteem; c) findings in reference to attachment style, including proportional representation by gender, relationship status, and history of pet ownership within attachment style categories; d) three-way Anovas with attachment style, gender, and history of pet ownership as the independent variables, and affiliation with companion animals, depression, loneliness, satisfaction with life, and self-esteem as dependent variables, and e) summary of findings.

Demographic Data

Data were collected from 351 subjects who were undergraduate students enrolled in liberal arts classes at the University of Tennessee. One hundred thirty-five (39%) of the subjects were male and 215 (61%) were female. (One participant did not provide information about gender.) The age range of the subjects was 18 to 61 years, with a mean age of 24.1 (standard deviation of 6.36). (See Table 2.)

In reference to marital status, 52 (15%) of the participants indicated they were married, 28 (8%) reported they were living with a significant other, 247

Table 2

Demographic Data
(N=351)

Gender	female:	n=215	(61%)
	male:	n=135	(39%)
	no information:	n=1	(<1%)
Age	range:	18 to 61 years	
	mean:	24.1 years	
	SD:	6.36	
	median:	22 years	
Marital Status	married:	n=52	(15%)
	living with significant other:	n=28	(8%)
	single:	n=247	(70%)
	divorced:	n=18	(5%)
	widowed	n=1	(<1%)
	no information:	n=5	(5%)
In Committed Relationship			
	yes:	n=193	(55%)
	no:	n=138	(39%)
	no information:	n=20	(6%)
Have Children	yes:	n=47	(13%)
	no:	n=301	(86%)
	no information:	n=3	(<1%)
Number of Children	range:	0 to 6	
	mean:	.22	
	SD:	.68	
	median:	0	
Self-perceived frequency for feeling lonely			
	1) one day a month or less:	n=165	(47%)
	2) about 2 or 3 days a month:	n=87	(25%)
	3) about one day a week:	n=62	(18%)
	4) about 2 to 5 days a week:	n=23	(6%)
	5) almost daily:	n=12	(3%)
	no information:	n=2	(<1%)

(table continues)

Table 2, continued

History of Pet Ownership		
own pet at present:	n=170	(48%)
owned pet in the past:	n=170	(48%)
never owned a pet:	n=11	(4%)
Reason Do Not Own a Pet (for nonowners)	N=181	
lease restrictions:	n=65	(36%)
no interest:	n=16	(9%)
not enough time:	n=12	(7%)
not enough space:	n=12	(7%)
cost:	n=8	(4%)
too much responsibility:	n=5	(3%)
allergies:	n=3	(2%)
miscellaneous:	n=22	(12%)
(e.g., messy, fleas, travel too often, young children, roommate does not want a pet, pet died and has not been replaced, etc.)		
no information:	n=38	(20%)
Ideal Pet Species		
dog:	n=190	(54%)
cat:	n=73	(21%)
dog or cat:	n=28	(8%)
fish:	n=11	(3%)
bird:	n=6	(2%)
horse:	n=5	(1%)
miscellaneous:	n=10	(3%)
(includes amphibians/reptiles, rodents, cattle, pigs, primates)		
no information:	n=28	(8%)

(70%) denoted they were single, 18 (5%) said they were divorced, and one person stated she was widowed (<1%). (Five subjects did not indicate marital status.) One hundred ninety-three (55%) participants reported they were presently in a committed relationship, 138 (39%) indicated they were not, and 20 (6%) subjects did not provide this information. Of the 348 subjects who supplied information pertaining to children, 47 (14%) indicated they had children, and 301 (86%) reported they did not. The range for number of children was zero to six, with a median of zero.

Participants were asked to evaluate their self-perceptions of how often they felt lonely. One-hundred sixty-five (47%) subjects reported they felt lonely one day a month or less, and 87 (25%) said they felt lonely about two to three days a month. Sixty-two (18%) participants indicated they experienced loneliness about one day a week, and 23 (6%) said they felt lonely about two to five days a week. Twelve individuals (3%) reported they felt lonely almost daily. Two participants did not provide information on this question.

One-hundred seventy (48%) study participants indicated they owned a pet at the time of data collection. The same number of individuals reported they had lived with a companion animal in the past, but were not at the time of the study. Eleven subjects (4%) said they had never had a pet. Individuals from the last two categories were asked why they did not have a pet at present. Sixty-five subjects (36%) said this was due to lease restrictions, 16 (9%) said they had no interest, 12 (7%) felt they did not have enough time, and 12 (7%) felt they did not have enough space to accommodate a pet. Eight individuals (4%) stated that keeping a pet was too expensive, five (3%) said it was too much responsibility,

and three (2%) participants reported they did not have a pet due to allergies. Twenty-two subjects (12%) provided miscellaneous reasons (e.g., messy, fleas, travel too often, young children, roommate does not want a pet, pet died and has not been replaced), and 38 participants (20%) provided no information in this area.

Participants were asked their opinion of what they felt would be the ideal species for a pet. Following is a breakdown of information provided: a) dog, n=190 (54%); b) cat, n=73 (21%); c) dog or cat, n=28 (8%); d) fish, n=11 (3%); e) bird, n=6 (2%); f) horse, n=5 (1%), and g) miscellaneous (including amphibians/reptiles, rodents, cattle, pigs, primates), n=10 (3%). Twenty-eight individuals (8%) did not provide this information.

Study participants were also asked why they felt a particular species would make the ideal pet. Two hundred ninety-one participants (83% of subject pool) identified dogs and/or cats as the ideal pet species. Disposition or personality characteristics was the most commonly cited reason for choosing both these animal types (mentioned by 65% of those choosing dogs, and 74% of those choosing cats). The second most frequent reason given by dog fanciers (33% of those preferring dogs) was the fact that they viewed this species as intelligent, obedient, and easy to train. (See Table 3 for most commonly cited reasons.) The second most common reason given by individuals who thought cats were the ideal pet species (54% of those who chose cats) was based upon the perception that these animals are easy to care for, neat and clean, and low maintenance. (See Table 4 for most frequent reasons). (Reasons given by individuals who chose other animal types as the ideal species, and examples of

Table 3

Most Commonly Cited Reasons For
The Dog as the Ideal Pet Species
(218 subjects chose dogs as ideal, or co-ideal with cats)

1)	disposition/personality characteristics (e.g., loyal, friendly, kind, sensitive, affectionate, loving, playful, entertaining, etc.)	n=141	(65%)
2)	intelligent, obedient, easy to train	n=71	(33%)
3)	used to them, had them growing up	n=45	(21%)
4)	size (preferences expressed for small, medium, and large)	n=38	(17%)
5)	good companion	n=37	(17%)
6)	like them, love them	n=26	(12%)
7)	easy to care for, clean	n=24	(11%)
8)	protective, aggressive, good for security	n=20	(9%)
9)	beautiful, cute	n=18	(8%)
10)	cuddly, furry	n=14	(6%)
11)	can engage them in various activities (e.g., running, swimming, fetching, hunting, teaching them tricks, etc.)	n=14	(6%)
12)	something to give attention to	n=9	(4%)
13)	they like to get attention	n=6	(3%)
14)	not allergic to them	n=4	(2%)
15)	no information provided	n=10	(5%)
16)	miscellaneous	n=57	(26%)

Table 4

Most Commonly Cited Reasons For
The Cat as the Ideal Pet Species
(101 subjects chose cats as ideal, or
co-ideal with dogs)

1)	disposition/personality characteristics (e.g., loving, affectionate, sensitive, loyal, sweet, curious, friendly, playful, etc.)	n=75	(74%)
2)	easy to care for, neat and clean, low maintenance	n=55	(54%)
3)	intelligent	n=30	(30%)
4)	soft, cuddly, furry	n=24	(24%)
5)	beautiful, cute	n=13	(13%)
6)	like them, love them	n=10	(10%)
7)	used to them, had them growing up	n=9	(9%)
8)	good companion	n=6	(6%)
9)	size	n=6	(6%)
10)	no information provided	n=3	(3%)
11)	miscellaneous	n=37	(37%)

miscellaneous reasons why respondents felt dogs or cats were the ideal pet, are included in Appendix I.)

Correlations Among Affiliation with Companion Animals, Depression, Loneliness, Satisfaction with Life, and Self-esteem

Scales used for these correlations include: Affiliation with Companion Animals (Taggart, 1993), Beck Depression Inventory (Beck, A. T., 1978), Revised UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980), Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffen, 1985), and Index of Self-esteem (Hudson, 1982). Affiliation with companion animals was significantly correlated with loneliness ($r = -.15$, $p < .004$), self-esteem ($r = -.16$, $p < .003$), and satisfaction with life ($r = .11$, $p < .05$). (See Table 5.) Higher scores on the loneliness and self-esteem measures indicate increased difficulty with those particular emotional constructs. Stronger affiliation with companion animals was, therefore, associated with lower levels of loneliness, and higher levels of self-esteem and satisfaction with life. The correlation between affiliation with companion animals and depression was not significant ($r = -.05$, $p < .4$).

In addition, loneliness was significantly correlated with depression ($r = .56$, $p < .00001$), satisfaction with life ($r = -.56$, $p < .00001$), and self-esteem ($r = .66$, $p < .00001$). Depression was significantly correlated with satisfaction with life ($r = -.59$, $p < .00001$), and self-esteem ($r = .6$, $p < .00001$). Satisfaction with life and self-esteem were also significantly correlated ($r = -.56$, $p < .00001$).

Table 5

Correlations Among Affiliation with Companion Animals, Depression, Loneliness, Satisfaction with Life, and Self-esteem

Variable 1	Variable 2	Correlation	P value
An.Aff.*	Loneliness	-.15	$p < .004$
An.Aff.	SWL*	.11	$p < .05$
An.Aff.	Self-esteem	-.16	$p < .003$
An.Aff.	Depression	-.05	$p < .4$ (NS)
Loneliness	Depression	.56	$p < .00001$
Loneliness	SWL	-.56	$p < .00001$
Loneliness	Self-esteem	.66	$p < .00001$
Depression	SWL	-.59	$p < .00001$
Depression	Self-esteem	.6	$p < .00001$
SWL	Self-esteem	-.56	$p < .00001$

*Note: An.Aff. is an abbreviation for Affiliation with Companion Animals
SWL is an abbreviation for Satisfaction with Life

Attachment Style

Attachment style was determined through the use of the Adult Attachment Scale (Bartholomew, 1990). A contingency table was employed to examine the proportional representation of men and women within the various attachment style categories. (See Table 6.) One hundred fifty-six (45%) subjects endorsed a secure attachment style, 101 (29%) a fearful attachment style, 36 (10%) a preoccupied attachment style, and 55 (16%) a dismissing attachment style. There were significantly more women than would be expected in the fearful attachment category (70% were women), and significantly more

Table 6

Attachment Style by Gender

Gender	Attachment Style: Secure	Fearful	Preoccupied	Dismissing	Totals
Female	94[a] 95.48[b] (60%)[c]	71 61.82 (70%)	22 22.03 (61%)	26 33.66 (47%)	213 61%
Male	62 60.51 (40%)	30 39.18 (30%)	14 13.97 (39%)	29 21.34 (53%)	135 39%
Totals	156 45%	101 29%	36 10%	55 16%	348 100%

Note: [a] - number of subjects obtained
[b] - number of subjects expected
[c] - percentage of subjects obtained within attachment style category

Chi square (df = 3): $X^2 = 8.07$; $p < .05$

men than would be expected in the dismissing attachment category (53% were men), X^2 (3) = 8.07, $p < .05$.

Contingency tables were also used to evaluate the proportional representation within attachment style groups of relationship status of study participants (both whether or not subjects were in a committed relationship, and the current relationship status). Within the attachment style categories, distribution of those in vs not in committed relationships was significantly discrepant from what would be expected, X^2 (6) = 14.9, $p < .03$. Within the secure group, more individuals than would be expected (68% of category subjects) were in committed relationships at the time of data collection, while in both the fearful (48%) and preoccupied (50%) groups, fewer people than would be expected were in committed relationships. Numerical distribution in the dismissing group was not significantly different than would be expected. (See Table 7.) In reference to marital status, proportional representation within attachment style categories was not significantly different than would be expected, X^2 (15) = 18.16, $p < .3$.

When examining history of pet ownership (own pet at present, owned pet in the past, and never owned a pet) and attachment style in a contingency table, proportional distribution was not significantly different than would be expected, X^2 (6) = 5.3, $p < .6$. In addition, when the concept of ideal pet species by attachment style was evaluated, proportional distribution was not significantly different than would be expected, X^2 (24) = 28.53, $p < .3$.

Table 7

Proportional Representation Within Attachment Style Categories
Of Whether or Not Subjects Were in a Committed Relationship

	Attachment Style				
	Secure	Fearful	Preoccupied	Dismissing	
In Relationship					Totals
Yes	100[a] 85.8[b] (68%)[c]	47 56.1 (48%)	16 19.8 (50%)	29 30.3 (55%)	192 58%
No	46 61.2 (32%)	51 40.0 (52%)	16 14.1 (50%)	24 21.6 (45%)	137 42%
Totals	146 44%	98 30%	32 10%	53 16%	329 100%

Note: [a] - number of subjects obtained
[b] - number of subjects expected
[c] - percentage of subjects obtained within attachment style category

Affiliation with Companion Animals as the Dependent Variable

Using attachment style, gender, and history of pet ownership (present owner or past owner) as independent variables, a triple interaction effect was not in evidence in the area of affiliation with companion animals, F (10, 321) = 1.64, $p < .1$. (Note: Although data on history of pet ownership were collected using three categories [own pet at present, owned pet in the past but not at present, and never owned a pet], comparisons were only examined between present pet owners [n=170] and past pet owners [n=170] as there were so few subjects who had never owned a pet [n=11]. It should also be kept in mind that when attachment style is utilized as a variable in analyses, this small number of participants [4% of the subject pool] would be divided among four categories. Analyses using these few data points in a separate category would likely not be meaningful.) An interaction effect did occur when gender and history of pet ownership were evaluated as independent variables, F (1, 324) = 5.54, $p < .02$. (See Table 8.) Female pet owners had a significantly higher mean group score than did male pet owners on the animal affiliation measure. A comparison of mean group scores for female and male past owners, however, was not significant. In addition, female pet owners had a significantly higher mean group score on the animal affiliation measure than did women who had owned pets in the past. This was not the case, however, for men (i.e., the comparison between the mean group score for male present pet owners was not significantly different than that for male past owners.)

Table 8

Affiliation with Companion Animals with
Gender and History of Pet Ownership
As Independent Variables
(means and standard errors)

	History of Pet Ownership	
	Present Owners	Past Owners
Gender		
Female	95.3[a] (1.3) (n=117)	84.4[b] (1.5) (n=91)
Male	85.5[b] (2.0) (n=53)	81.1[b] (1.6) (n=78)

Note: Means with different superscripts differ, $p < .05$

An evaluation of proportional representation for history of pet ownership by gender, using a contingency table, was also of interest. (See Table 9.) Significantly more present pet owners than would be expected were women (69% of present pet owners), and more of the past owners than would be expected were men (46% of past owners), X^2 (1) = 8.03, $p < .005$.

Interaction effects were not found when attachment style was used as an independent variable with gender or history of pet ownership. A main effect,

Table 9

History of Pet Ownership
by Gender

	History of Pet Ownership		
	Present Owners	Past Owners	
Gender			Totals
Female	117[a] 104.3[b] (69%)[c]	91 103.7 (54%)	208 61%
Male	53 65.7 (31%)	78 65.3 (46%)	131 39%

Note: [a] - number of subjects obtained
[b] - number of subjects expected
[c] - percentage of subjects obtained within the attachment style category

Chi square (df = 1): $X^2 = 8.03$, $p < .005$

however, was in evidence for attachment style, F (3, 324) = 3.02, $p < .03$. (See Table 10.) The four attachment style categories differed significantly on the animal affiliation measure. To compare level of affiliation (group means) between groups, t-tests were used. (Family-wise protected, Student's t-tests were employed for all a posteriori analyses.) The fearful group (which had the highest affiliation level) had a significantly higher level of affiliation with companion animals than did both the dismissing (third highest) and the

Table 10

Affiliation with Companion Animals
By Attachment Style Category
(means and standard errors)

Attachment Style			
Secure (n=156)	Fearful (n=102)	Preoccupied (n=36)	Dismissing (n=55)
$87.7^{a,b}$ (1.2)	90.6^{a} (1.5)	81.7^{c} (2.6)	$83.4^{b,c}$ (2.1)

Note: Means with different superscripts differ, $p < .05$

preoccupied (lowest affiliation) groups. The secure group (with the second highest affiliation level) had a significantly higher level of affiliation with companion animals than did the preoccupied group.

Depression as the Dependent Variable

When evaluating depression, a triple interaction effect was not found when attachment style, gender, and history of pet ownership were employed as independent variables, F (10, 321) = 1.28, $p < .3$. An interaction effect was in evidence, however, when attachment style and history of pet ownership were used as independent variables, F (3, 324) = 3.80, $p < .02$. (See Table 11.) Present pet owners in the fearful attachment style group reported significantly

Table 11

Depression with
History of Pet Ownership and Attachment Style
As Independent Variables
(means and standard errors)

	History of Pet Ownership	
	Present Owners	Past Owners
Attachment Style		
Secure	4.8[a] (.7) (n=79)	5.0[a] (.7) (n=73)
Fearful	8.4[b] (.9) (n=52)	11.8[c,d] (.9) (n=48)
Preoccupied	14.1[d] (1.5) (n=16)	9.3[b,c] (1.4) (n=19)
Dismissing	6.0[a,b] (1.3) (n=22)	5.3[a] (1.2) (n=29)

Note: Means with different superscripts differ, $p < .05$

less difficulty with depression than did past owners in the same group ($p < .01$). Fearful pet owners also had a significantly lower mean group score on the depression measure than did preoccupied owners ($p < .01$). It is interesting to note that present pet owners in the preoccupied group reported significantly more difficulty with depression than did past owners in the preoccupied group. This was the reverse of the pattern found with the fearful attachment group. Within both the secure and dismissing groups, there was no apparent relationship between history of pet ownership and level of depression. While there was an interaction effect for attachment style and history of pet ownership, a main effect was found for attachment style, (F [3, 324] = 22.32, $p < .001$), but not for history of pet ownership. There was also no main effect for gender when evaluating depression.

Loneliness as the Dependent Variable

A triple interaction effect was not in evidence for loneliness when attachment style, gender, and history of pet ownership were employed as independent variables, F (10, 321) = .55, $p < .9$. Main effects were found, however, for both attachment style and gender. Using data from the Revised UCLA Loneliness Scale, the secure attachment group endorsed significantly less difficulty with loneliness than did the other three attachment groups, and the dismissing attachment group gave evidence of significantly less distress than both the fearful and preoccupied groups (F [3, 321] = 33.08, $p < .001$). (See Table 12.) Data from the subjects' self-perceptions for frequency of feeling lonely (obtained from the General Information Form) were also analyzed by

Table 12

Loneliness by Attachment Style Category
(Revised UCLA Loneliness Scale)
(means and standard errors)

Attachment Style			
Secure (n=156)	Fearful (n=102)	Preoccupied (n=36)	Dismissing (n=55)
31.7^{a} (.7)	42.2^{c} (.9)	43.4^{c} (1.5)	38.1^{b} (1.3)

Note: Means with different superscripts differ, $p < .05$

attachment style category. (Refer to Table 2.) It was interesting that the pattern for significant differences among attachment category mean group scores was the same as that obtained using data from the Revised UCLA Loneliness Scale. (See Table 13.) Comparisons between categories yielded the following values: 1) secure < dismissing, t (209) = 2.14, $p < .05$; 2) dismissing < fearful, t (155) = 3.94, $p < .001$, and 3) fearful not significantly different than preoccupied, t (136) = 1.25, $p < .3$. In reference to the main effect for gender, women had a significantly less distressed mean group score on the loneliness measure than did men, F (1, 321) = 8.05, $p < .005$. (See Table 14.)

Table 13

Self-perceptions for Frequency of Feeling Lonely
(data from the General Information Form)
(means and standard deviations)

Attachment Style			
Secure (n=156)	Fearful (n=102)	Preoccupied (n=36)	Dismissing (n=55)
1.51^{a} (.78)	2.45^{c} (1.22)	2.75^{c} (1.28)	1.78^{b} (.91)

Note: means with different superscripts differ, $p < .05$

Table 14

Loneliness by Gender
(means and standard errors)

Gender	
Female (n=215)	Male (n=135)
35.8^{a} (.7)	38.9^{b} (.9)

Note: Means with different superscripts differ, $p < .05$

Satisfaction with Life as the Dependent Variable

In the area of satisfaction with life, there was no evidence of a triple interaction effect when attachment style, gender, and history of pet ownership were utilized as independent variables, F (10, 321) = 1.25, $p < .3$. Although the p value did not reach statistical significance for an interaction effect using attachment style and history of pet ownership as independent variables, it did approach significance, F (3, 324) = 2.53, $p < .06$. (See Table 15.) Present pet owners in the fearful attachment category had a "healthier" mean group life satisfaction score than did both past owners in the fearful category ($p < .05$), and present pet owners in the preoccupied category ($p < .01$). Although a main effect was not found for history of pet ownership, a main effect was in evidence for attachment style, F (3, 324) = 22.37, $p < .001$. (See Table 16.) Both the secure and dismissing attachment categories had significantly higher (i.e., less distressed) mean group scores than did the fearful and preoccupied categories.

Self-esteem as the Dependent Variable

There was no triple interaction effect found in reference to self-esteem using attachment style, gender, and history of pet ownership as independent variables, F (10, 319) = .64, $p < .8$. There was a main effect, however, for attachment style, F (3, 319) = 26.39 $p < .001$. (See Table 17.) The secure and dismissing attachment style categories had mean group self-esteem scores that indicated significantly less distress than did both the fearful and preoccupied style categories. Main effects were not found for either gender or history of pet ownership.

Table 15

Satisfaction with Life with
Attachment Style and History of Pet Ownership
As Independent Variables
(means and standard errors)

	History of Pet Ownership	
	Present Owners	Past Owners
Attachment Style		
Secure	26.3[a] (.7) (n=79)	26.0[a] (.7) (n=73)
Fearful	22.4[b,c] (.9) (n=52)	19.4[d] (.9) (n=48)
Preoccupied	17.3[d] (1.6) (n=16)	21.3[c,d] (1.4) (n=19)
Dismissing	25.6[a] (1.3) (n=22)	25.0[a,b] (1.2) (n=29)

Note: Means with different superscripts differ, $p < .05$

Table 16

Satisfaction with Life
By Attachment Style Category
(means and standard errors)

Attachment Style			
Secure (n=156)	Fearful (n=102)	Preoccupied (n=36)	Dismissing (n=55)
26.2^{a} (.5)	20.9^{b} (.6)	19.3^{b} (1.0)	25.5^{a} (.8)

Note: Means with different superscripts differ, $p < .05$

Table 17

Self-esteem by Attachment Style Category
(means and standard errors)

Attachment Style			
Secure (n=156)	Fearful (n=102)	Preoccupied (n=36)	Dismissing (n=55)
61.4^{a} (1.6)	82.4^{b} (2.0)	87.0^{b} (3.3)	65.5^{a} (2.7)

Note: Means with different superscripts differ, $p < .05$

Summary

Significant interaction and main effects were found in reference to attachment style. In the areas of depression and satisfaction with life, interesting interaction effects occurred when attachment style and history of pet ownership were utilized as independent variables. Fearful pet owners had significantly "healthier" mean group scores on the depression and life satisfaction measures than did preoccupied pet owners ($p < .01$). In addition, pet owners in the fearful attachment category had mean group scores that indicated significantly less distress in the areas of depression ($p < .01$) and life satisfaction ($p < .05$) than did mean group scores for fearful past pet owners. Preoccupied pet owners, on the other hand, had a mean group score on the depression measure that was significantly more distressed than that of the preoccupied past pet owners. (Although the significance value for the interaction effect in the area of life satisfaction did not quite reach significance, $p < .06$, the reported mean group score differences, using family-wise protected, a posteriori, *t*-tests, were significant.)

Mean group scores for the secure and dismissing attachment style categories were significantly less distressed than were those for both the fearful and preoccupied attachment categories on the measures of depression, loneliness, satisfaction with life, and self-esteem. A main effect also occurred for attachment style in the area of affiliation with companion animals. Affiliation with companion animals was highest for the fearful group, and was significantly higher than the affiliation levels for both the dismissing group (with the third highest level), and the preoccupied group (which had the lowest level). The

secure group (with the second highest affiliation level) had a significantly higher level of affiliation with companion animals than did the preoccupied group.

Forty-five percent of study respondents endorsed a secure style, 29% a fearful style, 10% a preoccupied style, and 16% a dismissing style. There were significantly more women than would be expected in the fearful attachment category, and significantly more men than would be expected in the dismissing attachment category. Within the secure category, more subjects than would be expected were in committed relationships, while in both the fearful and preoccupied categories, fewer individuals than would be expected were in committed relationships. Proportional representations by attachment style category were not significantly different than would be expected in the areas of marital status, history of pet ownership, or concept of ideal pet species.

An interaction effect was found for gender and history of pet ownership in reference to affiliation with companion animals. Female pet owners had a significantly higher mean group score than did female past owners. The comparison of level of animal affiliation between male present owners and male past owners, however, was not significant. A comparison of mean group scores for female and male past pet owners was also not significant. In addition, an analysis of proportional representation for gender by history of pet ownership revealed that significantly more present owners than would be expected were women, and more past owners than would be expected were men. A main effect for gender was found in the area of loneliness. Women had a significantly "healthier" mean group score than did men on the loneliness measure.

Finally, affiliation with companion animals was significantly correlated

with loneliness, satisfaction with life, and self-esteem, in that stronger animal affiliation was associated with lower levels of loneliness, and higher levels of life satisfaction and self-esteem. The correlation between affiliation with companion animals and depression was not significant. In addition, correlations between the following pairs of emotional constructs were also significant: depression and loneliness, depression and life satisfaction, depression and self-esteem, loneliness and satisfaction with life, loneliness and self-esteem, and satisfaction with life and self-esteem.

Prior to data collection, some issues were identified that would be of interest for the present study. To see if light may be shed on these issues, they will now be addressed using data analyses from the present study:

1) Is attachment style related to self-report measures addressing the issues of loneliness, depression, self-esteem, and life satisfaction?

It appears there is a strong relationship between attachment style and level of distress or comfort with these emotional health issues. In general, individuals with a secure or dismissing attachment style had significantly "healthier" scores on these measures than did individuals with either a fearful or a preoccupied attachment style.

2) Is attachment style related to the ability to affiliate with companion animals?

The fearful attachment style group had the highest level of affiliation with companion animals, followed by the secure, dismissing, and preoccupied groups. The fearful category had a significantly higher mean group score on this measure than did both the dismissing and preoccupied attachment groups, and

the secure category had a significantly higher mean group score than did the preoccupied category.

3) Do people with various attachment styles who own pets, have scores on emotional health measures that are significantly "healthier" than people with similar attachment styles who do not own pets?

Pet owners with a fearful attachment style had a significantly higher mean group score on the satisfaction with life measure than did fearful category past owners. In addition, in the fearful attachment category, individuals who were pet owners endorsed significantly less difficulty with depression than did those individuals who had owned pets in the past. In the preoccupied attachment category, however, present pet owners endorsed significantly more difficulty with depression than did past owners.

4) Is the ability to affiliate with companion animals related to self-report measures of loneliness, depression, self-esteem, and life satisfaction?

Affiliation with companion animals was significantly correlated with loneliness, self-esteem, and satisfaction with life. That is, stronger affiliation with companion animals was associated with less distress on measures of these emotional constructs. No relationship was found between affiliation with companion animals and depression.

5) Is gender a significant factor in proportional representation within the various categories of attachment style, the ability to affiliate with companion animals, and ratings on measures of loneliness, depression, self-esteem, and life satisfaction?

Women were proportionately overrepresented in the fearful attachment style category, and men were proportionately overrepresented in the dismissing attachment style category. Women had a significantly "healthier" mean group score than did men on the loneliness measure, and a higher mean group score than did men on the animal affiliation measure. In addition, significantly more of the present pet owners than would be expected were women, and more past owners than would be expected were men.

6) Is it possible that pet ownership may be more beneficial for women than men in terms of emotional health factors?

Female pet owners did not have significantly "healthier" mean group scores than did male pet owners on the measures of depression, loneliness, satisfaction with life, or self-esteem.

CHAPTER VIII

DISCUSSION

In studying adult attachment, Bartholomew (1990) identified four basic attachment styles: secure, dismissing, fearful, and preoccupied. She classified the latter three categories as insecure attachment styles, and found that of those categories, individuals from the fearful and preoccupied groups tended to be particularly prone to difficulty with loneliness and depression. People with preoccupied and fearful styles have strong dependency needs, and are susceptible to emotional distress when interpersonal relationships are ineffective or unsatisfying. Although fearful individuals, with a negative model of both self and other, are interested in interpersonal relationships, they tend to be afraid of social contact. They view other people as uncaring and unresponsive, and themselves as unworthy and vulnerable to rejection. Preoccupied individuals also have a negative model of self, but they have a positive model of others. Equivalent to the ambivalent stance identified in Ainsworth's Strange Situation (Ainsworth & Bowlby, 1991), preoccupied individuals have "an insatiable desire to gain others' approval and a deep-seated feeling of unworthiness" (Bartholomew, 1990).

Individuals from both the dismissing and secure categories tend to be low in dependence upon other people, and, therefore, generally do not experience distress related to difficulty with interpersonal issues. People with a secure attachment style are comfortable with both intimacy and autonomy. That is, they have a positive model of both themselves and of others. Dismissing individuals

also have a positive self-image, but they have a negative model of others and tend to be detached from other people. They may not experience emotional distress related to interpersonal matters as they make themselves "invulnerable to negative feelings which might activate the attachment system" (Bartholomew, 1990).

Data from this study supported Bartholomew's paradigm of adult attachment. On measures of depression, loneliness, satisfaction with life, and self-esteem, both the secure and dismissing attachment categories had mean group scores that were consistently indicative of less distress than mean group scores for the fearful and preoccupied groups. Although Bartholomew classified the dismissing style as a type of insecure attachment, in this study, mean group scores on the emotional health measures were not significantly different between the dismissing and secure categories.

One of the questions for this study was whether there is a relationship between attachment style and strength of affiliation with companion animals. Prior to data collection, a reasonable hypothesis could have been put forth that any one of the four attachment categories would have the highest level of affiliation with companion animals. Since securely attached individuals tend to have the most mutually satisfying relationships with other people, perhaps they would also have the strongest affiliation with nonhuman animals. Or, perhaps the dismissing category would have the highest level of animal affiliation as they tend to feel less need for companionship with people than do the other attachment types and might, therefore, prefer associations with pets. Individuals from the preoccupied category crave interpersonal contact, so perhaps this need

would extend to a desire for relationships with companion animals. People from the fearful group also desire social contact, yet are afraid of approaching other people. Perhaps these people would be able to find solace in companionship that did not involve the intricacies (and potential rejection) involved in negotiating relationships with human beings.

Individuals from the fearful attachment category had the highest mean group score on the animal affiliation measure, followed by the secure, dismissing, and preoccupied categories. In addition, what is really striking is that pet ownership was most strongly associated with emotional benefits for individuals with a fearful attachment style. As a group, fearful style pet owners endorsed significantly less difficulty with depression than did fearful individuals who had owned pets in the past. Fearful pet owners also had a significantly "healthier" mean group score on the life satisfaction measure than did fearful style past owners. These findings support research that has suggested that strength of affiliation with companion animals may be an important factor associated with emotional benefit. Stallones (1990) and Garrity, Stallones, Marx, and Johnson (1989) found that higher affiliation with companion animals was significantly associated, specifically, with lower levels of depression.

People with a fearful attachment style probably lack confidence in their ability to approach, initiate, and maintain human relationships. Their best efforts may not often lead to successful interpersonal connections, which would then reinforce a cycle of timidity in the social realm. Perhaps these people find interactions with companion animals comforting as the "rules" for relating with pet animals are more straightforward than they are for relating with human

beings. In addition, many companion animals seem to give unconditional positive regard to people with whom they are closely associated, and they are often very consistent in their reactions to, and patterns of communication with, human beings. These dynamics may have been similar to those involved in the Folse, Minder, Aycock, and Santana (1994) study where a treatment group interacting in a non-directive fashion with a therapy dog had a significant decrease in their mean group score for depression. The post-study mean group depression score for this group was lower than the mean group scores for both the directed animal-assisted therapy treatment group and the control group. (The difference in mean group scores between the non-directive group and the control group was statistically significant, $\underline{F}$ [2, 41] = 3.69, $\underline{p} < .05$).

Of the four attachment style categories, preoccupied individuals had the lowest mean group score on the animal affiliation measure. In a reversal of the pattern found in the fearful attachment category, preoccupied past pet owners endorsed significantly less difficulty with depression than did preoccupied present pet owners. Perhaps this group does not experience animal companionship as particularly comforting because of the fact that they tend to be very focused on obtaining interpersonal contacts with other people. It is also possible that individuals from the preoccupied category are more likely to have a history of not being able to sustain, or be comforted by, the concept of a "constant object," whether that relationship be with human or nonhuman animals. They may have difficulty maintaining positive valence in their judgment of relationship "objects," vacillating between idealization and devaluation.

Although results of several studies appear to indicate that animal companionship is associated with emotional benefits (e.g., Friedman, Katcher, Lynch, & Thomas, 1980; Katcher, 1980; Siegel, 1990; Corson & Corson, 1980; Mugford & M'Comisky, 1975; Davis, 1987; Covert, Whiren, Keith, & Nelson, 1985; Martinez & Kidd, 1980; Straede & Gates, 1993; Robb, 1983), the question has been raised as to whether people with pets have "healthier" scores on emotional health measures because they have pets, or whether people who seek animal companionship already have better mental health (Kidd & Feldman, 1981; Hyde, Kurdek, & Larsen, 1983). Results of this study suggest that animal companionship is definitely associated with better emotional health at least for individuals with a fearful attachment style. First of all, people with a secure or dismissing attachment style (and "healthier" scores on emotional health measures) were no more likely to own pets than were individuals with a fearful or preoccupied style. And secondly, for a particular group of individuals, those with a fearful attachment style, pet ownership was associated with significantly less distress on measures of depression and life satisfaction. This trend was not in evidence for the other attachment style groups.

Proportional representation within attachment style categories was as follows: 45% secure, 16% dismissing, 10% preoccupied, and 29% fearful. More women than would be expected statistically, identified with a fearful attachment style (70% in this category were women), and more men than would be expected endorsed a dismissing attachment style (53% in this category were men). Bartholomew and Horowitz (1991) also found that male subjects were overrepresented within the dismissing category. In their study, however, female

subjects were overrepresented within the preoccupied category. Although proportional representation by gender is somewhat discrepant between these two studies, in each case the categories in which female subjects were over-represented are categories based upon a negative model of self.

Overholser (1992) found that women had significantly higher scores than did men on the Dependent Personality Style Scale. He also found that higher levels of dependency were associated with increased depression and loneliness, and with lower self-esteem. If, in fact, the fearful and preoccupied styles (where women may be proportionately overrepresented) have more difficulty with dependency issues than do the secure and dismissing groups, it is not surprising that mean group scores on measures of depression, loneliness, life satisfaction, and self-esteem for the fearful and preoccupied categories were significantly more "distressed" than mean group scores for the secure and dismissing categories. What is of interest, however, is that in general, significant gender differences were not found on the emotional health measures. The one exception was on the loneliness measure where women as a group endorsed significantly less distress than did men. (Although research findings have been equivocal in reference to the issue of gender and loneliness, most studies have found that women appear to experience greater difficulty with loneliness than do men [Blai, 1989; Ellison, 1978; Svanborg, 1979-1980; Wood, 1978; Clark & Anderson, 1980; Kivett, 1979; Hoferek, 1981; Brennan, 1982].)

Ainsworth (1991) proposed that throughout their lifetime, women may be genetically predisposed toward becoming more attached to, and relying more upon, attachment figures than men. She suggested that from an evolutionary

standpoint, this may have enabled women to better protect both themselves and their offspring by attaching to (i.e., becoming dependent upon) a physically stronger figure. Although pets are not necessarily physically stronger than women are, this viewpoint could perhaps explain why women tend to have significantly higher scores than do men in the area of affiliation with companion animals (Kidd & Kidd, 1989; Taggart, 1993; Straede & Gates, 1993), in that women are by nature more concerned with nurturance and more attuned to "connection" with other living figures. In a manner consistent with past findings, strength of animal affiliation was significantly higher for women than for men in this study. Also, women who were presently living with companion animals had a significantly higher mean group score on the animal affiliation measure than did women who had owned pets in the past. This was not the case, however, for male subjects. That is, strength of affiliation with companion animals was not significantly different between men who were present owners and those who had owned pets in the past. In addition, it is possible that women may actually seek out animal companionship more often than do men. This appeared to be the case for the present study as, in terms of proportional distribution, more women than would be statistically expected were pet owners, and more men than would be expected were past owners.

It has been suggested that feelings of isolation may be associated with a lack of opportunity for nurturance (Russell, Cutrona, Rose, & Yurko, 1984). This sense of isolation is more common for individuals with fearful and preoccupied styles, and women have been found to be overrepresented within these two categories. Can a companion animal become an object that could

fulfill the need to nurture, if, in fact, it is lack of opportunity for nurturance that contributes to increased depression and loneliness? And, if this is the case, why does animal companionship appear to be related to less depression for fearful individuals, but not for preoccupied individuals? It is possible that the sense of isolation felt by individuals within the fearful and preoccupied groups is qualitatively different in that it may stem from different histories in terms of social reinforcement, and/or different needs in terms of interpersonal interaction. Perhaps the isolation felt by people with fearful and preoccupied attachment styles is based upon perceived deficit of different types of "connections," with preoccupied individuals seeking an expanded social system, and with fearful individuals seeking an attachment figure (a function that could possibly be filled by a companion animal).

The research of Russell, Cutrona, Rose, and Yurko (1984) supported Weiss's (1973) hypothesis that emotional and social loneliness may emanate from different sources. These authors found that, although these two types of loneliness are strongly correlated, they are constructs largely independent of one another. Social loneliness is related to a perceived lack of social support, and emotional loneliness to an absence of interpersonal intimacy. In addition, the two types of loneliness appear to be associated with perceived deficits of different social provisions (Weiss, 1974). Social loneliness is related, primarily, to the factor of reassurance of worth, and emotional loneliness to the factors of attachment and opportunity for nurturance. The sense of loneliness felt by individuals with a preoccupied attachment style could perhaps be influenced by

a perceived lack of reassurance of worth. As these people are likely not able to generate this reassurance internally (due to their negative model of self), they may consistently seek this reassurance from other people (as their model of others is positive). People with a fearful attachment style, on the other hand, may more often experience emotional loneliness due to a perceived lack of opportunity for attachment and nurturance. As fearful style individuals have a negative model of others (as well as of self), perhaps companion animals are "safer" avenues for the fulfillment of both attachment and nurturance needs. This could explain why the fearful category had the highest mean group score on the affiliation with companion animals measure. It could also explain why pet ownership was strongly associated with less depression only for the fearful group. Studies examining the relationship between loneliness and depression (Hsu, Hailey, & Range, 1986; Russell, Cutrona, Rose, & Yurko, 1984) have indicated that, although both social and emotional loneliness may be accompanied by depression, depression is better predicted by emotional loneliness.

It is also possible that a beneficial effect was found for pet ownership only in the fearful attachment category as fewer fearful style subjects than would be expected (i.e., based on expected proportional distribution) indicated they were in committed relationships at the time of data collection. Perhaps more fearful style individuals than individuals from the other attachment categories, were relying on their relationship with their pet as a primary source of companionship. As mentioned previously, Garrity, Stallones, Marx, and Johnson (1989) found that greater strength of affiliation with companion animals was

significantly related, specifically, to less difficulty with depression. In addition, this effect was found to be even more pronounced for individuals with a limited social network. This brings to mind, however, the caution of Stallones, Marx, Garrity, and Johnson (1990). While pet ownership may help alleviate emotional distress, these authors suggested that "socially isolated individuals may well be attached to pets to the detriment of human contacts...attachment to pets...in some situations, may in fact be detrimental."

Results of this study appear to indicate that pet ownership is associated with less depression and increased life satisfaction at least for individuals with a fearful attachment style. This effect was not in evidence for the other three attachment style groups. Based, however, upon the study population and the study design, a few cautions should be made in regard to generalization of these results to different age groups, and to individuals in different social situations and/or life circumstances. First of all, developmental issues for college students are different than they are for individuals at other points in the life span. The average college student is in the stage of late adolescence when primary developmental issues include leaving home, establishing identity as an adult, seeking a life mate (and exploring the concepts of autonomy vs intimacy), and exploring potential professional aptitudes and interests. In addition, college students generally embark upon building a new social network when they move to a university community. Opportunities for social interaction may be more readily available, and far more diverse, than they would be for individuals in different social situations. During orientation, many social, religious, and service organizations have open houses and newcomers' meetings. If nothing else,

students are in contact with many people during the course of attending academic functions, and they have a standard schedule and regimen that requires them to be out and about in the community. In addition, students who are feeling emotional distress have easy access to mental health services, usually provided free of charge. This is not to deny that college students frequently have difficulty with loneliness and depression, but they do have more potential resources readily at hand than do individuals in some other life circumstances. It is possible, therefore, that in other types of populations, particularly those with fewer available avenues for companionship, pet ownership could be found to be beneficial for individuals with attachment styles other than just the fearful style. It is also possible that for fearful style individuals in other populations, the beneficial effects associated with animal companionship may be even more dramatic than those found within the circumscribed population used for the present study.

Another caution should be raised in that, due to the way the data were collected, it was impossible to tell how many of the subjects who identified themselves as pet owners actually live with their companion animals while they are at school. Many of these individuals may have pets that live with their parents or families during the school year. While these individuals may have higher scores on the animal affiliation measure due to their ongoing relationship with a companion animal, data from those identified as pet owners might include information collected from people presently living with pets as well as those who have pets, but only visit with them periodically. It is possible, therefore, that the trend indicating that animal companionship can help alleviate depression and

increase life satisfaction could be even more pronounced were the analysis able to truly capture information from those individuals actually living with pets on a day-to-day basis.

Another factor to be considered is that the majority of people in this study who did not live with a companion animal, indicated they would like to do so but were unable due to rental/lease restrictions. This may present a confound for the data analysis due to the fact that strength of animal affiliation, in and of itself, has been associated with less distress in terms of emotional health. Lago, Delaney, Miller, and Grill (1989) found that a positive attitude toward pet ownership, rather than actual pet ownership per se, was associated with better emotional and physical health. It seems likely that people who would prefer, but are unable, to live with a pet, would have higher levels of affiliation with companion animals than would individuals who do not live with a pet as they have no desire to do so. According to Lago and his associates, these people would, therefore, have improved scores on the emotional health measures simply because they are interested in having a pet.

A caution should also be raised concerning the concepts of dependency and nurturance, and the increased rates of depression and loneliness often assumed to be associated with, or resulting from, these issues. As mentioned previously, Ainsworth (1991) posited that women have different attachment issues (including dependency and nurturance) than do men due to genetic predisposition. In addition, some theorists believe that developmental growth and life tasks are inherently different for women than they are for men. They object to the established medical model that often views women's emotional

challenges as psychopathological, particularly surrounding the issues of dependency, attachment, and nurturance that must of necessity be addressed during the course of development and maturation (Northrup, 1994; Stiver, 1994-1995; Miller, 1994-1995; Surrey, 1994-1995; Kaplan, 1994-1995). Rather than being "pathological," it may in fact be very natural for women to experience "depression" in the course of encountering and working through attachment-based issues. In addition, "depression" may be a result of living in a culture that encourages autonomy and competitiveness, and devalues intimacy and cooperation. (See also Slater, 1970, who proposed that these same societal messages may be associated with increased levels of loneliness and emotional isolation.)

With these considerations in mind, the following issues and variables would be useful, and of interest, for future research:

1) It would be beneficial to identify how attachment and developmental issues are related across the life span, and how these interactions may affect emotional health. If needs associated with attachment, dependency, and nurturance are <u>different</u> along the life span continuum, is there a relationship between these developmental issues and particular interventions and/or social support provisions that could be effective and ameliorative for emotional distress? Is it possible that the utilization of animal companionship is more appropriate and/or beneficial for certain age groups, or for rectification of social support deficits that might be typical at specific points along the developmental/life span continuum?

As an example, research evaluating adolescents has indicated that children who are closely bonded with companion animals have increased levels of self-esteem (Davis, 1987; Covert, Whiren, Keith, & Nelson, 1985). These findings could have important ramifications for the potential use of adjunctive animal-assisted therapy with children and adolescents. For example, do children who are closely bonded with companion animals have less difficulty resisting peer pressure? Do they have better performance in school?

It is a well established fact that Americans are living longer, and that there are more older citizens for whom health care and residential needs must be considered (Bustad & Hines, 1983). In addition, many members from this segment of the population (in which women are overrepresented) live alone and experience difficulty with both physical and emotional isolation. Preliminary research studies have indicated that pet ownership can be beneficial for elderly persons (Katcher, 1980; Siegel, 1990; Corson & Corson, 1980), especially for those with limited social networks (Garrity, Stallones, Marx, & Johnson, 1989). It is certainly recommended that studies addressing the concerns of older citizens continue.

2) There are additional factors that need to be considered in future research in order to provide direction for the most effective prescription and application of the adjunctive use of companion animals. In addition to age, the following variables could have significance in terms of the possible benefit of animal companionship. How does a person's present, available, or potential social support network influence emotional health? If an individual is experiencing emotional distress, would effective interventions include assisting

them in expanding their social network, adding a companion animal to their household, or both? Are there times when one of these interventions might be preferable to the other, or even when one of these interventions might be contraindicated?

In terms of being a suitable candidate for the adjunctive use of companion animals, what are the effects, if any, of variables such as education level, race, religious preference, philosophical orientation, place of residence (i.e., rural vs urban or suburban), or socio-economic level? For example, Burghardt (1985) found that generally, people who accept the theory of evolution believe that nonhuman animals are more similar to human beings in terms of feelings, emotions, and behavioral patterns, than do individuals who do not believe in evolutionary theory. Kellert (1983) also found a significant relationship between a person's educational level and their attitude toward animals. For example, college graduates are more protective of, and emotionally attached to, animals than are individuals with less education.

It is imperative that the effect of gender be studied across age groups, and in combination with other variables, when considering the possible benefit of animal companionship. Research has suggested that strength of animal affiliation is greater for women then for men. In addition, it is possible that women may seek out animal companionship more often than do men. As women tend to be overrepresented within the fearful and preoccupied attachment style categories, and people in these two categories experience more emotional distress than individuals from the secure and dismissing categories, perhaps they

are more likely to come to the attention of medical and mental health professionals.

Information about possible relationships between the ability to affiliate with companion animals and variables such as age, education, gender, and socio-economic level, would be helpful not only for determining what type of individuals could benefit most from the adjunctive use of companion animals, but also for screening out people who would most likely not benefit from such a prescription. For example, McCulloch (1986) has cautioned that sometimes attempting to add a pet into a household could actually be detrimental to the health and well being of a targeted individual. If a careful assessment is not made, the additional responsibility of a companion animal could overwhelm an individual, physically and/or emotionally. In addition, the health and well-being of the animal could be jeopardized.

3) It would be interesting to examine whether people with a particular attachment style, benefit more from the companionship of a specific species of pet. Are there characteristics typical of different animal species that better meet the needs of individuals with various attachment styles?

4) Longitudinal studies tracking pet ownership and emotional health measures would be useful. It would be interesting to follow people who were adding a pet into their household for the first time, or after not living with a companion animal for a while, to measure the status (i.e., possible changes) of emotional and physical health. A 10-month study of this nature was conducted by James Serpell (Kale, 1992b), and results were encouraging about the benefit of animal companionship.

5) Finally, if there is in fact a beneficial effect of pet ownership for people with an insecure attachment style (specifically a fearful style), how best could these individuals be identified within systems such as medical, mental health, and social service agencies? It would be beneficial to address the following questions in research studies:

a) are there presenting complaints, or patterns of physical and/or emotional health problems, that are typically associated with particular attachment styles?

b) is there a relationship between specific attachment styles and commonly utilized diagnostic systems (e.g., the Diagnostic and Statistical Manual for psychiatric disorders)?

c) can health screening measures, or psychological/personality instruments (e.g., the MMPI-2, the Millon Multiaxial inventory) be used to identify particular attachment styles?, and

d) if adjunctive use of companion animals is implemented, are there individuals representing particular diagnostic categories or presenting problems for whom this intervention is more beneficial? In addition (based upon the preceding questions regarding screening devices), what methods would be most effective for assessing pre- and post-intervention emotional and/or physical health status?

The introduction to this study began by stating that anecdotal reports about the beneficial nature of animal companionship have been abundant, but that empirical data to support this theory have been scarce (Culliton, 1987). Results of this study appear to provide empirical support for the theory that

animal companionship is associated with improved psychological health. What is of particular interest is that animal companionship seems to be most beneficial for people with a fearful attachment style. These individuals consistently experience difficulty with emotional distress (particularly related to interpersonal issues), and it is these individuals who may be easily identifiable, therefore, by medical and mental health professionals.

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APPENDICES

APPENDIX A

ADULT ATTACHMENT SCALE (Bartholomew, 1990)

Which of the following **BEST** describes your feelings? Check only one of the statements below.

_____ A. It is relatively easy for me to become emotionally close to others. I am comfortable depending on others and having others depend on me. I don't worry about being alone or having others not accept me.

_____ B. I am somewhat uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I sometimes worry that I will be hurt if I allow myself to become too close to others.

_____ C. I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them.

_____ D. I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.

A - Secure
B - Fearful
C - Preoccupied
D - Dismissing

APPENDIX B

AFFILIATION WITH COMPANION ANIMALS SCALE (Taggart, 1993)

Each question should be completed by circling one of the answers that follows the item. For each item select the **ONE** answer from the choices listed that best matches what you think or feel.

1 - Strongly Disagree
2 - Disagree
3 - Slightly Disagree
4 - Neutral/Undecided
5 - Slightly Agree
6 - Agree
7 - Strongly Agree

1) Animals and human beings can communicate with each other.	1 2 3 4 5 6 7
2) Many animals are similar to human beings in their feelings and emotions.	1 2 3 4 5 6 7
3) Dogs and cats are sometimes lonely and depressed.	1 2 3 4 5 6 7
4) If I had a cat, it would not bother me at all to change the litter box regularly.	1 2 3 4 5 6 7
5) If I had a pet, I would have it vaccinated yearly.	1 2 3 4 5 6 7
6) My love for animals is among my strongest feelings.	1 2 3 4 5 6 7
7) If I were sick, I would not want a pet around me.	1 2 3 4 5 6 7
8) Animals are able to sense when human beings are happy or sad.	1 2 3 4 5 6 7
9) I have been able to tell the difference in emotional states of a pet I have observed.	1 2 3 4 5 6 7
10) Pets can help reduce human depression and loneliness.	1 2 3 4 5 6 7
11) If I had a pet, I would groom it regularly.	1 2 3 4 5 6 7

(continued)

12) I believe pets are messy.	1 2 3 4 5 6 7
13) I believe the companionship of a pet can sometimes be as rewarding and comforting as the companionship of a human friend.	1 2 3 4 5 6 7
14) It takes too much effort to properly care for a pet.	1 2 3 4 5 6 7
15) I would not want a pet because its eventual death would be too upsetting.	1 2 3 4 5 6 7
16) The expense of keeping a pet (veterinary care, food and supplies) is not worth it for me.	1 2 3 4 5 6 7

APPENDIX C

BECK DEPRESSION INVENTORY (Beck, A. T., 1978)

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling the **past week, including today!** Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, circle each one. **Be sure to read all the statements in each group before making your choice.**

1) 0 I do not feel sad.
1 I feel sad.
2 I am sad all the time and I can't snap out of it.
3 I am so sad or unhappy that I can't stand it.

2) 0 I am not particularly discouraged about the future.
1 I feel discouraged about the future.
2 I feel I have nothing to look forward to.
3 I feel that the future is hopeless and that things cannot improve.

3) 0 I do not feel like a failure.
1 I feel I have failed more than the average person.
2 As I look back on my life, all I can see is a lot of failures.
3 I feel I am a complete failure as a person.

4) 0 I get as much satisfaction out of things as I used to.
1 I don't enjoy things the way I used to.
2 I don't get real satisfaction out of anything anymore.
3 I am dissatisfied or bored with everything.

5) 0 I don't feel particularly guilty.
1 I feel guilty a good part of the time.
2 I feel quite guilty most of the time.
3 I feel guilty all the time.

6) 0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7) 0 I don't feel disappointed in myself.
1 I am disappointed in myself.
2 I am disgusted with myself.
3 I hate myself.

8) 0 I don't feel I am any worse than anybody else.
1 I am critical of myself for my weaknesses or mistakes.
2 I blame myself all the time for my faults.
3 I blame myself for everything bad that happens.

(continued)

9) 0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.

10) 0 I don't cry any more than usual.
1 I cry more now than I used to.
2 I cry all the time now.
3 I used to be able to cry, but now I can't cry even though I want to.

11) 0 I am no more irritated now than I ever am.
1 I get annoyed or irritated more easily than I used to.
2 I feel irritated all the time now.
3 I don't get irritated at all by the things that used to irritate me.

12) 0 I have not lost interest in other people.
1 I am less interested in other people than I used to be.
2 I have lost most of my interest in other people.
3 I have lost all of my interest in other people.

13) 0 I make decisions about as well as I ever could.
1 I put off making decisions more than I used to.
2 I have greater difficulty in making decisions than before.
3 I can't make decisions at all anymore.

14) 0 I don't feel I look any worse than I used to.
1 I am worried that I am looking old or unattractive.
2 I feel that there are permanent changes in my appearance that make me look unattractive.
3 I believe that I am ugly.

15) 0 I can work about as well as before.
1 It takes an extra effort to get started at doing something.
2 I have to push myself very hard to do anything.
3 I can't do any work at all.

16) 0 I can sleep as well as usual.
1 I don't sleep as well as I used to.
2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
3 I wake up several hours earlier than I used to and cannot get back to sleep.

17) 0 I don't get more tired than usual.
1 I get tired more easily than I used to.
2 I get tired from doing almost anything.
3 I am too tired to do anything.

(continued)

18) 0 My appetite is no worse than usual.
1 My appetite is not as good as it used to be.
2 My appetite is much worse now.
3 I have no appetite at all anymore.

19) 0 I haven't lost much weight, if any, lately.
1 I have lost more than 5 pounds.
2 I have lost more than 10 pounds.
3 I have lost more than 15 pounds.

I am purposely trying to lose weight by eating less. Yes ___ No ___

20) 0 I am no more worried about my health than usual.
1 I am worried about physical problems such as aches and pains; or upset stomach; or constipation.
2 I am very worried about physical problems and it's hard to think of much else.
3 I am so worried about my physical problems that I cannot think about anything else.

21) 0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

APPENDIX D

REVISED UCLA LONELINESS SCALE
(Russell, Peplau, & Cutrona, 1980)

Indicate how often you have felt the way described in each statement using the following scale:

1 - I have **never** felt this way
2 - I have felt this way **rarely**
3 - I have felt this way **sometimes**
4 - I have felt this way **often**

1) I feel in tune with the people around me.	1	2	3	4
2) I lack companionship.	1	2	3	4
3) There is no one I can turn to.	1	2	3	4
4) I do not feel alone.	1	2	3	4
5) I feel part of a group of friends.	1	2	3	4
6) I have a lot in common with the people around me.	1	2	3	4
7) I am no longer close to anyone.	1	2	3	4
8) My interests and ideas are not shared by those around me.	1	2	3	4
9) I am an outgoing person.	1	2	3	4
10) There are people I feel close to.	1	2	3	4
11) I feel left out.	1	2	3	4
12) My social relationships are superficial.	1	2	3	4
13) No one really knows me well.	1	2	3	4
14) I feel isolated from others.	1	2	3	4
15) I can find companionship when I want it.	1	2	3	4
16) There are people who really understand me.	1	2	3	4
17) I am unhappy being so withdrawn.	1	2	3	4
18) People are around me but not with me.	1	2	3	4
19) There are people I can talk to.	1	2	3	4
20) There are people I can turn to.	1	2	3	4

APPENDIX E

SATISFACTION WITH LIFE SCALE
(Diener, Emmons, Larsen, & Griffen, 1985)

Each question should be completed by circling one of the answers that follows the item. For each item select the **ONE** answer from the choices listed that best matches what you think or feel.

1 - Strongly Disagree
2 - Disagree
3 - Slightly Disagree
4 - Neutral/Undecided
5 - Slightly Agree
6 - Agree
7 - Strongly Agree

1) In most ways my life is close to my ideal.	1 2 3 4 5 6 7
2) The conditions of my life are excellent.	1 2 3 4 5 6 7
3) I am satisfied with my life.	1 2 3 4 5 6 7
4) So far I have gotten the important things I want in life.	1 2 3 4 5 6 7
5) If I could live my life over, I would change almost nothing.	1 2 3 4 5 6 7

APPENDIX F

INDEX OF SELF ESTEEM (Hudson, 1982)

Each question should be completed by circling one of the answers that follows the item. For each item select the **ONE** answer from the choices listed that best matches what you think or feel.

1 - **Rarely or none** of the time
2 - **A little** of the time
3 - **Some** of the time
4 - **A good part** of the time
5 - **Most or all** of the time

1) I feel that people would not like me if they really knew me well.	1 2 3 4 5
2) I feel that others get along much better than I do.	1 2 3 4 5
3) I feel that I am a beautiful person.	1 2 3 4 5
4) When I am with other people I feel they are glad I am with them.	1 2 3 4 5
5) I feel that people really like to talk with me.	1 2 3 4 5
6) I feel that I am a very competent person.	1 2 3 4 5
7) I think I make a good impression on others.	1 2 3 4 5
8) I feel that I need more self-confidence.	1 2 3 4 5
9) When I am with strangers I am very nervous.	1 2 3 4 5
10) I think that I am a dull person.	1 2 3 4 5
11) I feel ugly.	1 2 3 4 5
12) I feel that others have more fun than I do.	1 2 3 4 5
13) I feel that I bore people.	1 2 3 4 5
14) I think my friends find me interesting.	1 2 3 4 5
15) I think I have a good sense of humor.	1 2 3 4 5
16) I feel very self-conscious when I am with strangers.	1 2 3 4 5
17) I feel that if I could be more like other people I would have it made.	1 2 3 4 5

(continued)

18) I feel that people have a good time when they are with me.	1 2 3 4 5
19) I feel like a wall flower when I go out.	1 2 3 4 5
20) I feel I get pushed around more than others.	1 2 3 4 5
21) I think I am a rather nice person.	1 2 3 4 5
22) I feel that people really like me very much.	1 2 3 4 5
23) I feel that I am a likable person.	1 2 3 4 5
24) I am afraid I will appear foolish to others.	1 2 3 4 5
25) My friends think very highly of me.	1 2 3 4 5

APPENDIX G

GENERAL INFORMATION FORM

WHAT IS YOUR AGE? _____ GENDER: Male ___ Female ___

MARITAL STATUS: Married _____ Living with a significant other _____

Single _____ Divorced _____ Widowed _____

Are you currently in a committed relationship? _____

DO YOU HAVE ANY CHILDREN? Yes ____ No ____

If so, how many? _____

HOW WOULD YOU RATE YOURSELF IN TERMS OF FEELING LONELY?

_____ one day a month or less _____ about two or three days a month

_____ about one day a week _____ about two to five days a week

_____ almost daily

DO YOU LIVE WITH A PET AT THE PRESENT TIME? Yes ____ No ____

If yes, what type(s) of animal and how many? _____

_____

Is it your pet specifically or a family pet? Mine ____ Family pet _____

How long have you lived with a pet(s)?

_____ less than one year _____ one to five years

_____ five to ten years _____ more than ten years

IF YOU DO NOT HAVE A PET NOW, HAVE YOU EVER HAD ONE IN THE PAST?

Yes _____ No _____

Was it specifically your pet or a family pet? Mine ____ Family _____

IF YOU DO NOT HAVE A PET NOW, WHAT IS THE REASON?

_____

Would you have a pet if the opportunity were available?

Yes _____ No _____

(continued)

WHAT TYPE OF ANIMAL DO YOU, OR WOULD YOU, CONSIDER AS YOUR FAVORITE OR IDEAL PET? _____

_____

Why did you choose this particular animal? _____

_____

_____

Thank you for your participation.

APPENDIX H

COVER LETTER TO STUDY PARTICIPANTS

To Study Participants:

The purpose of this research project, entitled "Attachment Style and Affiliation with Companion Animals," is to study the relationship between people's attachment style to other people and to pet animals, and whether these factors, in turn, appear to be related to various emotional states. You will be asked to fill out six surveys and a form with general information. The entire process should not take more than fifteen to twenty minutes. Your participation is voluntary and there will be no penalty for withdrawal from participation or refusal to participate. The return of the completed questionnaires constitutes your consent to participate. Your responses will be completely anonymous. You will not be asked for any identifying information other than general demographic details. This will ensure confidentiality. There are no foreseeable risks to those who participate in this study.

If you have any questions or comments regarding this project, please feel free to contact: Lee Ann P. Taggart, M.A., Department of Psychology, Austin Peay Building, University of Tennessee, Knoxville, TN 37996, (615-974-2161).

Thank you very much for your participation.

APPENDIX I

REASONS GIVEN FOR CHOICE OF PARTICULAR SPECIES AS IDEAL PET

A) DOG:

Miscellaneous (examples):

- Dogs seem more human than other animals.
- Dogs care about their human friends.
- Dogs listen to you, not like cats.
- Dogs have more personality than cats.
- Dogs have emotions similar to humans.
- Dogs are closely attached to their people.
- Dogs care more about their human friends.
- Dogs eat table scraps.
- Dogs are "man's best friend."
- Dogs are Woman's best friend.
- Dogs are outdoorsy.
- Dogs brings happiness.
- Dogs are sloppy.
- Dogs love to run.
- Dogs motivate you to do things.
- Dogs are good for children.
- Dogs give emotional security.
- Dogs are funny looking.
- Dogs are useful.
- Dogs cheer me up.
- My dog has been my baby for almost ten years.
- Dogs are like kids.
- My dog is like a child in her actions and moods.
- Dogs have a great bark.
- Dogs are good to have around.
- Dogs help alleviate loneliness.
- They're cool!
- Dogs can adapt to a human lifestyle.
- Dogs exude their feelings and emotions.
- I can understand them.
- I can't imagine life without the companionship and unconditional love of a dog. They're faithful, devoted, direct, and more intelligent than most humans I know."
- (in reference to a preference for large dogs): A pet should not be something you have to worry about stepping on and killing.

(continued)

- Dogs complete the family.
- Dogs have compassion.
- You can express your feelings to dogs without feeling weird or stupid.
- Cats pick and choose when they want attention. Dogs are always happy to see you.
- Dogs are the friendliest animals I know.
- Dogs accept whatever kind of treatment they get. If I treat my dog poorly, it will show in his/her development, which I use as evidence and an indicator that I need to relate to dogs and people in a more healthy way.
- Basset hounds are always happy even when they look sad, and they have a really great bark.

B) CAT:

Miscellaneous (examples):

- A cat can sleep in my bed.
- Cats are lazy like me.
- Cats are less hyper and rowdy than dogs.
- Cats provide comfort in times of emotional stress.
- Cats are good for the children.
- Cats are not clumsy.
- Because they purr!!
- I used to like it when my cat would crawl up on me and go to sleep.
- Many cats like to be held and caressed.
- I like to hear cats meow.
- Cats are complex, like humans.
- Cats will greet you when you come home.
- Cats can live in a small living space.
- Cats can entertain themselves.
- I like to sit and read or study with my cat on my lap. It's very comforting and keeps me from being lonely.
- I can understand cats.
- Cats are social in subtle ways.
- The bond cats form with their owners is different than the bond with dogs.
- If treated affectionately from a very early age, cats will become very human-like in their adult behavior - very sociable.
- Cats help alleviate loneliness.
- Having a cat is like having a kid.
- Cats are night animals and I'm a night person.
- Cats are lovable and cuddly. I like their fur because I like to pet them.
- Cats like to be close and be petted. Dogs just sit on the floor.

(continued)

C) FISH:

- Fish are quiet.
- Fish need little time and attention.
- Fish look cool.
- Fish are good companions.
- I love to watch fish swim.
- Fish help me cope with depression.
- Fish are clean.
- Fish are low maintenance.
- Fish don't get into things.
- Fish don't bite.
- Fish don't poop on the floor.

D) BIRD:

- Birds have a distinct personality.
- Birds can stay in a cage.
- Birds are intelligent.
- Birds are entertaining.
- Birds are good companionship.
- I like the talking features of parrots.
- Birds are fascinating.
- Birds are personable.
- Birds are loving.
- Birds are easy to take care of.

E) HORSE:

- Horses have strength and agility.
- Horses are beautiful.
- A horse makes a good companion.
- Horses are fun to ride.
- You can build a close partnership with a horse.
- A person can have a strong bond with a horse.

F) MISCELLANEOUS ANIMALS:

- Apes seem affectionate and personable on TV.
- I am intrigued by ball pythons.
- Jaguars are beautiful and wild.

(continued)

- A pig would be an unusual pet and it wouldn't aggravate like a dog would.
- I've always wanted a ferret because they are so cute and playful.
- The ideal pet would be a stuffed animal. They are low maintenance, make no demands, and need nothing.
- Rabbits are low maintenance.
- I like rabbits because they are furry.
- My rabbit provided me with times of enjoyment.

VITA

Lee Ann Peabody Taggart was born in Minneapolis, Minnesota on February 25, 1956. She was raised in Minneapolis and the Wayzata area, and was graduated from Orono High School in June of 1974. In May of 1978 she received the B.A. degree, cum laude with distinction in the special field of music, from Wells College in Aurora, New York where she studied as an Alice Barler music scholar. She had additional study with Walter Hautzig, professor of piano, Peabody Conservatory of Music, Baltimore, Maryland. She performed for several years as a solo and chamber musician, and from 1984 to 1985 was an adjunct faculty member at Wabash College in Crawfordsville, Indiana.

In 1988 she began graduate study in clinical psychology. She received the M.A. degree from East Carolina University in Greenville, North Carolina in August of 1991. Immediately thereafter she entered the doctoral program in clinical psychology at the University of Tennessee, Knoxville. From September of 1995 to August of 1996, she was on clinical internship at the Wm. S. Hall Psychiatric Institute in Columbia, South Carolina. The doctoral degree was received in August of 1996.

She is married to the composer Mark Alan Taggart, D.M.A., associate professor of music at East Carolina University in Greenville, North Carolina.