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Appendix C, pages 122-126**

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UMI

**GRIEF RESULTING FROM
EUTHANASIA AND NATURAL DEATH OF COMPANION ANIMALS**

KELLY A. McCUTCHEON

**A thesis submitted to the Faculty of Graduate Studies in
partial fulfilment of the requirements
for the degree of**

Master of Arts

**Graduate Programme in Psychology
York University**

December, 1998



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Grief Resulting From Euthanasia and
Natural Death of Companion Animals

by Kelly Anne McCutcheon

a thesis submitted to the Faculty of Graduate Studies of York
University in partial fulfillment of the requirements for the degree
of

MASTER OF ARTS

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Abstract

Previous research has shown that human grief reactions to the loss of a pet are not only very common, but they can also have a serious impact on the owner's physical and emotional well-being (Katcher & Rosenberg, 1979). The adjustment process can be difficult for owners, especially when the owner is faced with the decision of whether or not to have their pet euthanized (Cusack, 1988).

The purpose of this study was to investigate the variables of the human grief response associated with pet loss in order to increase our understanding of the intensity and duration of the grief process. These variables included: Cause-of-Death; Gender-of-Owner; Age-of-Owner; Time-Since-Loss; Type-of-Pet; Replacement-of-Pet; and Household-Make-up. The variable of Attachment-to-Pet was used as a covariate in the analyses. Data were obtained from the 103 voluntary participants through use of the Grief Experience Inventory (Sanders, Mauger, & Strong, 1985); the Companion Animal Loss Scale (Stallones, Johnson, Garrity, & Marx, 1989); and a General Information Questionnaire which included participants' qualitative comments. Results indicated the following: (i) Owners whose pets died naturally experienced significantly more total grief, social isolation, and loss of control compared to owners who had their pets euthanized; (ii) Female owners experienced significantly greater depersonalization, death anxiety, and rumination compared to males; (iii) Owners in the 18-35 year age group experienced significantly greater anger/hostility and despair than owners in the 60+ age group;

(iv) Owners who had lost their pet between 6 months and 1 year were significantly more angry/hostile when compared to owners who had lost their pet in the time period less than 6 months or greater than 1 year; and also, owners whose pets had been deceased from 1 month to 1 year were significantly more vulnerable to social isolation compared to other groups; and (v) Owners who lived alone experienced significantly greater somatization than owners who lived with others. Other analyses indicated interactions with many of the variables and Cause-of-Death, however, no significant differences in grief outcome were found with the variables of Type-of-Pet and Replacement-of-Pet.

Results of the present study suggest reasons why some owners may be “at risk” for excessive grief reactions due to the loss of their companion animal. The importance of providing bereaved owners with a source of mental health counseling is discussed, and directions for future research are suggested.

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I would like to express my appreciation to the pet owners for so generously participating in this research. Though not always acknowledged in society, the loss of a pet can be a very difficult and traumatic event. The owners in this study showed an unbelievable amount of courage, strength, as well as openness to share their experiences, for which I am so grateful.

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Introduction

It has been estimated that 52% of Canadian households include a companion animal (Ralston Purina, 1995, as cited in Davidson & Manning, 1997). The reasons for ownership, as well as the value placed upon the animal, can vary from household to household, but for the most part, pets are recognized as important members of the family system (Cain, 1983), providing important psychological, social, and physiological benefits to their owners (Gerwolls & Labott, 1994). Because people generally establish close relationships with their pets, the death of a pet can have a serious impact on an owner's physical and emotional well-being (Katcher & Rosenberg, 1979; Thomas, 1982). The death of a pet, therefore, is a common event involving many decisions, emotions, and reactions of owners, and is an area that has not been investigated adequately to date.

Reactions associated with bereavement following the death of a pet have been shown to include affective, cognitive, and physical components (Cowles, 1985). Initial responses may include helplessness (Carmack, 1985), sadness and crying (Weisman, 1991), appetite and sleep disturbances (Quackenbush & Glickman, 1984), and a temporary inability to cope with daily routine (Cowles, 1985). In the weeks and months following the death, an owner may mistake sights and sounds in the environment for their deceased pet (Weisman, 1991), and possessions of the animal, such as collars, toys, and blankets are often kept as mementos (Cowles, 1985). In addition, Quackenbush & Glickman (1984) found that many bereaved

report periods of social withdrawal and isolation while they are attempting to integrate and adjust to the loss.

There are two issues that can make grieving for a pet especially difficult. First, the bereaved owner may receive little sympathy and support from others, and this disenfranchisement may make integrating the loss very difficult (Doka, 1989). Secondly, an owner can be faced with the major decision of whether the quality of the pet's life is worth continuing (Cusack, 1988), and, therefore, decide if their pet should be euthanized with a lethal substance. This decision can involve major responsibility on the part of the owner, which is often accompanied by guilt as well as other painful emotions (Fogle, 1981).

While some owners have felt comfort in giving their pet a dignified, easy death (Stewart, 1983) by means of the widely-accepted practice of euthanasia (Fogle, 1981), others who have euthanized their pet have been burdened with doubts and regrets, wondering if the pet could have survived (Pitcairn & Pitcairn-Hubble, 1982). Some owners reject the option of euthanasia entirely (Pitcairn & Pitcairn-Hubble, 1982), feeling it is ethically wrong to take the life of another as they struggle to save their animal who may be in great and prolonged pain, enduring a slow and inevitable death (Fogle, 1981). The euthanasia option can, therefore, bring about much confusion on the part of the owner, and burden the owner with a very difficult decision.

Euthanasia of companion animals has, therefore, been acknowledged as an especially difficult and traumatic situation for pet owners. Because this is such an emotionally-laden issue, it is important that research be focused in this area. Euthanasia research has primarily relied on anecdotal reports written by practitioners who counsel people for animal loss, which has led to comments that are speculative and inconclusive. Scientific investigations including the reactions to the Cause-of-Death variable are few in number, and it is still unknown as to whether death by euthanasia produces the same intensity of grief reaction as death due to natural causes.

Research must provide more predictive potential and the ability to anticipate owners who may be at risk for intensive grieving, and need ongoing support. This must include an exploration of owner grief reactions to euthanasia of their companion animals, particularly focusing on the emotion of guilt. Therefore, the first hypothesis of this study involves systematically investigating the differences in grief responses between those owners whose pets died of natural causes and those owners who had their pets euthanized.

In addition to the first hypothesis, this investigation includes further hypotheses which are centred around exploring some of the important variables that may influence adjustment to companion-animal loss due to euthanasia compared to death by natural causes. Whereas empirical research has begun in this area, studies are not abundant (Stallones, 1994), but those in existence are

helping us to understand how the intensity and duration of the grief process may depend on certain variables. Variables that have been studied previously, and which will be further explored in this study, include: (i) Degree-of-Owner-Attachment-to-Pet; (ii) Gender-of -Owner; (iii) Age-of -Owner; (iv) Time-Since-Loss; (v) Type-of-Pet; (vi) Replacement-of -Pet; and (vii) Household-Make-up.

Previous research has shown that human grief reactions to the loss of a pet animal are not only very common, but they also can have a serious impact on the owner's well-being (Katcher & Rosenberg, 1979). Due to the dearth of empirical research, this study will attempt to systematically investigate the neglected area of owner reaction to euthanasia, as well as continue researching other variables involved. The ultimate goal of this study is to elaborate upon the specific owner characteristics and situational variables that can affect how individuals adjust to the loss of their pet so that those individuals who may find adjusting to the loss especially difficult can be identified and therefore, assisted adequately.

Literature Review

Companion animals, more commonly known as household pets, are animals which are tamed and nurtured, and to which many people form an emotional attachment or bond (Cain, 1983). This bond is sometimes very special and different from those formed with people (Sharkin & Bahrack, 1990). Pets are recognized as important members of the family system with interactive social roles (Quackenbush & Glickman, 1984), and they can provide many important psychological, social, and physiological benefits to their owners (Gerwolls & Labott, 1994). Given the close relationship that people generally establish with their pets, it is likely that when a pet dies the owner may experience feelings which would ordinarily be associated with human loss (Katcher & Beck, 1983; Keddie, 1977), including a distressing and persistent bereavement period (Weisman, 1991).

As with any attachment bond, the bond between a pet and its human owner inevitably will be broken. Though the survival time of individual dogs and cats is lengthening (Schneider, 1979), with upper limits of 18 to 20 years for cats, and 12 to 15 years for dogs (Cusack, 1988), these life spans are much shorter than a human's, which makes separation by death a frequent occurrence (Cowles, 1985). When a companion animal dies, the death may precipitate a period of deep bereavement on the part of the owner (Weisman, 1991), resulting in intense

remorse and grief responses - responses that can be so disturbing that their presence is the most often-cited reason for not wanting another pet (Fogle, 1983).

Specific reactions associated with bereavement following the death of a pet include affective, cognitive, and physical components (Cowles, 1985). Though the time it takes to recover from the loss can vary from a few days to many months (Weisman, 1991), the grief process has been reported to last an average of ten months (Katcher & Rosenberg, 1979), with an acute phase of one to two months (Carmack, 1985).

Loss of a companion animal can arouse the most intense affective responses. Cowles (1985), in addition to finding the response of denial of impending death or death in itself, found that feelings of emptiness, sadness, and pain were most frequently mentioned after the death of an owner's pet. Despair, depression, somatization, and death anxiety have been reported (Gerwolls & Labott, 1994), and guilt over the death as well as anger directed towards others (such as the veterinarian) are also frequently experienced (Cowles, 1985). Many owners also report feeling helpless, first, because they were unable to save their pets, and second, because they had to go on living without them. For these reasons, many bereaved owners have expressed the desire to die (Carmack, 1985).

When bereaved owners attempt to engage in their regular daily activities, many of them experience intruding memories of their pets which, in some cases, can lead them to ruminate about the events surrounding the pet's death (Cowles,

1985). Weisman (1991) found that a preoccupation with these memories can lead owners to mistake sights and sounds in the environment for their deceased pet. Fear is also a prominent response in this process as well. Fear of one's own mortality, as well as the fear of approaching insanity during an acute grief period, can also be seen with grieving pet owners who tend to feel very alone in their bereavement and question their own psychological stability (Cowles, 1985).

Harris (1983) found that crying, sometimes for no apparent reason, was a common physical response expressed by owners several weeks following their pets' death. Cowles (1985) found that collars, tags, food dishes, blankets, and the animals' favourite toys were some of the items retained by owners, and searching behaviour or unconscious attempts to locate the pet were also prominent. Quackenbush & Glickman (1984) reported that 97% of the bereaved owners they studied experienced disruptions in their daily routines, eating and sleeping disorders, excessive crying, and an inability to concentrate. They also found that 70% of their subjects reported increases in social withdrawal and isolation.

Two major issues can make grieving for the loss of a pet especially difficult. The first issue involves social support. Disenfranchised grief, where the expression of grief and the partaking in mourning rituals is discouraged, is something a grieving pet owner may face (Doka, 1989). Because grief over the loss of a pet is generally not socially accepted, it can be met with a lack of sensitivity, lack of understanding, or ridicule ("It's only a dog!") and this may

interfere with the course of grieving (Quackenbush & Glickman, 1984). Because of this disenfranchisement, many owners grieve in silence (Cusack, 1988) because they fear others will criticize them (Weisman, 1991) or bluntly tell them they can easily replace their pet ("It's just a cat...you can get another one!") (Sharkin & Bahrck, 1990), making their grief seem unnecessary or unjustified.

Consequently, without the recognition and support they need, grieving pet owners may go through an intensified grieving process (Stewart, Thrush, Paulus, & Hafner, 1985) where the tasks of grief and mourning are very difficult to accomplish (Meyers, 1990).

Secondly, the loss of a pet often involves responsibility for life and death. When a pet is seriously ill, the owner is faced with the major decision of whether the quality of the pet's life is worth continuing (Cusack, 1988). The owner must decide if their pet should be euthanized, and if so, who is to do it, when it should be done, where it should be done, and who should be present (Fogle, 1983). Such decisions involve both responsibility and guilt.

Veterinary euthanasia is the procedure of injecting drugs to induce death in a pain-free, humane fashion (Harris, 1996), and is derived from the Greek which means "death with peace" (Fogle, 1981). For various reasons such as terminal illness, disease, overwhelming physical injury, or old age (Fogle, 1981), 2% to 4% of veterinarians' clinical encounters involve owner-consented euthanasia (Harris, 1983; McCulloch & Bustad, 1983), with veterinarians performing an average of 8

to 11 euthanasias per month (Sanders, 1995). During this procedure, veterinarians euthanize companion animals either in their clinic, or the owner's home, by injecting an overdose of a barbiturate anesthetic, such as pentobarbital, into a vein or the heart. The animal loses consciousness within a few seconds, slumps over, and the vital functions cease soon thereafter (Fogle, 1983). Owners are given the option as to whether or not they wish to be present for the entire procedure, or present for viewing the body afterwards (Sanders, 1995). It is considered a painless procedure for the animal (Pitcairn & Pitcairn-Hubble, 1982), but the psychological pain for the owner can be overwhelming (Stephens & Hill, 1996).

Many pet owners seem more distressed at the thought of euthanasia than the thought of death itself (Fogle, 1983), particularly because they have to make a life and death decision (Adamec, 1996). Bustad & Hines (1984, as cited in Adamec, 1996) identified the following stages that owners typically undergo as a reaction to contemplating euthanasia:

- **Frustration and ambivalence:** the owner doesn't want the pet to suffer, but at the same time, doesn't want to lose the animal, a conflict which causes considerable tension.
- **Acknowledgment of suffering:** The owner eventually accepts that the pet is truly suffering and decides that the animal will be euthanized. Though the

decision is made, emotions felt before, during, and after the procedure can be very intense.

- **Anger:** Members of the family may blame each other for the death of an animal, or everyone may blame the veterinarian. McCulloch & Bustad (1983) reported that veterinarians are often placed in the difficult position of mediating among family members who are in conflict about the euthanasia.
- **Loss:** In this stage, common grief reactions to loss are apparent.
- **Guilt:** A frequent reaction to the euthanizing of a pet is a very strong sense of guilt. Stewart (1983) found that many owners felt responsible for the death, and felt somehow that they had failed in caring for their pet. Whatever action owners did or did not take could be interpreted as a source of guilt.
- **Self-protection:** A final stage that many people go through, when the owner decides that he or she will never acquire another pet because they can't bear to go through this emotional pain.

Therefore, owners choosing euthanasia make a life-and-death decision that is unique to veterinary medicine - a decision which can include guilt as well as other painful emotions (Fogle, 1981). Because euthanasia is permanent, owners must clearly and rationally understand the animal's chances of survival and other alternative possibilities, and be certain that euthanasia is the only recourse to provide their pet an end to pain and suffering because, otherwise, they may be

burdened with doubts and regrets wondering if the pet could have survived (Pitcairn & Pitcairn-Hubble, 1982).

Because the owner's decision to terminate their companion animal's life is so emotionally difficult, the veterinarian often acts as counsellor (Hart, Hart & Mader, 1990) and gives medically-informed advice to the owner by addressing the animal's situation, judging the client's orientation, and facilitating the euthanasia decision or an alternative to euthanasia (Harris, 1983). The animal's quality of life is what's important in this decision. Hershhorn (1978) lists six criteria to help owners make the decision:

1. Is the condition prolonged, recurring, or getting worse?
2. Is the condition no longer responsive to therapy?
3. Is the animal in pain or physically suffering?
4. Can the pain or suffering no longer be alleviated?
5. If the animal should recover, is it likely to be chronically ill, an invalid, or unable to care for itself as a healthy animal can?
6. If the animal recovers, will he or she be likely to no longer enjoy life?

Hershhorn suggests that if the answer to all of these is questions is "yes", then euthanasia should be undertaken. If the answer to three or four of them is "no", then the pet should be permitted to die naturally, but only if the owners can provide the necessary care of the dying animal, can afford the costs involved, and can be sure that such caring will not interfere with their own life, or the lives and

well-being of members in their family. Communication of these criteria between veterinarian and the client is of utmost importance so that an appropriate decision can be made. However, in the end, it is the animal's owner, as the purchaser of veterinary services, who has the final say as to the fate of the animal (Sanders, 1995), and therefore, by signing the consent form, takes ultimate responsibility and must endure the emotional conflict for the euthanasia decision.

In a retrospective case analysis, Quackenbush & Glickman (1983) studied pet-bereaved individuals who were referred by veterinarians to a social work service due to excessive grief reactions (e.g., insomnia, anorexia, hallucinations) at the loss of their pet. Of the 76 bereaved participants, 69% were referred to the service due to problems associated with the difficulty of making a euthanasia decision. Besides being concerned about any pain or discomfort their pets might experience during the euthanasia procedure, the owners also feared that they would not be able to cope with the emotional pain and loneliness resulting from the death of their pets, as well as they did not want to carry the burden of responsibility and guilt for causing their pets to die. Though in the end, more than 90% of them chose to have their pets undergo the procedure, those in the study who decided to let their pets die naturally later reported having also felt guilt, but their guilt was for allowing the animals to die a slow and sometimes painful death.

The decision to actively terminate their pet's life is an extremely traumatic decision to have to make, but many owners feel that comfort can be extracted

from the fact that the animal had an "easy" death (Stewart, 1983). They feel they were able to give their pet a dignified, painless end to suffering, and where they, with decency and courage, were able "to act sanely, positively, and gently in the face of death" (Beck & Katcher, 1996, p.207). They feel that their veterinarian gave them the gift to help make the rational decision to terminate the life of their pet who was both loved and in pain (Beck & Katcher, 1996), and it has been reported that veterinary practitioners who are particularly skilled in handling the decision for euthanasia frequently receive greater appreciation from owners than they do for performing complex medical or surgical cures (McCullogh & Bustad, 1983). Though this was a time of great pain and anguish, many owners felt it was the best decision to make, and were appreciative of the fact that euthanasia was indeed an option (Fogle, 1981).

Though veterinary euthanasia is a widely accepted practice in this society (Fogle, 1981; Hart et al., 1990), some owners reject the option entirely. In cases where there is no real hope for a cure, and death appears to be relatively close and painless, these owners understandably will opt for a home death. In choosing this option, they allow their pet to die naturally, without having to deal with euthanasia decisions (Pitcairn & Pitcairn-Hubble, 1982).

Even in circumstances when prolonging life may simply prolong their pet's agony however, euthanasia of the pet is still often condemned. These owners view the issue of euthanasia as one of the following: playing God (Harris, 1996);

something very unnatural (Fogle, 1983); ethically wrong because it takes the life of another (Harris, 1996); and, callously disposing of the animal when it is "used up" (Sanders, 1995). They struggle to save their animal through heroic or futile efforts involving extensive care and expense (Frazier, 1990), as well as drawn-out suffering for their animal, which may violate the animal's dignity with needles, tubes, and drugs, so that eventually the animal will go in its own way (Pitcairn & Pitcairn-Hubble, 1982) ("I'm glad she died naturally and didn't have to be put down. That would've seemed so much worse") (Fogle, 1981, p.335). Though the pet may have been in great and prolonged pain, and endured a slow and inevitable death, it is likely that these owners, while feeling some guilt regarding the suffering of their animal, will not have suffered from the same regret, despair, anguish and other intense grief reactions as those who chose to euthanize their pets since they did not have to confront the decision to actively terminate a life.

Euthanasia of companion animals has, therefore, been acknowledged as an especially difficult situation for pet owners, and research has shown that veterinarians who do the euthanizing are also greatly affected (Fogle & Abrahamson, 1990; Sanders, 1995). Because this is such an emotionally-laden issue, it is important that research be focused in this area. While variables involved in adjustment to companion animal loss are beginning to be studied systematically (Stallones, 1994), there is, however, a noticeable lack of scientific research dealing specifically with reactions to euthanasia.

Euthanasia research has primarily relied on anecdotal reports written by practitioners who counsel people through companion-animal loss (i.e., Quackenbush & Glickman, 1983). While laying down a foundation for research in this area, resulting comments have been speculative and inconclusive. Scientific research that has been carried out to date with the variable of "Cause of Pet's Death" has shown non-significant differences in grief reactions between accident and illness (Planchon & Templer, 1996) as well as non-significant differences between expected vs. sudden/unexpected deaths (Gerwolls & Labott, 1994). Stallones (1994) found that issues of why the pet died, and whether the pet was euthanized, were not associated with higher depression. These results should be interpreted with caution however, as the sample was not representative of the general population of pet owners (since all owners were associated with a veterinary teaching hospital). Finally, though Archer & Winchester (1994) found that a lesser intensity of grieving was associated with forewarning (due to a possibility of anticipatory grief), it is still unknown whether anticipated death by euthanasia produces the same intensity of grief reaction as anticipated death due to natural causes.

Further research is needed to identify high-risk owners who may need on-going support. In particular, systematic investigations should include owner grief reactions due to euthanasia of their companion animals, particularly in terms of

reactions involving guilt. With previous these aims in mind, the first hypothesis of this study is as follows:

Hypothesis I:

Owners who had their companion animal euthanized by a veterinarian will display a significantly more intense grief response than those owners who lost their companion animal due to natural death.

Variables Influencing Adjustment to Companion Animal Loss

Previous research suggests that there may be specific owner characteristics and situational variables that can affect how individuals react to the death of their pet (Thomas, 1982). Therefore, in addition to the general hypothesis (Hypothesis I), this investigation will also explore some of the important variables that may influence adjustment to companion animal loss due to death caused by euthanasia compared to death by other causes.

Although there are few empirical studies of the effects of companion animal death (Stallones, 1994), those in existence are helping us to understand how the intensity and duration of the grief process may depend on certain variables. Variables that have been studied previously, and will be further explored in this study include: (i) Degree-of-Owner-Attachment-to -Pet; (ii) Gender-of-Owner; (iii) Age-of-Owner; (iv) Time-Since-Loss; (v) Type-of-Pet; (vi) Replacement-of-Pet; and (vii) Household-Make-up. For each variable, previous research will be

summarized to provide background information for the further hypotheses of this study.

Hypotheses II - VII

(i) Degree-of-Owner-Attachment-to-Pet

Though animals have played important roles in the lives of many humans throughout history (Levinson, 1972), it was not until recently that the scientific literature has acknowledged that an emotional bond can exist between a human and a pet and, because of this, the pet has become a legitimized, significant attachment figure (Cowles, 1980). Due to the presence of this emotional bond, it has been suggested that the degree of attachment between a human and an animal can largely determine the psychological impact on the owner resulting from the loss of the pet (Harris, 1983).

In their case-study research, Keddie (1977) and Rynearson (1978) found that the greater the owner is attached to a pet, the poorer the adjustment will be when the pet dies. Keddie found that pets are often used as substitutes for human companionship, especially in situations where people have difficulty in establishing closeness with others. In these cases, the loss of a pet can lead to complicated grief, resulting in depression, hysteria, or even suicide. Similarly, Rynearson found that it can be a basic distrust of human attachment which can contribute to the intense displacement of attachment to the pet which creates a pathological grief reaction when the pet dies. Both authors agree that the greater

the degree to which a pet has been placed in a quasi-human role during its lifetime, the greater will be the risk of the owner suffering a pathological, emotionally-damaging reaction after the pet has died.

Some pets are perceived as having special qualities which increase the attachment of the owner and make them irreplaceable (Cusack, 1988). From her clinical experience counselling over 90 bereaved pet owners, Carmack (1985) found that the loss experienced by owners who saw their pets as unique and unusual, and with whom they developed a special relationship, were profoundly affected by the loss. Harris (1983) conducted a quantitative analysis to compare loss and grief with conventional and non-conventional human companion-animal-bonded owners (N=73). He defined a non-conventional bond as being a very special bond with a pet, where the pet is seen as a substitute for a human relationship. Within the study period of 3 months, Harris found that 35% to 40% of the clients were non-conventionally bonded to their animals, and 74% of these owners displayed greater outward signs of grief such as crying, anger, and hysteria, compared to 40% of the conventionally-bonded owners who showed the same.

While it is cautioned against generalizing from case study research since unusual and severe cases which are not typical of grieving pet owners are highlighted (Stern, 1988), the majority of recent scientific research has also shown that highly-attached owners can experience profound effects when their pet dies.

What hasn't been considered, however, is that grief responses may actually be mediated by the owner's degree of attachment to the pet. The following section will summarize the methodologies and attachment inventories used, as well as the results found in recent research:

Rajaram, Garrity, Stallones, & Marx (1993): A representative sample of the non-institutionalized elderly was used in this cross-sectional study. 1232 participants were asked questions from the Centre for Epidemiological Studies Depression Scale (CES-D) which measures emotional distress associated with the death of a spouse, friend, relative, or pet. This scale was chosen because of its demonstrated validity, reliability, and internal consistency but, because they were unable to locate a reliable pet attachment index, the researchers found it necessary to design their own pet attachment scale. Contrary to the results of other studies, a regression analysis showed that the death of a pet was not a significant predictor of depressive symptoms, regardless of the level of the owners' attachment to the pet. Though the psychometric properties of the pet attachment scale may have contributed to these insignificant findings, it is more likely that the use of a depression scale as an indicator of grief was the cause. Though grief and depression are similar in some ways (affectively and behaviourally), they must be differentiated due to the role of cognitive factors. Therefore, when studying reactions of the bereaved, one must go beyond the depressive symptomatology (Robinson & Fleming, 1989) and explore other dimensions of the grief reaction.

Gerwolls & Labott (1994): Adjustment (operationally defined by measures of mood, physical health, and grief experience) was monitored through a series of questionnaires completed over the first 6 months following the pet's death. The clinically validated Profile of Mood States Scale (POMS; Shacham, 1983) as well as the Grief Experience Inventory (GEI; Sanders, Mauger, & Strong, 1985) were used to measure the multi-dimensional aspects of bereavement of 49 participants who were recruited from newspapers, public notices, and colleges. The Censhare Pet Attachment Survey (PAS; Holcomb, Williams, & Richards, 1985), consisting of 27 items from two subscales, Relationship Maintenance (total reliability, $k = .83$) and Intimacy (total reliability, $k = .74$) with inter-item correlations for both subscales ranging from $r = .20$ to $r = .60$, were used. Results showed that those with stronger and more intimate relationships reported higher levels of despair, anger, loss of control, depersonalization, somatization, and rumination, compared to participants reporting weaker attachments to their pets.

Archer & Winchester (1994): A 40-item questionnaire based on reactions following human bereavement (high internal validity: Cronbach's $\alpha = .94$) was used to investigate the occurrence of grief following the death of a pet in a sample of 88 people. The participants, who were contacted through veterinary clinics, a hairdresser, and a social service agency, had experienced the death of a dog or cat within one year of their participation. Degree of attachment was determined by asking how the relationship with the pet was viewed, with

responses ranging from “protector” to “companion” to “baby”. In an inter-correlational analysis, the degree of attachment to the pet showed the highest correlation ($r = .43$) with overall grief score.

Gosse & Barnes (1994): A convenience sample included 207 voluntary subjects, 21 years of age and older, who had lost a pet dog or cat within one year prior to participation. Data on grief outcome were obtained by using the validated GEI (specifically focusing on the subscales of Despair, Social Isolation, and Somatization). Only the Intimacy scale of the Censhare Pet Attachment Survey was used for data collection because validation studies by the authors revealed dog owners as obtaining significantly higher scores than cat owners on the relationship maintenance scale. The owner’s total score on the pet survey was assumed to represent his or her level of attachment to the deceased pet. Results suggest that the level of attachment to the deceased pet, the perceived degree of understanding received from others, and the level of other stressful events, had significant predictive ability in grief outcome.

Stallones (1994): In this pilot study, 45 bereaved pet owners who received counselling at a veterinary hospital counselling program were compared to 75 bereaved owners who did not receive counselling. Emotional distress was measured using the Centre for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977), which has been shown to be a valid, reliable, and internally consistent measure (Roberts, 1980). Again, however, it is important to note that

the researchers did not differentiate between grief and depression (Robinson & Fleming, 1989) which may have interfered with results. Owner attachment to the pet was assessed by using the authors' companion-animal attachment scale (Stallones, Johnson, Garrity, & Marx, 1989; Stallones, Marx, Garrity & Johnson, 1990). In this scale, 8 questions were used to assess attachment, and Cronbach's alpha was .75, with all questions loaded on one factor using principal components analyses, suggesting that the questions were cohesive and representative of a single dimension of pet attachment (Stallones et al., 1990). Results showed that those who received counselling were significantly more likely to have high depressive symptoms and, as well, were more strongly attached to their pets.

Planchon & Templer (1996): In this retrospective analysis, the correlates of degree of grief after the death of pet dogs and cats were determined. Eighty subjects from a Lutheran church were administered the Pet Attitude Scale (Templer, Salter, Dickey, & Baldwin, 1981), which is an 18-item instrument with good internal consistency and high test-retest reliability, as well as the Death Depression Scale, a 17-item true-false instrument with a Kuder-Richardson internal consistency coefficient of .77. This scale measures depressive symptoms specifically related to death, for example, death despair, death loneliness, and death dread (Templer, Lavoie, Chalgujian, & Thomas-Dobson, 1990). Results suggested that grief was associated with present death depression and a positive attitude towards pets.

Brown, Richards, & Wilson (1996): It was hypothesized in this study that the strength of the bond between an adolescent and his or her pet would predict the intensity of bereavement following the loss of an animal. A total of 55 adolescents between the ages of 12 and 17 years participated in the study. The Texas Revised Inventory of Grief (TRIG; Faschingbauer, 1981), with reliability of the subscales ranging from .70 to .90, was used to measure the intensity of grief, and two scales were used to indicate the strength of bond between the person and the animal (the Companion Animal Bonding Scale (CABS; Poresky, Hendrix, & Mosier, 1987) - which has internal consistency ranging from .77 to .82, - and the Companion Animal Semantic Differential (Poresky, Hendrix, & Mosier, 1988) which is also internally consistent and is correlated with the CABS ($r = .54$)). Results showed that adolescents who were highly bonded to a pet experienced more intense grief than do those less bonded.

In summary, the majority of scientific research has shown that companion-animal owners can experience profound effects when their pet dies, especially when there is a high level of attachment to the animal. Given the importance of this variable, it is likely that the effects of attachment could cause the differences in the grief response between factors of the independent variables in the study which include, Cause-of-Death, Gender, Type-of-Pet, Replacement-of-Pet, Time-Since-Loss, Household-Make-up, and Age-of-Owner. In order to determine whether there will be a significant relationship between attachment and grief,

where attachment will mediate the relationship between these independent variables and grief, it is hypothesized that:

Hypothesis II:

- (a) When holding the effects of owner attachment constant, there will be significant main effects between the factors of each independent variable in terms of grief response;
- (b) When holding the effect of owner attachment constant, there will be significant interactions between each independent variable and Cause-of-Death in terms of grief response.

(ii) **Gender-of-Owner**

Research determining whether there are significant differences in adjustment to pet loss between male and female owners is far from abundant. To date, there is little scientific research in this area, and most information comes from available descriptive and anecdotal reports written by practitioners who counsel people bereaved through pet loss (Carmack, 1985; Cowles, 1985; Quackenbush & Glickman, 1984). These reports focus our attention on the fact that a greater number of women compared to men seek and receive counselling for psychological, emotional, and physiological distress associated with the loss of their pet. For example, Carmack (1985), in her professional practice with bereaved owners, found that 80% of the people she worked with were female, and only 20% were male. Similarly, Quackenbush & Glickman (1984) found that

those owners referred to a social service agency due to bereavement problems in pet loss were 71% female and 29% male. In a survey of 242 couples whose pets died within a three-year period, Gage & Holcomb (1991) found that 40% of the wives and 25% of the husbands said they were “quite” or “extremely” disturbed by the loss. Women found their pets' deaths to be more stressful than the loss of a close friendship, or children leaving home, or getting married, and as stressful as losing touch with their married children. The men found the loss of an animal to be more stressful than children leaving home or getting married, and almost as stressful as the loss of a close friendship. Overall, studies show that higher percentages of women compared to men are affected by the loss of their pet which may lead us to speculate that women are at more of a risk for developing adjustment problems.

Though Gosse & Barnes (1994) also found that 79% of the owners who volunteered to take part in their bereavement study were female, their investigation went further than the previous research because they employed systematic measures to compare gender differences in the adjustment to pet loss. In their retrospective study, the researchers used the validated Grief Experience Inventory (Sanders et al., 1985) to measure the extent of despair, isolation, and somatization of the bereaved. Results showed that there were no significant differences in the measures of isolation and somatization between females and males, but there were significant differences with despair measures. The females

displayed more pessimistic thoughts and feelings during their bereavement, and they were also more apathetic than their male counterparts.

In using the Death Depression Scale (Templer et al., 1990) to determine the correlates of grief after the death of a pet, Planchon & Templer (1996) found that women seemed to more openly express emotions than men. Grief after the death of both cats and dogs was associated with the female, not male gender. Similarly, Brown et al. (1996), while investigating bonding between adolescents and pets, and the intensity of bereavement following the loss of these animals, found that the degree of bonding, when measured by self-disclosure, was greater for girls than for boys, and they consequently found that the intensity of bereavement was also greater for the female gender.

In their euthanasia research, Fogle & Abrahamson (1990) investigated the emotional response of veterinarians with regards to making the decision to end a pet's life, and then carry out the procedure of the euthanasia. Of 300 questionnaires sent out, 167 were returned by small-animal practicing veterinarians, with 72% of the responses from men. Findings indicated that a significant proportion of veterinarians experienced various forms of short-term and long-term emotional distress in response to animal deaths, and this distress was more common among women. Sensitization for future veterinarians, especially women, was suggested by the authors as women often enter the profession with emotive rather than mechanistic attitudes towards animals.

In contrast to the previous studies mentioned, Rajaram et al. (1993) found that the death of a pet remained a non-significant predictor of grief, irrespective of level of pet attachment or gender of the owner, though limitations of the instruments used (i.e., unreliable pet attachment index) may have interfered with results. Also, while systematically investigating many of the variables involved in adjustment following the death of a pet, researchers such as Gerwolls & Labott (1994), Stallones (1994), and Archer & Winchester (1994) did not consider the variable of owner gender and the impact of this variable on the grief response after the death of a companion animal. This shows that empirical investigations dealing with gender of owner have been neglected in research to date.

In summary, the lack of solid evidence in the area of gender and adjustment to pet loss leads to speculation and inconclusive results. The fact the more women than men seek and attend therapy when their pet dies is not grounds to assume that it is simply a gender issue that is the cause. Certain culture and gender stereotypes may allow women to grieve more freely than men since it is generally not acceptable for a man to show open concern and distress in public, especially if it is for an animal. Also, because women may be less restricted by employment responsibilities, they may be more available to attend counselling, or volunteer for research studies. And finally, because women may spend more time at home than men, the degree of attachment and bonding with the animal may increase and that attachment, not gender, may make adjustment to the death of a pet more difficult

for them. Though most people who seek bereavement counselling from her are females, Carmack (1985) also claims that the depth of feeling among men who come to her is just as profound. In the study by Gosse & Barnes (1994), men may have been more reluctant to admit to feelings of despair at the loss of their pet, but not as reluctant to verbalize their need be alone, or to admit the presence of their somatic symptoms such as headaches. Therefore, with the lack of research in this area, it is impossible to conclude that women will be more negatively affected by pet loss than men, though that is how it appears.

Systematic research needs to be conducted to examine gender differences to determine if women are indeed more affected in terms of severity of the grief response at the loss of a pet, in particular, with regards to Cause-of-Death .

Therefore, the next hypothesis is as follows:

Hypothesis III:

There will be a significant difference in terms of grief response between females and males.

(iii) Age-of-Owner

The literature suggests that there are specific characteristics of pet owners and their personal situations which affect the grief reaction resulting from the death of a companion animal. While the death of a pet has shown to have a strong impact on the lives of children (Robin & ten Bensel, 1985), and even more so on adolescents (Stewart, 1983), it's also important to focus upon different age groups

to determine if there is a specific group that is more at risk for developing complications in the grieving process.

While adults of all ages can be greatly affected by the death of their companion animal it is the elderly in society who can become most distressed during this time (Lago & Kotch-Jantzer, 1988; Savishinsky, 1988). As a consequence of growing old, one may lose both the opportunity and the ability to care for others (Siegel, 1990) which means that a pet, especially one which is interactive and dependent in all aspects of its life, can help to reduce an owner's feelings of uselessness and the consequent feelings of lowered self-esteem. Therefore, the pet has an important role as a companion and recipient of care, and, consequently, it is the loss of this animal that can bring forth the most intense grief responses in the older owner (Cowles, 1985). Often, the relationship with the pet is the most significant and meaningful relationship they have, especially for those who are isolated and living alone. Pets can provide older people with a sense of order, routine, and a reason to get up in the morning, and, therefore, as Levinson (1972) maintains, can make the difference between a life that is tolerable compared to a life of intolerable misery.

The emotions and thoughts of the aged when they contemplate the death of a pet are often different from other age groups because of the sum of the losses the person has had to face in their life. The elderly person may have already faced losses of friends, family, as well as hearing, vision, mobility, and the cumulative

effects can be devastating (Kastenbaum, 1969). In addition, the knowledge that a pet is dying or has died can cause the elderly person to consider his or her own mortality (Katcher & Rosenberg, 1979), especially if an issue such as euthanasia has taken place.

Therefore, many elderly people, especially those who see their pet as the primary (or even sole) nurturing being in their life, can be at great risk for severe grieving when the pet dies. In contrast to this, however, because of the number of losses the person has had to endure, it is possible that these people can be more adept at dealing with grief when their pet dies (Stewart, Thrush, & Paulus, 1989) and, therefore, may cope with the loss more effectively than other groups. Due to these inconsistencies and lack of information in the area, scientific investigations have begun to emerge which attempt to focus on age of owner, especially older adults, and their reaction to the death of their companion animal.

Using data from bereaved owners who participated in a social service counselling programme, Quackenbush & Glickman (1984) found that almost one quarter of the 76 participants studied were at or above retirement age (55 years and older). In this retrospective, descriptive study, socialization diminished for 82% of the elderly bereaved compared to 61% of the non-elderly bereaved. In addition, the authors noted a significant difference between the elderly owners and the non-elderly owners in job-related problems following the death of a pet, more specifically, 100% of the working elderly bereaved experienced job-related

difficulties after their pet's death while 55% of the working non-elderly bereaved experienced similar difficulties.

Stewart, Thrush, Paulus, & Hafner (1985), using a mailed questionnaire, attempted to conduct a preliminary systematic examination of some social-psychological variables (i.e., social networks), as well as insights into the beliefs and attitudes of the elderly regarding the death of a pet. Using a convenience sample of 220 adults, 55 years of age and older, interesting age-related information was reported. First, they found that pet ownership was inversely related to age (older owners have fewer pets); second, they found that pet ownership was inversely related to the size of the person's friendship network; third, they found that pet ownership was not perceived as a replacement for a human relationship, though 95% of the elderly owners said that their pets were family members; and fourth, they found that elderly owners experienced severe adjustment problems when their pets died, which, as the authors suggested, could be partially attributed to the lower chance that elderly owners will replace their lost pets. The authors concluded that, given the dependence and attachment that characterizes the elderly pet owner's relationship with their pet, the impact of pet death and adjustment difficulties associated with the death can differentiate the elderly from other age groups of pet owners.

In contrast to the previous age-related studies, Gosse & Barnes (1994) found no relationship between the age of owner and the grief response they exhibited

when their pet died. In this study, the researchers used a large sample size ($n = 207$), with two-thirds of the sample between 28 and 54 years, and the average age of participants being 41 years. All owners experienced pet loss within a one-year period. The authors hypothesized that there would be a linear relationship between the age of owner and the intensity of grief response. While using the validated GEI to collect data on grief variables (Sanders et al., 1985), the authors determined that there was no relationship between Age of Owner and the grief response on any of the grief scales including Despair, Social Isolation, or Somatization. Limitations, however, may have contributed to the age-related contradictory findings, e.g., the authors suggested that the results may have been confounded by other owner demographics which may have had strong associations with grief outcome, and varied considerably within the chronological age groups of the sample, limiting the ability to draw inferences in this area.

Planchon & Templer (1996), using the Death Depression Scale (Templer et al., 1990) as a measure of grief for 80 participants aged 28 to 88 years, found that, in contrast to other studies as well as most of the theoretical and anecdotal literature, a more intense grief reaction was seen with younger rather than older owners.

Overall, because of inconsistent evidence regarding the variable of age of owner and its effect on grief response when a companion animal dies, this is an area that must be further investigated. Focusing on the adult population, the next hypothesis of this study will be as follows:

Hypothesis IV:

There will be a significant difference in terms of the intensity of the grief response between various owner age groups.

(iv) Time-Since-Loss

For many bereaved pet owners, healing occurs slowly over time (Fogle, 1983). Beck & Katcher (1996) report that after the loss of a pet, the grief may be intense at first, but also may be brief, since the grief responses in this type of loss are often "run through rapidly, like a film speeded up" (p.204). Disturbances, therefore, in eating, sleeping, working, etc., that do take place generally last only a few days, at most. However, they also claim that for some owners, there may be very little integration of the loss with time, with a lingering sorrow persisting for years.

Sometimes owners are "stuck in grief" after the loss of their pet. They are terribly distraught and cannot seem to overcome their grief, even with time. For some, the grief continues just as intensely after several months, and these people claim they cannot begin to think of their pet with fondness. Their pain continues and they often seek professional counselling by means of a pet bereavement counsellor or pet loss support group (Adamec, 1996).

In their descriptive study of 218 pet owners who had been referred to a social work service for pet owners whose pets had died, Quackenbush & Glickman (1983) found that, with 93% of the clients, daily routines had been disrupted and

sleeping and eating patterns significantly altered. Social activities decreased with 70% of the clients who stayed home and mingled with people far less than was normal. Work was missed by 45% of the clients who reported missing one to three days of work. The social work intervention was carried out for 7 days and, during a follow-up 2 to 4 weeks after the intervention, half of the owners felt they could carry on with their daily activities normally again. One-third of the bereaved owners admitted to slight depression, they were not as active in socializing, they were only able to "cope" with working, but they felt less grief every day and fully expected to return to normal. A smaller fraction of the bereaved owners, however, found the pet's death to be much more problematic. At the time of follow-up these individuals were still emotionally and psychologically paralyzed from the death. These owners claimed they could still hear their animal moving around the house, they regularly put out food and water, they had dreams (or nightmares) about the pet, and they were displaying signs of deepening clinical depression. Most of these clients received professional help afterwards to help them cope.

The time it takes to recover from the loss of a pet can vary from a few days to many months (Weisman, 1991). Katcher & Rosenberg (1979) claimed that grief related to pet loss lasts an average of 10 months, and Carmack (1985) found that because of the nature and extent of the grief response, many grieving pet owners needed regular, ongoing counselling and support, even for as long as one year

(however, her research was methodologically limited by (1) using a small sample size; and (2) interviewing only her clients who were in counselling due to severe grief reactions associated with pet loss).

After interviews were conducted with bereaved pet owners by telephone, Crow & Bennett (1981) found that 85% of the owners reported frequent thoughts of the deceased pet, even when the death had occurred over a year earlier. In addition, systematic studies have been conducted to investigate the possibility that there may be a significant relationship between Time-Since-Loss and the grief response which are as follows:

Gerwolls & Labott (1994): In this study, adjustment (as defined by measures of psychological mood, physical health, and grief experience) was monitored through a series of questionnaires completed at 2, 4, 8, and 26 weeks following the pet's death. Scores on the GEI subscales generally decreased at 8 weeks and then again at 26 weeks as adjustment continued. Rapid decreases were seen in these indices during the first 2 months, and the authors interpreted this as suggesting that the major aspects of the grief experience may be more abbreviated in companion animal loss (as compared to that of human loss).

Archer & Winchester (1994): Using their 40-item bereavement questionnaire, it was found that overall grief scores were not significantly associated with Time - Since-Loss ($r = -.18$).

Gosse & Barnes (1994): In their study, using the subscales of Depair, Social Isolation, and Somatization of the GEI as a measure of grief outcome, it was found that a relationship between the length of time since the pet died and the grief response was present on each of the grief measures. However, as there was an increase in the length of time up to one year, there was a corresponding increase in the level of grief. The authors suggest that the reason for this is that some pet owners may have experienced relatively high levels of grief which remained stable over time, and because the grief response did not decrease, this could have been the motivating factor for the owner to volunteer in the study in the first place.

Overall, it appears that the grief response can vary considerably from individual to individual over time, with some individuals grieving for a few days, to others grieving over one year. Due to the lack of consistency in results, it's important to systematically investigate this variable of Time-Since-Loss with particular consideration of Cause-of-Death. Therefore, the next hypothesis in this study will be as follows:

Hypothesis V:

There will be a significant difference in grief response amongst various periods of time since loss.

(v) Type-of-Pet

Is there a particular type of pet that may make owners more susceptible to bereavement difficulties? While much of the anecdotal pet bereavement literature involves types of pets including cats, dogs, horses, pigs, cows, rabbit, birds, and even snakes and fish (Adamec, 1996), there has not been much in the way of systematic investigations in this particular area.

In her pilot study comparing bereaved pet owners who received counselling to bereaved pet owners who did not, Stallones (1994) found that those in the counselled group were significantly more likely to have depressive symptoms compared with those who received no counselling, and were also more likely to have lost a dog.

In their descriptive study, Quackenbush & Glickman (1983) found that cat owners were more likely to be referred for bereavement counselling than were dog owners. It was suggested by the authors that there may be something about cats and their owners and their relationship to one another that may make the owner more susceptible to bereavement difficulties. Archer & Winchester (1994) however, found no significant association between species of pet and overall grief score ($r = .03$).

While type of pet may not be a factor in the adjustment process because it is the nature of the relationship which may be of importance, inconsistencies in the literature provide a rationale for investigating this further. Although they did not

compare the intensity of grief between dog and cat owners, Planchon & Templer (1996) suggest there may in fact be differences, and they encourage future researchers to assess these possible differences. Perhaps the nature of the particular species of pet can have an effect, such as the fact that dogs are generally thought of as being more interactive with their owners (Lago, Knight, & Connell, 1983) compared to cats who have a reputation of being "unresponsive, distant, and aloof" (Fox, 1990, p.25). Cause-of-Death may also play a role in the possible differences in grief response. Therefore, the next hypothesis in this study is as follows:

Hypothesis VI:

There will be a significant difference in terms of grief response between dog owners and cat owners.

(vi) Replacement-of-Pet

Does replacement of the deceased or dying pet facilitate owner grief resolution? Unfortunately, it is difficult to answer this question due to the dearth of scientific information on this adjustment variable though available literature shows this to be a subject of controversy.

In her qualitative study, Stewart (1983) studied companion-animal replacement with both children and adults. Using 65 children who wrote essays about the death of their pet, it was found that many indicated that the presence of another animal helped alleviate the sorrow, and the eventual replacement of the dead

animal seemed to be very beneficial. In all bereavements in which the loss did not appear to be integrated, parents were unwilling to have another animal. Fifty-two adults were also studied using essays as well as personal interviews and correspondence. In this study, 53% of adults were helped by other companion animals, and of these, 47% replaced the animal after death, 8% introduced the animal before death, and 33% had animals already in the home. Although those owners who introduced a new animal before the death found it to be helpful, their guilt due to a sense of unfairness to the dying animal also surfaced. Overall, both studies indicated that relatively prompt replacement of the animal could be beneficial in facilitating the adjustment process.

Gerwolls & Labott (1994) conducted the only systematic investigation of pet replacement to date. In order to test whether acquisition of a new pet to replace another influences the adjustment process, owners' physical symptoms and grief responses on the GEI clinical scales were analyzed. No significant effects were found, showing that acquisition of a new pet to replace another does not influence the adjustment process in this way. However, when testing for psychological mood, they found a significant interaction between time and new pet acquisition. The group that did not acquire a new pet reported an increase in negative mood over time, whereas those who had acquired a new pet did not. At 2 months, there was a reduction in mood disturbance (improvement in mood) followed by an increase at 6 months for individuals who had not acquired a new pet. This shows

that even though obtaining a new pet does not protect against a more intense grief response, it is not associated with a resurgence in affective grief at 6 months. The authors suggest that either the presence of the new animal may have had a beneficial effect on mood, or that those whose grief was less intense to begin with felt more able to acquire a new pet. The authors also pose the possibility that the group that did not acquire a new pet had higher levels of mood disturbance to begin with and it may be that other factors that influence mood (e.g., stressors, demographics, age) could also interfere with the decision to obtain a new companion animal.

Some authors suggest, however, that replacement of the pet may not facilitate, and may even hinder, the grief process. Many pet owners believe that it is somehow disloyal to the memory of the pet they loved to obtain a new pet, which is seen particularly if they are experiencing guilt over the animal's death (Adamec, 1996), and some wish never to have another pet in order to avoid another painful experience (Katcher & Rosenberg, 1979). Some pet owners who have rushed out to buy a "clone" of their deceased pet have reported intense disappointment, almost as if they expected to reenact the past with the new pet which did not happen since even animals of the same breed can have very different personalities (Adamec, 1996). Elderly owners have also reported that replacement can be problematic, especially in the case where they themselves should take ill or die

and leave the new animal alone, and this brings forth anxiety which may have a negative effect on the health of elderly pet owners (Katcher & Beck, 1983).

In most cases of "normal" animal bereavement, some authors suggest that a replacement animal can be very successful if introduced with tact and sensitivity with respect for the value of the dead animal (Katcher & Beck, 1983; Netting, Netting, Wilson, & New, 1984). Replacement animals should not be forced upon these owners, particularly those with long-term relationships, because this may be misinterpreted as a suggestion that the relationship can be easily replaced (Netting, et al., 1984). It's often when healing has taken place that a new pet can replace the old, but the length of time this process will take can vary from person to person. There are owners as well who are in situations where replacement may never be appropriate, where grieving will not be softened by the presence of another pet (Fogle, 1983). Some authors suggest that replacement should be deferred so that the grief experience is not denied (Levinson, 1981; Pitcairn & Pitcairn-Hubble, 1982), whereas others suggest that prompt acquisition of another animal may be advisable (Bustad, 1981, as cited in Quackenbush & Glickman, 1983).

It can be seen that there is a lack of consistency in the literature with regards to whether replacement of the animal can facilitate adjustment in the grief process. Due to this inconsistency, as well as due to the lack of scientific research available, it is important to focus upon this variable to see if replacement hinders

or facilitates the adjustment process. Therefore, the next hypothesis in this study will be as follows:

Hypothesis VII:

There will be a significant difference in terms of grief response between those owners who replaced their pet, and those owners who did not.

(vii) Household-Make-up

Industrialization has shifted the family structure from extended families to nuclear families, reducing the number of potentially supportive relatives in one's environment (Rajaram et al., 1993). These social changes have resulted in more people living alone, and pets have become the companions to fill the void in their lives (Fogle, 1983; Netting et al., 1984). Research in this area has focused on how variables of family size including the absence or presence of children in the household can affect adjustment of the adult pet owners when a companion animal dies.

Carmack (1985), using information from 90 case studies of bereaved pet owners, reported that the owners who found adjusting to the loss of their pet most difficult were those who lived alone, or with one or two other people. As well, the 18% of her clients who had only their animal as a live-in companion were highly dependent on their pet and were extremely vulnerable when their pet died. Similarly, Archer & Winchester (1994), using a 40-item bereavement questionnaire, found that overall grief scores were associated with people who

lived alone when their pet died. In this retrospective study of owners who had experienced pet loss within the past year, it was found that grief reactions of those who lived alone included numbness, disbelief, preoccupation with the loss, a feeling they had lost part of themselves, and being drawn toward reminders of their pet. The authors explained that in families there is often a shared attachment to the pet and more opportunity for social support from members who are similarly affected by the loss. However, for those who live alone, that support may be absent, which may account for the high grief scores among those living alone.

In their study, Quackenbush & Glickman (1984) compared non-bereaved pet owners to bereaved pet owners who were referred to a social work bereavement service and found that fewer home-related relationships were more common among bereaved pet owners than among the non-bereaved (the authors defined bereaved pet owner as: “an individual who was referred to the social worker...because of psychological, emotional, or physiological stress associated with the death of his or her pet” (p.43)). They found that 43% of the non-bereaved owners had families consisting of 3 or more persons in the household, whereas only 30% of the bereaved owners had 3 or more persons in the household. The authors speculated that larger families may allow for a greater number of relationships and a greater opportunity for various interdependent and mutually-supportive attachments whereby members can assist each other in times

of distress such as the loss of a family pet. They concluded that no extensive support exists in two person-pet or one person-pet families and, therefore, the crisis of pet death is more difficult for the owner(s).

Gerwolls & Labott (1994) found that there was an inverse relationship between the size of the family and the member's responses of anger, social isolation, depersonalization, somatization, and rumination when a pet died. In analyzing personal essays written by participants, results also showed that those living alone reported more guilt and despair when their pet died compared to those who were married or living with another person. The authors concluded that social support and protection from social isolation are important variables in adjusting to loss.

In Planchon & Templer's (1996) retrospective analysis, grief after the death of a dog (not a cat) was not only associated with higher death depression, and the female gender, but also had a strong association with owner living alone at the time of death. The authors contend, however, that it cannot be determined whether living alone produces more intense grief, or whether persons living alone are more prone to this type of grief reaction, or whether both possibilities are correct.

Because pets usually play the role of a child (Katcher & Rosenberg, 1979), specifically as a child under three years of age (Fogle, 1983), it is possible that because the pet is a substitute for children, those owners without children in the home may display a more intensive grief response than others. Quackenbush &

Glickman (1984), in fact, indicated that the most intense reactions resulted in females who never had children of their own.

In their retrospective analysis of 207 participants, Gosse & Barnes (1994) hypothesized that pet owners living without children would have a more intense grief response when compared to owners living with a child or children, and this hypothesis was partially supported. Using several validated instruments (e.g., Grief Experience Inventory, Censhare Pet Attachment Survey), the researchers found that bereaved pet owners who lived by themselves, as adult couples and/or without a child or children, may be predisposed towards social isolation when their pet dies, but not despair or somatization. They also predicted that owners living alone would have a higher grief response than other owners. This hypothesis was not supported on any of the response measures. Because this was inconsistent with previous research (e.g., Quackenbush & Glickman, 1984), the sample was reorganized so that those living alone and those living with one other adult were combined, and then compared to owners living with more than one other adult and/or with a child or children. Results showed the response for the former group to be higher in social isolation. A third hypothesis which stated that there would be an inverse relationship between the total number of family members living in the household at the time of pet death and the owner's grief response failed to receive any support, conflicting with the results of the study by Gerwolls & Labott (1994).

The results found by Gosse & Barnes (1994) suggest that it may not be the number of people in the family that make the difference in grief response, but rather the family structure which may be the important factor. Consistent with this idea, Albert & Bulcroft (1987), in their attachment study of people to pets in urban centres, explained that the psychological and social functions of pets at various stages in the family life cycle can differ. These differing functions can affect the degree of attachment the family members have to their pets, and consequently affect the grief response when the pet dies. For example, empty-nester, divorced, co-habiting, and widowed people, as well as people who have been remarried, may feel closer to their pets than people in conventional family situations. The people in these non-conventional, high-attachment family structures indicated that their pet was an important source of emotional fulfillment, regardless of the number of people in the family, which is consistent with the results of Gosse & Barnes (1994).

After losing an animal, owners rarely talk about their feelings with anyone outside the family, which suggests a larger family environment may play an important role in integrating the loss (Katcher & Rosenberg, 1979). However, often there are disagreements between family members during this time, especially if a choice such as euthanasia of the animal was involved, and this conflict among members may hinder integration of the loss (McCullogh & Bustad, 1983). Therefore, after reviewing the previous research, it is still unclear

how family size, presence of children in the home, or family structure can affect the grief process, and it's also necessary to consider the interaction of household make-up with cause of death as well, especially if euthanasia took place. To investigate this further, the final hypothesis of this study is,

Hypothesis VIII:

There will be a significant difference in terms of owner grief response amongst various types of owner households.

Summary

Pet death, like other losses, requires that the bereaved integrate and adjust to the severe consequences of that loss. Even though society's disenfranchised view portrays this type of loss as insignificant, it does not change the fact that pet death is a common event, an event involving many decisions, emotions, and reactions of owners which makes this topic worthy of study.

Previous research suggests there may be specific owner characteristics and situational variables that can affect how individuals adjust to the loss of their pet. This study will continue this line of research in two ways. First, the differences in grief responses between those owners whose pets died of natural causes and those owners who had their pet euthanized will be investigated, an area which has been neglected in previous research. Secondly, the myriad of factors which may also be involved in how an individual responds to the death of a pet including: Attachment-to-Pet; Gender-of-Owner; Age-of-Owner; Time-Since-Pet's-Death;

Type-of-Pet; Replacement-of-Pet; and Household-Make-up will be analyzed in terms of grief response between various levels of these variables. Although not stated explicitly in the hypotheses, for exploratory purposes, interactions between each independent variable in the study and Cause-of-Death in terms of grief response will also be analyzed. The ultimate goal of this study is to elaborate upon the profile of those individuals who may find adjusting to the loss of their pet especially difficult.

Method

Participants

Participants were selected primarily at the East York Animal Clinic and Holistic Centre, a neighbourhood veterinary clinic in Toronto, Ontario, but also included were clients from other veterinary clinics who heard about the study through word of mouth. Criteria for owner participation included: (i) being 18 years of age or older; and (ii) loss due to euthanasia or natural causes (not including a pet that had run away, been adopted, or died as the result of an accident). Participation of the 103 pet owners was strictly voluntary. Seventy-four (71.8%) women, and 29 (28.2%) men participated in the study. The age of participants was divided into three main groups: 18 to 35 years, N = 27 (26.2%); 36 to 59 years, N = 56 (54.4%); and over 60 years of age, N= 20 (19.4%).

Dependent Measures

(a) **Demographic Descriptors**: Questions designed to ascertain demographic characteristics of the respondents included: Age-of-Owner (18-35; 36-59; 60+); Gender-of-Owner (male, female); Time-Since-Loss (<1 month; 1-6 months; 6 months-1 year; >1 year); Household-Make-Up (adult owner lives alone; owner lives with at least one other adult; owner lives with no other adult but with child or children; owner lives with at least one other adult and child or children); Replacement-of-Pet (yes, no, but not including pre-existing animals); Cause-of-Death (euthanasia, natural); and Type-of-Pet (cat, dog).

An open-ended question was also included, asking the participant for any additional information that they felt was important to mention (for example, discussing some of the special things that their pet did) (see Appendix A, page 120).

- (b) Attachment to Pet: The Companion Animal Attachment Scale developed by Stallones, Johnson, Garrity, & Marx (1989) was used to assess the participant's attachment to a companion animal. Previously, the 8-item scale was subjected to a psychometric analysis using a national probability sample (n=816) of United States adults aged 21 to 64 years of age. The internal consistency of the scale was assessed using Cronbach's alpha. Internal structure was assessed by principal components using varimax rotation to isolate factors (Stallones et al., 1989). Results showed a Cronbach's alpha for the overall scale to be an acceptable .75. Internal structures of the scale were shown to be good with all eight items loading strongly on one factor, indicating that all questions are cohesive and representative of a single dimension of pet attachment (Stallones, Marx, Garrity, & Johnson, 1990). A General Linear Model analysis was also used to assess the relationships of selected sociodemographic characteristics, responsibility for pet within the household, and type of pet owned, with the overall attachment score. It was found that marital status was significantly associated with the attachment score, as was caretaking responsibility, but type of pet was not. The results

from this analysis were expected, relative to companion animal attachment, offering some evidence of face validity for the scale (Stallones et al., 1989).

Overall, the psychometric properties of this instrument are acceptable in terms of internal structure and reliability. The instrument is short and easy to administer, and is not dependent on type of companion animal. Therefore, this instrument was used in the study to ascertain the attachment score (from 0 to 22) for each participant (see Appendix B, page 121).

(c) Grief Experience Inventory: The Grief Experience Inventory (GEI) was developed by Sanders, Mauger, and Strong (1985) as an objective measure of the multi-dimensions of grief. It is an instrument that is sensitive to the evolution of the bereavement process, and can be used to objectively compare the experience of bereavement among individuals as well as groups (Sanders, Mauger, & Strong, 1985). Although this instrument was normed on populations who had experienced the death of a close human family member (totalling 693 participants), it has also been used successfully in previous studies which examined the grief experience of people who had lost a companion animal through death (Gerwolls & Labott, 1994; Gosse & Barnes, 1994) (see Appendix C, pages 122-126). However, taking Adam's (1996) experience into account, where participants were unable to answer questions on the GEI not pertaining to pet death, certain questions from the original

measure were adapted by the primary investigator to relate specifically to pet death (see Appendix D, pages 127-128).

The “Death Version” of the GEI consists of 135 true and false questions which are found to be frequently associated with grieving. Nine clinical scales of the GEI measure the multidimensional aspects of grief: Despair (pessimism, feelings of hopelessness or worthlessness, low self-esteem); Anger-Hostility (level of irritation, feelings of injustice); Guilt (feeling responsible for the death); Social Isolation (withdrawal from social contacts and responsibilities); Loss of Control (inability to control emotional experiences); Rumination (preoccupation with thoughts of the deceased); Depersonalization (numbness, shock, confusion of grief); Somatization (somatic problems which occur under the stress experience); and Death Anxiety (intensity of one’s personal death awareness). Research scales including Sleep Disturbance, Appetite, Loss of Vigor, Physical Symptoms, Optimism/Despair, and Dependency are considered exploratory in nature and, therefore, are not recommended for standard clinical use. Three validity scales (Denial, Atypical Response, and Social Desirability) assess test-taking attitude, and are used to ascertain whether a clinical profile is valid for interpretation.

The GEI has been studied in several samples for reliability, and test-retest scores show that the clinical bereavement scales have reliability alphas ranging from .52 to .84, suggesting that these scales are suitable for research use. The validity of the GEI was explored by using correlations with other scales and

inventories which measured similar constructs, comparing bereaved and non-bereaved individuals, and also comparing types of bereavement (i.e., of child, spouse, or parent). Overall, these preliminary studies provide evidence that an acceptable level of validity is shown by the GEI (Sanders, Mauger, & Strong, 1985).

The administration process of the GEI is approximated at requiring 20 minutes, and it may be administered to groups or to individuals. Raw scores are transformed into T scores (see Appendix E, page 129). A T-score is a standard score with a mean of 50 and a standard deviation of 10. The larger the T-score, the greater the intensity of the behaviour measured by the scale (Sanders, Mauger, & Strong, 1985). For this study, a total grief score was computed from the T scores for each individual and the scores from the nine individual clinical scales were additionally utilized.

Experimental Design and Data Analysis

The design of this study was quasi-experimental, as the independent variables could not be manipulated (pre-existing groups were used). Participants could not be assigned randomly to the independent variable groups since they were selected by convenience.

The statistical analysis, using SPSS software, was conducted in a variety of ways. A three-phase attachment analysis was first conducted to determine whether attachment mediated participants' grief responses. Following this,

various Multivariate Analysis of Covariance (MANCOVA) procedures were run to determine the combined effects of the nine clinical scales on the independent variables. As a follow-up to the significant effects in these MANCOVA procedures, one-way and factorial (with Cause as a factor) ANOVAs were also conducted on the nine clinical scales in order to analyze the multi-dimensional aspects of grief. And finally, frequencies of themes written by the participants in the qualitative analysis were also summarized.

Procedure

Participants were made aware of this study by: (i) posters displayed in the waiting room and the pet supply shop at East York Animal Clinic and Holistic Centre; (ii) word of mouth by the veterinarian (Dr. McCutcheon), clinic staff, and principal investigator; and (iii) by phone calls placed by the principal investigator to clients who were known to have lost a pet.

- (i) Posters at the clinic (see Appendix F, page 130): Clients who expressed interest in the study after reading the poster, approached the staff at the front desk for more information. Trained staff explained the general nature of the study, purpose, confidentiality, requirements, and any potential risks to the client. If the client was still interested, the staff member recorded their name and phone number, gave them a package containing an ethical guideline form (see Appendix G, page 131), an informed consent form signed by the principle investigator and her supervisor (see Appendix H, page 132), and the

questionnaires which included: **General Information (see Appendix A, page 120), GEI (see Appendices C & D, pages 122 - 128) , and Companion Animal Attachment Scale (see Appendix B, page 121).** Some clients were able to complete the questionnaire while at the clinic, but most participants took the package home and then mailed or couriered it back to the clinic.

(ii) **Word of Mouth:** For potential participants who expressed interest in the study but did not see the poster in the clinic, the veterinarian and the clinic staff explained the study to them verbally. If they were still interested, these participants were later contacted by the principal investigator who called them, and then sent them a questionnaire.

(iii) **Phone calls:** In her capacity as a part-time clinical support staff employee at the East York Animal Clinic and Holistic Centre, the principal investigator had knowledge of clients who had lost their companion animals in the past, and also had access to clinical files regarding animals who were deceased. The principal investigator contacted some of these clients by phone, regarding the study (especially those who had not replaced their animal or did not have other animals and had no reason to come into the clinic). During this phone call, she introduced herself, sensitively introduced the study expressing the importance of the client's participation regarding _____'s (pet's name) death, gave them a general overview of their expected role in the study, length of time it would take, confidentiality, and their access to the results. If the client

agreed to participate but was not willing to come to the clinic, the investigator either hand-delivered the questionnaire package, or sent it with a self-addressed envelope to be returned.

Debriefing: Upon returning the questionnaires in person, clients were asked by trained clinic staff how they were feeling about their participation, and if there was anything they'd like to discuss regarding their experience in the study. Those participants who mailed in their questionnaires were contacted by phone. As a precaution, participants who displayed intense grief reactions were offered the name of a psychotherapist who specialized in pet loss (see Appendix I, page 133), as well as the brochure for the Metro Toronto Animal Loss Support Group (see Appendix J, page 134).

Results

Demographics

Data collection took place from May, 1998, to August, 1998. Of the 130 questionnaires that were distributed, 103 (79.23%) were fully completed and returned. With 27 of the participants, data were collected by means of a personal interview conducted by the primary investigator. The remaining 76 questionnaires were completed individually by each participant in a written format.

Fifty-seven (53.3%) participants owned dogs, and 46 (44.7%) participants owned cats. Of the 103 animals in the study, 65 (63.1%) were euthanized, and 38 (36.9%) died from natural causes. Time-Since-Pet's-Death was divided into four categories: less than 1 month, N = 13 (12.6%); 1 - 6 months, N= 21 (20.4%); 6 months - 1 year, N=19 (18.4%); and greater than 1 year, N = 50 (48.4%). After the death of their pet, 51 (49.2%) owners replaced this pet, whereas 52 (50.5%) owners did not. For those owners who did replace their pet, the length of time for replacement to occur ranged from 4 days to 10 years, with a median of 4 months. The distribution of household make-up amongst participants was as follows: live alone, N = 28 (27.2%); live with at least one other adult, N = 52 (50.5%); live with children, but no other adult, N= 5, (4.9%); and live with at least one other adult, and child or children, N= 18 (17.5%).

Data Analysis

Before data were analyzed, it was necessary to calculate an overall grief score because the GEI analyzes grief in terms of its multi-dimensional nature rather than as a whole. This was done as follows: The mean score on each of the nine clinical scales was calculated separately for each gender. Then each participant's score (taking gender into account) was analyzed separately per clinical scale. If the individual's score was greater than their respective gender mean for that scale, they were given a value of 1. Any score that was at the mean or below was given a value of 0. After this, participants' scores were totaled, resulting in a maximum value of 9. This score from 0 to 9 was then used as a total grief score.

A three-phase statistical analysis was then conducted in order to determine whether attachment mediated participants' grief responses. In the first phase, a set of ANOVAs were used to determine whether grief varied as a function of each independent variable. Due to empty cells resulting when higher factor combinations were used on the basis of predicted interactions, it was necessary to divide the analysis into the following set of ANOVAs which included: (1) A 4-way ANOVA, with Cause-of-Death, Gender, Type-of-Pet, and Replacement as factors; (2) a 2 x 3 ANOVA, with Cause-of-Death and Age as factors; (3) a 4 x 2 ANOVA with Time -Since-Loss and Cause-of-Death as factors; and (4) a 4 x 2 ANOVA with Household-Makeup and Cause-of-Death as factors. In the second phase, the same set of ANOVAs were then conducted, but this time with

attachment as the dependent variable, to determine to what extent attachment was related to the independent variables. Finally, in the third phase of the analysis, these ANOVAs were repeated with attachment as a covariate, in order to determine whether it was in fact the effect of attachment that could explain any differences in grief responses.

In the next analyses, various multivariate analysis of covariance (MANCOVA) procedures were run to determine the combined effects on the nine clinical scales of the GEI. Once again, because of the presence of empty cells in higher factor combinations, variables were combined in these MANCOVA designs (with attachment as a covariate) as follows: (1) 2(Cause) x 2(Gender) x 2(Replacement) x 2(Type-of-Pet); (2) 2(Cause) x 3(Age); (3) 2(Cause) x 4(Time - Since-Pet's-Death); and (4) 2(Cause) x 4(Household-Make-up).

As a follow-up to the significant effects in these MANCOVA procedures, one-way and factorial ANOVAs (with Cause as a factor) were also conducted on the nine clinical scales in order to analyze the multi-dimensional aspects of grief.

Attachment Analysis

(1) Total Grief as Dependent Variable

Main Effects

Gender/Type-of-Pet/Replacement-of-Pet/Cause-of-Death. As illustrated in Table 1, when total grief was used as a dependent measure in the 2(Cause) x 2(Gender) x 2(Pet) x 2(Replacement) ANOVA, there were no significant main effects of grief between the two genders, between owners of cats and owners of dogs, and between owners who replaced the pet and those who did not.

However, there was a significant main effect of Cause: $F(1,87) = 4.72, p < .05$, where those owners who allowed their pet to die naturally expressed a higher grief total than those owners who euthanized their pet (see Tables 1 and 4).

Table 1

Results of 2(Cause) x 2(Gender) x 2(Type of Pet) x 2(Replacement of Pet)
ANOVA with total grief as dependent variable

Variable	F - Value	Probability
Cause	$F(1,87) = 4.724$	$p = .032^*$
Gender	$F(1,87) = .220$	$p = .640$
Type of Pet	$F(1,87) = .717$	$p = .399$
Replacement	$F(1,87) = .124$	$p = .725$
<i>2-Way Interactions:</i>		
Cause x Gender	$F(1,87) = .295$	$p = .588$
Cause x Type of Pet	$F(1,87) = .969$	$p = .328$
Cause x Replacement	$F(1,87) = .278$	$p = .599$
Gender x Type of Pet	$F(1,87) = 1.843$	$p = .178$
Gender x Replacement	$F(1,87) = .007$	$p = .933$
Type of Pet x Replacement	$F(1,87) = .036$	$p = .850$
<i>3-Way Interactions:</i>		
Cause x Gender x Pet	$F(1,87) = .050$	$p = .824$
Cause x Gender x Replace	$F(1,87) = 3.211$	$p = .077$
Cause x Pet x Replace	$F(1,87) = .341$	$p = .561$
Gender x Pet x Replace	$F(1,87) = .533$	$p = .467$
<i>4-Way Interaction:</i>		
Cause x Gender x Pet x Replace	$F(1,87) = .007$	$p = .932$

Age-of-Owner. A 3(Age) x 2(Cause) factorial ANOVA on the dependent measure of total grief showed a main effect of Cause: $F(1,97)=7.52$, $p<.01$ (see Tables 2 and 4), but no significant difference among owners in the following groups: 18-35 years, 36-59 years, and 60+ years.

Time-Since-Loss. A 4(Time) x 2(Cause) factorial ANOVA on the dependent measure of total grief showed no significant main effects among the following times since loss: less than 1 month; 1 to 6 months; 6 months to 1 year; and greater than 1 year (see Tables 2 and 4).

Household-Make-up. A 4(Household) x 2(Cause) factorial ANOVA with total grief as a dependent variable produced a significant main effect of Cause-of-Death: $F(1,95) = 4.08$, $p<.05$ (see Tables 2 and 4), but no differences among the following Households: Owner lives alone; Owner lives with at least one other adult; Owner lives with child/children; and Owner lives with at least one other adult and at least one child.

Table 2

Results of various factorial ANOVA procedures with total grief as the dependent variable

Variable	F-Value	Probability
Cause x Age	<i>Main Effects:</i> Cause: $F(1,97) = 7.52$ Age: $F(1,97) = .952$ <i>2 Way Interaction:</i> Cause x Age: $F(2,97) = 3.788$	$p = .007^{**}$ $p = .390$ $p = .026^*$
Cause x Time	<i>Main Effects:</i> Cause: $F(1,95) = .407$ Time: $F(3,95) = 1.444$ <i>2 Way Interaction:</i> Cause x Time: $F(3,95) = .806$	$p = .525$ $p = .235$ $p = .494$
Cause x Household Makeup	<i>Main Effects:</i> Cause: $F(1,95) = 4.076$ Household: $F(3,95) = .756$ <i>2 Way Interaction:</i> Cause x Household: $F(3,95) = .262$	$p = .046^*$ $p = .522$ $p = .845$

Interactions

Gender x Cause-of-Death x Replacement-of-Pet. In the 2(Cause) x 2(Gender) x 2(Pet) x 2(Replacement) factorial ANOVA with total grief as the dependent variable, a tendency for a 3-way interaction among the variables of Gender, Cause-of-Death, and Replacement-of-Pet resulted (however, not significant): $F(1,87) = 3.21, p=.077$ (see Table 1), with \bar{X} (females who replaced their pet that died naturally) = 6.33, and \bar{X} (females who replaced their pet that was euthanized) = 3.69.

Age x Cause-of-Death. In the 3(Age) x 2(Cause) factorial ANOVA with total grief as the dependent variable, a significant interaction resulted: $F(2,97) = 3.79, p<.05$ (see Table 2). A Scheffe' post-hoc analysis revealed that owners in the 60+ age group whose pets died naturally ($\bar{X} = 5.92$) showed significantly higher total grief compared to owners in the 60+ age group whose pets were euthanized ($\bar{X}=1.71$), $F(5,97) = 2.67, p<.05$.

In summary, ANOVA procedures conducted with total grief as a dependent variable showed a significant difference between the two factors of the independent variable Cause, as well as significant interactions involving the variables of : Cause x Gender x Replacement, and Age x Cause. No significant grief differences resulted with the variables of Gender, Type-of-Pet, Replacement-of-Pet, Age-of-Owner, Time-Since-Loss, and Household-Make-up.

(2) Attachment as Dependent Variable

Main Effects

Gender/Type of Pet/Replacement of Pet/ Cause of Death. When Attachment was used as a dependent variable in the 2(Cause) x 2(Gender) x 2(Pet) x 2(Replacement) ANOVA, results showed that females were significantly more attached to their pets than males, $F(1,101) = 17.86, p < .001$. When Type-of-Pet was considered, results showed that dog owners were marginally more attached to their pets than cat owners, $F(1,101) = 3.38, p = .069$. In addition, ANOVA results showed no significant difference between owners who replaced their deceased pets and owners who did not, and finally, results showed that owners who chose to euthanize their pet were significantly more attached to the pet than were owners who allowed their pet to die naturally, $F(1,87) = 4.13, p < .05$ (see Tables 3 and 4).

Age-of-Owner. When Attachment was used as a dependent variable in the 3(Age) x 2(Cause) factorial ANOVA, marginally significant main effects of Age, $F(2,97) = 2.72, p = .071$, and Cause, $F(1,97) = 3.73, p = .056$ both resulted (see Tables 3 and 4).

Time-Since-Loss. When Attachment was used as a dependent variable in the 4(Time) x 2(Cause) factorial ANOVA, results showed a main effect of Cause, $F(1,95) = 7.77, p < .01$ (see Tables 3 and 4).

Household-Make-up. When Attachment was used as a dependent variable in the 4(Household) x 2(Cause) factorial ANOVA, no significant main effects resulted (see Tables 3 and 4).

Interactions

Gender x Cause-of-Death x Replacement-of-Pet. When Attachment was used as a dependent variable in the 2(Cause) x 2(Replacement-of-Pet) x 2(Type-of-Pet) x 2(Gender) factorial ANOVA, a marginally significant interaction between Gender x Cause x Replacement of pet was found, $F(1,87) = 2.86, p=.094$ (see Table 3), with X (females who replaced their pet that was euthanized) = 17.81, and X (males who did not replace their pet that died naturally) = 11.14.

Age x Cause-of-Death. When Attachment was used as a dependent variable in the 3(Age) x 2(Cause) factorial ANOVA, no significant interaction resulted (see Table 3).

Time-Since-Loss x Cause-of-Death. When Attachment was used as a dependent variable in the 4(Time) x 2(Cause) factorial ANOVA, a marginally significant interaction resulted: $F(3,95) = 2.24, p=.089$ (see Table 3), with \bar{X} (owners whose euthanized pets had been deceased from 1 to 6 months) = 18.08, and \bar{X} (owners whose pets that had died naturally, and had been deceased from 1 to 6 months) = 12.38.

In summary, ANOVA procedures conducted with Attachment as a dependent variable showed significant differences between the factors of the following

independent variables: Gender, Type-of-Pet, Cause-of-Death, and Age-of-Owner.

Significant interactions involving the variables of Gender x Cause x Replacement;

Age x Cause; and Time-Since-Loss x Cause also resulted.

Table 3

Results of various factorial ANOVAs conducted with the dependent variable attachment

Variable	F- Value	Significance
Gender x Cause x Type of Pet x Replacement	<i>Main Effect Cause:</i> $F(1,87) = 4.13$ <i>Main Effect Gender:</i> $F(1,87) = 17.86$ <i>Main Effect Type of Pet</i> $F(1,87) = 3.38$ <i>Main Effect Replacement:</i> $F(1,87) = .176$ <i>Interactions:</i> 2-Way , 3-Way, and 4-Way interactions non-significant except: <i>Gender x Pet x Replace:</i> $F(1,87) = 2.86$	$p = .045^*$ $p = .000^{**}$ $p = .069$ $p = .676$ $p = .094$
Age of Owner x Cause	<i>Main Effect Cause:</i> $F(1,97) = 3.73$ <i>Main Effect Age:</i> $F(2,97) = 2.72$ <i>Interaction:</i> $F(2,102) = .518$	$p = .056$ $p = .071$ $p = .598$
Household Make-up x Cause	<i>Main Effect Cause:</i> $F(4,95) = .49$ <i>Main Effect Household Makeup:</i> $F(3,95) = 1.02$ <i>Interaction</i> $F(3,95) = .937$	$p = .490$ $p = .390$ $p = .430$
Time Since Loss x Cause	<i>Main Effect Cause:</i> $F(1,95) = 7.77$ <i>Main Effect Household Makeup:</i> $F(3,95) = 1.81$ <i>Interaction:</i> $F(3,95) = 2.24$	$p = .006^{**}$ $p = .151$ $p = .089$

Table 4

Means for all dependent measures from the Grief Experience Inventory and the Companion Animal Attachment Scale

Factor	Attachment	Grief Total	Despair	Guilt	Anger	Somatize	Ruminate	Depersonalize	Loss of Control	Social Isolation	Death Anxiety
Genders:											
Male	13.93	4.59	49.7	46.8	50.4	47.2	55.8	46.1	52.0	58.9	49.8
Female	17.16	4.61	53.1	50.5	48.9	51.2	55.1	50.3	52.6	53.4	54.8
Replace:											
Yes	16.55	4.49	53.2	48.7	48.6	48.6	55.2	48.8	52.8	53.2	53.5
No	15.96	4.79	56.8	50.1	50.2	52.1	55.4	49.2	52.1	56.8	52.9
Cause:											
Euthanasia	17.05	4.19	52.1	49.3	48.2	50.4	54.3	47.9	51.1	52.5	52.1
Natural	14.89	5.32	52.4	50.5	51.4	49.9	57.1	50.7	55.5	59.9	55.1
Age:											
18-35	15.59	4.89	54.5	51.2	53.5	49.9	57.6	48.4	51.1	55.4	50.6
36-59	17.14	4.52	52.8	48.9	49.2	51.2	55.2	49.4	53.6	54.2	53.5
60+	14.65	4.45	47.2	48.7	45.7	47.9	52.9	48.6	50.9	56.6	55.7
Type of Pet:											
Cat	15.50	4.74	53.4	49.5	50.3	52.3	54.3	48.9	53.2	55.8	53.0
Dog	16.86	4.49	51.1	49.3	48.5	48.5	56.2	48.9	51.8	54.2	53.4
Time:											
< 1 month	15.54	4.23	52.4	51.9	45.9	53.6	51.9	49.9	48.4	52.5	53.3
1-6 months	15.90	5.43	53.7	49.8	50.2	53.1	57.9	50.5	53.6	61.8	54.9
6mos-1 year	15.16	5.16	52.5	46.8	56.3	48.7	58.9	48.5	54.2	56.3	52.6
> 1 year	17.00	4.14	51.5	49.6	47.9	48.9	53.9	48.6	52.4	52.8	52.8
Household:											
Alone	17.32	5.18	52.9	49.5	48.6	53.2	57.2	51.6	55.3	55.8	55.9
Other Adult	16.21	4.40	51.9	49.7	48.1	49.7	54.2	48.7	52.5	55.3	53.7
Children	14.40	4.20	45.0	48.8	54.8	43.6	60.0	45.8	44.6	61.4	43.4
Adult/Child	15.22	4.39	53.8	48.6	52.3	49.3	54.3	47.1	50.4	51.2	50.7

(3) Attachment as covariate with total grief as dependent variable

Main Effects

Cause-of-Death. Although Attachment was a significant covariate: $F(1,86) = 9.94, p < .01$, in the $2(\text{Cause}) \times 2(\text{Gender}) \times 2(\text{Type-of-Pet}) \times 2(\text{Replacement of Pet})$ ANCOVA (see Table 5) a significant main effect of Cause: $F(1,86) = 8.42, p < .01$ remained, where again, those owners who euthanized their pet expressed lower total grief than those owners whose pet died naturally. This attachment analysis therefore suggests that owners who euthanize their pets show less grief than those whose pets died naturally, and this result is not mediated by the degree of the owner's attachment to the deceased pet.

Age-of-Owner. An ANCOVA with Age \times Cause was run on the dependent variable of total grief, with attachment as a covariate. Results showed that Attachment was a significant covariate: $F(1,96) = 6.16, p < .05$, and Cause-of-Death was a main effect: $F(1,96) = 10.50, p < .01$ (see Table 6). Again, these results suggest that owners who euthanize their pets show less grief than those whose pets died naturally, and this result is not mediated by the degree of owner attachment to the pet.

Table 5

Results of 2(Cause) x 2(Gender) x 2(Type of Pet) x 2(Replacement of Pet)
ANCOVA with attachment as covariate

Variable	F - Value	Probability
Attachment (covariate)	F(1,96) = 9.94	p = .002**
Cause	F (1,86) = 8.42	p = .005**
Gender	F (1,86) = .727	p = .396
Type of Pet	F (1,86) = 2.20	p = .142
Replacement	F (1,86) = .05	p = .820
<i>2-Way Interactions:</i>		
Cause x Gender	F (1,86) = .54	p = .464
Cause x Type of Pet	F (1,86) = 1.38	p = .244
Cause x Replacement	F (1,86) = .007	p = .935
Gender x Type of Pet	F (1,86) = 2.77	p = .100
Gender x Replacement	F (1,86) = .014	p = .905
Type of Pet x Replacement	F (1,86) = .29	p = .590
<i>3-Way Interactions:</i>		
Cause x Gender x Pet	F (1,86) = .195	p = .660
Cause x Gender x Replace	F (1,86) = 5.39	p = .023 *
Cause x Pet x Replace	F (1,86) = .33	p = .566
Gender x Pet x Replace	F (1,86) = .037	p = .848
<i>4-Way Interaction</i>		
Cause x Gender x Pet x Replace	F (1,86) = .031	p = .860

Table 6

Results from various factorial ANCOVA procedures with total grief as the dependent variable and attachment as the covariate

Variable	F-Value	Probability
Cause x Age	<i>Covariate:</i> Attachment: F(1,96) = 6.16 <i>Main Effects:</i> Cause: F(1,96) = 10.49 Age: F(2,96) = .766 <i>2 Way Interaction:</i> Cause x Age: F(2,96) = 3.28	p = .015* p = .002** p = .468 p = .042*
Cause x Time	<i>Covariate:</i> Attachment: F(1,94) = 9.65 <i>Main Effects:</i> Cause: F(1,94) = 2.23 Time: F(3,94) = 2.32 <i>2 Way Interaction:</i> Cause x Time: F(3,94) = 1.05	p = .003** p = .138 p = .080 p = .375
Cause x Household-Make-up	<i>Covariate:</i> Attachment: F(1,94) = 5.27 <i>Main Effects:</i> Cause: F(1,94) = 4.94 Household: F(3,94) = .490 <i>2 Way Interaction:</i> Cause x Household: F(3,94) = .182	p = .024* p = .029* p = .693 p = .909

Household Make-up. When subjected to a 4(Household) x 2 (Cause) ANCOVA, with attachment as a covariate, Cause-of-Death was also significant: $F(1,94) = 4.94, p < .05$, as was attachment as a covariate: $F(1,94) = 5.23, p < .05$ (see Table 6). Once again, this attachment analysis suggests that owners who euthanize their pets show less grief than those whose pets died naturally, and this result is not mediated by the degree of the owner's attachment to the deceased pet.

Interactions

Gender x Replacement-of-Pet x Cause-of-Death. Due to this marginal level of significance, these variables were then combined in a 4-way ANCOVA which held Attachment as a covariate. In addition to Attachment being a significant covariate: $F(1,86) = 9.94, p < .01$, the 3-way interaction between Cause, Gender, and Replacement was also significant: $F(1,86) = 5.388, p < .05$ (see Table 5). A Scheffe' post-hoc analysis revealed that females who replaced their euthanized pet showed less grief than females who replaced their pet that died naturally, $F(7,95) = 2.715, p < .05$. Therefore, due to the significance in this attachment analysis, it is likely that this relationship exists without the mediating effects of owner attachment.

Age x Cause-of-Death. A 3(Age) x 2(Cause-of-Death) ANCOVA was conducted with attachment as a covariate. Again, a significant interaction between Age and Cause resulted: $F(2, 96) = 3.28, p < .05$, with a Scheffe' post-hoc analysis revealing that owners in the 60+ year groups whose pets died

naturally showed a significantly greater total grief response when compared to 60+ years owners who euthanized their pets, $F(5,97) = 2.67, p < .05$. Attachment was found to be a significant covariate: $F(1,96) = 6.16, p < .05$, and therefore results of the analysis suggest that the interaction between variables Age x Cause on the dependent variable of total grief was not mediated by the level of owner attachment (see Table 6).

In summary, the three-phase attachment analysis provided evidence that owners who euthanize their pet express less grief than those owners whose pets died naturally, and this effect is not mediated by the degree of owner attachment to the deceased pet. It was also found that females who replaced their pet that died naturally expressed more grief than females who replaced their pet that was euthanized, and owners in the 60+ year age group whose pet died naturally expressed more grief than owners in the 60+ year age group whose pets were euthanized. Again, the attachment analysis suggests that these relationships were not mediated by the degree of owner attachment.

MANCOVAs and Follow-up Analyses

Gender. In the $2(\text{Cause}) \times 2(\text{Gender}) \times 2(\text{Type-of-Pet}) \times 2(\text{Replacement-of-Pet})$ MANCOVA procedure which was performed on the combined clinical scales as the dependent variable, a significant difference between the genders resulted, $F(9,78) = 2.448, p < .05$ (see Table 7).

Table 7

Results from the 2 (Cause) x 2 (Gender) x 2 (Type of Pet) x 2 (Replacement) MANCOVA with combined GEI clinical scales as dependent variable and attachment as a covariate (Wilks' Lambda Criterion)

Variable	F (df 9,78)	Probability
Cause	2.362	.020 *
Gender	2.448	.016 *
Type of Pet	1.535	.151
Replacement	.836	.585
Cause x Gender	1.159	.333
Cause x Pet	1.267	.269
Cause x Replacement	.896	.533
Gender x Pet	1.021	.431
Gender x Replacement	1.160	.332
Pet x Replacement	.415	.923
Cause x Gender x Pet	1.325	.238
Cause x Gender x Replace	1.274	.264
Cause x Pet x Replacement	.678	.726
Gender x Pet x Replacement	.948	.489
Cause x Gender x Pet x Replacement	.865	.560

Significant differences between the genders also arose when factorial 2(Gender) x 2(Cause) ANOVAs were conducted with the following nine clinical scales (see Table 8) - Depersonalization: a main effect of gender showed that females experienced significantly greater depersonalization after the death of their pet, than did males, $F(1,99)= 6.24, p<.05$; and Death Anxiety: a main effect of gender showed that females experienced a significantly greater level of death anxiety than males, $F(1,99)= 5.99, p<.05$. Additionally, an interaction between Cause-of-Death and Gender was also found with this measure, $F(1,99) = 4.19, p<.05$. A Scheffe' post-hoc analysis revealed that males who euthanized their pets had significantly less death anxiety than natural death male, natural death female owners, and females who euthanized their pets, $F(3,99) = 4.54, p<.05$. And finally, an interaction was discovered between the variables of Cause and Gender on the dependent variable of Rumination: $F(1,99) = 4.73, p<.05$. A Scheffe' post-hoc analysis revealed that female owners whose pets died naturally ruminated significantly more than males whose pets were euthanized, $F(3,99) = 4.02, p<.05$.

Table 8

One-way and factorial ANOVAs on individual GEI clinical scales

Variable	Despair	Guilt	Anger	Somatization	Rumination	Depersonalization	Loss of Control	Social Isolation	Death Anxiety
Cause	F=0.0977 p=.824	F=.3831 p=.537	F=2.39 p=.1250	F=.748 p=.389	F=1.05 p=.308	F=2.39 p=.125	F=4.48 p=.037*	F=9.80 p=.002**	F=2.59 p=.111
Gender x Cause	Cause: F=.705 p=.403 Gender: F=.331 p=.072 Interact: F=.382 p=.538	Cause: F=.375 p=.542 Gender: F=4.19 p=.043* Interact: F=1.16 p=.284	Cause: F=3.08 p=.082 Gender: F=.001 p=.975 Interact: F=.956 p=.331	Cause: F=2.22 p=.140 Gender: F=3.92 p=.051 Interact: F=.469 p=.495	Cause: F=3.15 p=.079 Gender: F=.003 p=.958 Interact: F=4.73 p=.032*	Cause: F=4.73 p=.032* Gender: F=6.24 p=.014* Interact: F=.260 p=.611	Cause: F=6.87 p=.010* Gender: F=1.820 p=.180 Interact: F=1.11 p=.294	Cause: F=7.73 p=.007** Gender: F=1.16 p=.283 Interact: F=.270 p=.605	Cause: F=8.03 p=.006** Gender: F=5.99 p=.016* Interact: F=4.19 p=.043*
Age x Cause	Cause: F=1.41 p=.238 Age: F=4.15 p=.019* Interact: F=1.83 p=.166	Cause: F=.022 p=.882 Age: F=.618 p=.541 Interact: F=1.92 p=.152	Cause: F=4.91 p=.029* Age: F=5.25 p=.007** Interact: F=.390 p=.678	Cause: F=2.09 p=.152 Age: F=1.39 p=.253 Interact: F=2.74 p=.070	Cause: F=2.43 p=.123 Age: F=1.59 p=.209 Interact: F=2.29 p=.106	Cause: F=4.43 p=.038* Age: F=1.17 p=.313 Interact: F=5.29 p=.007**	Cause: F=7.66 p=.007** Age: F=1.19 p=.307 Interact: F=1.74 p=.181	Cause: F=11.59 p=.001** Age: F=.206 p=.107 Interact: F=2.29 p=.107	Cause: F=2.60 p=.110 Gender: F=.282 p=.753 Interact: F=.691 p=.508
House x Cause	Cause: F=.342 p=.560 House: F=.909 p=.440 Interact: F=.312 p=.816	Cause: F=.009 p=.924 House: F=.429 p=.733 Interact: F=.404 p=.750	Cause: F=.516 p=.574 House: F=1.73 p=.166 Interact: F=2.27 p=.085	Cause: F=2.26 p=.137 House: F=2.35 p=.077 Interact: F=.300 p=.825	Cause: F=.774 p=.381 House: F=.581 p=.629 Interact: F=1.101 p=.333	Cause: F=2.54 p=.114 House: F=1.34 p=.267 Interact: F=.518 p=.671	Cause: F=7.71 p=.007** House: F=2.42 p=.071 Interact: F=.997 p=.398	Cause: F=8.44 p=.005** House: F=1.32 p=.273 Interact: F=.385 p=.764	Cause: F=5.48 p=.021* House: F=1.68 p=.176 Interact: F=1.30 p=.278
Time x Cause	Cause: F=1.037 p=.311 Time: F=.504 p=.680 Interact: F=1.46 p=.231	Cause: F=.000 p=.992 Time: F=.603 p=.614 Interact: F=.484 p=.694	Cause: F=.076 p=.784 Time: F=4.69 p=.004** Interact: F=.019 p=.990	Cause: F=.893 p=.347 Time: F=.875 p=.457 Interact: F=.802 p=.496	Cause: F=.078 p=.781 Time: F=1.38 p=.254 Interact: F=.159 p=.924	Cause: F=.219 p=.641 Time: F=.266 p=.850 Interact: F=.839 p=.476	Cause: F=.782 p=.379 Time: F=.431 p=.731 Interact: F=.366 p=.778	Cause: F=5.45 p=.022* Time: F=2.80 p=.044* Interact: F=1.19 p=.318	Cause: F=.314 p=.576 Time: F=.645 p=.588 Interact: F=1.68 p=.176
Replace x Cause	Cause: F=.065 p=.799 Replace: F=.164 p=.686 Interact: F=1.13 p=.291	Cause: F=.419 p=.519 Replace: F=.352 p=.554 Interact: F=4.21 p=.043*	Cause: F=2.42 p=.123 Replace: F=.190 p=.664 Interact: F=1.58 p=.212	Cause: F=.669 p=.415 Replace: F=2.03 p=.157 Interact: F=.004 p=.947	Cause: F=1.14 p=.289 Replace: F=.293 p=.589 Interact: F=1.65 p=.203	Cause: F=2.60 p=.110 Replace: F=.016 p=.983 Interact: F=4.67 p=.033*	Cause: F=4.63 p=.034* Replace: F=.767 p=.383 Interact: F=.744 p=.390	Cause: F=9.45 p=.003** Replace: F=1.74 p=.190 Interact: F=.087 p=.768	Cause: F=2.59 p=.111 Replace: F=.006 p=.939 Interact: F=.424 p=.517

Type-of-Pet/Replacement-of-Pet. The 4-Way MANCOVA revealed no significant differences on the combined GEI scales dependent variable between dog owners and cat owners, as well as no significant differences between those owners who replaced their pet and those who did not (see Table 7). Therefore, follow-up analyses were not necessary with these variables.

Cause-of-Death. The MANCOVA procedure produced significant results between those owners who euthanized their pet versus those whose pet died naturally, $F(9,78) = 2.36, p < .020$ (see Table 7). Follow-up analyses on the individual GEI scales through ANOVA procedures revealed the following significant results: Loss of Control, $F(1,99) = 4.48, p < .05$, where owners whose pets died naturally experienced a greater loss of control than owners whose pets were euthanized; and Social Isolation, $F(1,99) = 9.80, p < .01$, where owners whose pets died naturally were significantly more socially isolated than owners whose pets were euthanized (see Tables 4 and 8).

Age-of-Owner. In the 2(Cause) x 3(Age) MANCOVA procedure which was performed on the combined GEI clinical scales as the dependent variable and attachment as a covariate, a main effect of Cause resulted, $F(9,88) = 2.68, p < .01$ (see Table 9). A follow-up analysis using a 3(Age) x 2(Cause) factorial ANOVA on the individual scales produced the following significant results (using Scheffe' post-hoc analysis): Despair: a significant main effect of age resulted: $F(2,97) = 4.15, p < .05$, with a post-hoc analysis revealing that owners in the 18-35 year age

group showed significantly more despair when compared to owners in the 60+ age group ; Anger/Hostility: a significant main effect of age resulted, $F(2,97) = 5.25$, $p < .01$, where owners in the age group 18-35 years showed significantly greater anger/hostility at the loss of their pet compared to those owners who were 60 years of age and older; Depersonalization: a significant interaction between Cause-of-Death and Age-of-Owner resulted, with $F(2,97) = 5.29$, $p < .01$, where significant differences resulted between those owners who were in the 60+ age group who euthanized their pet showed significantly lower scores when compared to owners in the 60+ age group whose pet died naturally, as well as owners in the 36-59 age group whose pets died naturally (Scheffe' post-hoc analysis: $F(5,97) = 2.708$, $p < .05$) (see Table 8).

Time-Since-Loss. In using the 4(Time) x 2(Cause) MANCOVA with attachment as a covariate and the combined GEI scales as the dependent variable, a marginally significant main effect of Time resulted, $F(27, 251.81) = 1.51$, $p = .057$ (see Table 9). A follow-up analysis using 4(Time) x 2(Cause) ANOVAs on the individual GEI scales produced the following significant results: Anger/Hostility - Those owners whose pets had been deceased in the period of 6 months to 1 year were significantly more angry/hostile than those owners whose pet had died in the period of <1 month, as well as those owners whose pets had been deceased for more than 1 year, as shown by the main effect of Time, $F(3,95) = 4.69$, $p < .01$; and Social Isolation : Owners whose pet had been deceased for at least 1 year were

significantly less socially isolated than those owners whose pets had been deceased for 1 to 6 months, as well as those owners whose pets had been deceased from 6 months to 1 year, as shown with the main effect of Time, $F(3,95) = 2.80$, $p < .05$ (see Table 9).

Household-Make-up. The 2(Cause) x 4(Household-Makeup) MANCOVA with attachment as a covariate and the combined GEI scales as the dependent variable showed a main effect of Cause of Death, $F(9,86) = 2.03$, $p < .05$, as well as a main effect of Household Makeup, $F(27, 251.81) = 1.70$, $p < .05$. Follow-up analyses using 4(Household) x 2(Cause) factorial ANOVAs on each of the nine GEI clinical scales showed main effects of Cause with Loss of Control, Social Isolation, and Death Anxiety. A marginal main effect of Household Makeup was found with the variable of Loss of Control, $F(3,95) = 2.42$, $p = .071$ (see Table 8), with the means of each group as follows, Lives alone: $\bar{X} = 55.3$; Lives with at least one other adult: $\bar{X} = 52.5$; Lives with no other adult but child/children: $\bar{X} = 44.6$; and Lives with at least one other adult and child/children: $\bar{X} = 50.4$ (see Table 4).

Table 9

Results of various MANCOVAs with combined GEI clinical scales as dependent variable and attachment as a covariate (Using Wilks' Lambda Criterion)

Variable	F-Value	Probability
Cause x Time Since Pet's Death	<i>Main Effect Cause:</i> F(9,86) = 1.66 <i>Main Effect Time:</i> F(27,251.81) = 1.51 <i>Interaction:</i> F(27,251.81) = 1.09	p = .112 p = .057 p = .351
Cause x Owner's Age	<i>Main Effect Cause:</i> F(9,88) = 2.68 <i>Main Effect Age:</i> F(18,176) = .97 <i>Interaction:</i> F(18,176) = 1.35	p = .009 ** p = .499 p = .162
Cause x Household Makeup	<i>Main Effect Cause:</i> F(9,86) = 2.03 <i>Main Effect Household:</i> F(27,251.81) = 1.70 <i>Interaction:</i> F(27,251.81) = 1.03	p = .045 • p = .019 • p = .419

Supplemental analyses were then conducted on the variable of Household Make-up by reorganizing comparison groups. First, owners who lived alone (n=28) were compared with the rest of the owners combined (n = 75) to investigate whether living alone could make owners more vulnerable to an intense grief reaction when compared to those owners who lived with at least one other person. One-way ANOVAs conducted on all grief measures once again showed no significant differences between the two groups, with the exception of Somatization, $F(1,101)=4.34$, $p < .05$, where \bar{X} (alone) = 53.57, \bar{X} (combined) = 48.79 (see Table 10).

Secondly, owners who lived with children (n= 23) were compared to owners who did not (n = 80), to investigate whether having children in the home could protect owners from an intense grief reaction. One-way ANOVAs conducted on all grief measures once again showed no significant differences between the two groups (see Table 11).

Table 10

Results of one-way ANOVAs conducted on all grief responses from the Grief Experience Inventory, which compared owners who lived alone versus owners who lived with others

Grief Measure	F- Value	Probability
Grief Total	F(1,101) = 1.75	p=.1889
Guilt	F(1,101) = .0058	p=.9395
Social Isolation	F(1,101) = .3285	p=.5678
Anger/Hostility	F(1,101) = .0830	p=.7739
Rumination	F(1,101) = .3230	p=.5710
Depersonalization	F(1,101) = 3.88	p=.0516
Somatization	F(1,101) = 4.34 X(combined)=48.78 X (alone) = 53.5714,	p=.0397 *
Despair	F(1,101) = .277	p = .599
Loss of Control	F(1,101) = 3.08	p= .0822

Table 11

Results of one-way ANOVAs conducted on all grief responses from the Grief Experience Inventory which compared owners who lived with children and owners who did not.

Grief Measure	F - Value	Probability
Total Grief	F(1,101) = .258	p=.6126
Guilt	F(1,101) = .861	p=.3558
Social Isolation	F(1,101) = .668	p=.4156
Anger/Hostility	F(1,101) = 3.81	p=.0536
Rumination	F(1,101) = .146	p=.7036
Depersonalization	F(1,101) = 2.68	p=.1048
Somatization	F(1,101) = 1.96	p=.1650
Despair	F(1, 101) = .153	p=.6965
Loss of Control	F(1,101) = 2.47	p=.1195

Qualitative Analysis

Upon asking participants to add additional comments about their pet loss, 75 of the 103 (72.8%) of the participants obliged. In completing this task, 13 (44.8 %) of the males utilized a median of 31 words when commenting, and reports ranged from 7 to 123 words. Sixty-two (83.8%) female participants elaborated on this topic with a median of 460 words with a range of 3 to 2890. Themes from the comments of each participant were recorded by the principal investigator which then were subsumed into eight broader categories which included: adjectives used to describe the pet; special things the pet did; replacement issues; relationship with the pet; circumstances of the death; ways the pet is remembered; feelings about the loss; and veterinary social support.

Discussion

The present study predicted that a number of factors would be involved in the grief response of owners who were faced with the loss of their companion animal. These factors included: Cause-of-Death, Gender-of-Owner, Attachment-to-Pet, Type-of-Pet, Replacement-of-Pet, Age-of-Owner, Time-Since-Loss, and Household-Make-Up. These factors will be discussed in terms of the statistical findings, followed by implications for veterinarians and mental health professionals, limitations of the study, and directions for future research.

Cause of Death. Hypothesis I predicted that owners who had their pet euthanized by a veterinarian would display a significantly greater grief response than owners who lost their pet to natural causes. Although this hypothesis was not supported, the surprising and opposite finding, that owners who had their pet euthanized by a veterinarian displayed significantly less grief than owners who lost their pet to natural causes, was of most importance in the current study.

In the attachment analysis, results showed that owners who chose to euthanize their pets were significantly more attached to their pets than were owners who allowed their pets to die naturally. However, this effect of attachment did not interfere when total grief was used as a dependent measure, since the significant effects of Cause-of-Death were seen with and without the effects of attachment, providing support for Hypothesis II. Significant interactions with Cause-of-Death

x Gender x Replacement-of-Pet, as well as Cause-of-Death x Age-of-Owner also resulted without being mediated by the level of owner attachment.

Follow-up analyses on the individual GEI scales comparing those owners who euthanized their pets versus those whose pets died naturally also produced significant differences without the mediating effects of attachment. These involved scores on the GEI scales of Social Isolation and Loss of Control, where owners whose pets died naturally were significantly higher on both scales than those owners whose pets were euthanized.

Though opposite to the predicted outcome, the current study found that owners who euthanized their pets expressed less grief than owners whose pets died naturally. This surprising result, for the most part, runs contrary to the results of most other investigations. Anecdotal (i.e., Pitcairn & Pitcairn-Hubble, 1982), and descriptive (i.e., Quackenbush & Glickman, 1984) reports in the past have suggested that owners who euthanize their pets will be more distressed than natural death owners because of the burden of responsibility for death and the overwhelming emotion of guilt. Systematic investigations (i.e., Gerwolls & Labott, 1994) have generally found non-significant differences among the different causes of death, however, methodological limitations (e.g., small sample sizes, unreliable instruments) and the general lack of attention to the area have left researchers with inconclusive findings. The Cause-of-Death finding of the current study is, therefore, of considerable importance because: (1) it has not been

discovered in previous research; (2) it represents a very significant relationship because it still exists when the effects of owner attachment are controlled; (3) it is involved in important interactions with Gender and Replacement of Pet (where females who replaced their euthanized pet showed less grief (total) than females who replaced their pet that died naturally), as well as with Age (where owners in the 60+ age group who euthanized their pet showed less grief when compared to owners in the 60+ group whose pets died naturally); and (4) it is an additional grief-related variable that can be incorporated into the profile of the bereaved pet owner.

In an attempt to understand why owners who euthanized their pets expressed less grief than owners whose pets died naturally, it is important to look at the significant findings on the subscales of the GEI, which include Social Isolation and Loss of Control.

It was found that owners whose pets died naturally experienced significantly greater Social Isolation when compared to owners who had their pets euthanized. From comments provided by many of the participants who euthanized their pet, it seemed as though veterinary social support played a central role in helping them through this difficult time, and this may have protected them from these feelings of social isolation. For example, "...the veterinarian and the staff at the clinic were amazing...I am thankful they were there to help me make the decision to euthanize Cory"; "...if it weren't for the support I received from the veterinary

staff, I don't think that I could have coped with Tramp's death nearly as well". On the other hand, owners who chose a natural death for their pet may have avoided the veterinary clinic altogether, due to possible disapproval from the veterinarian about their decision to opt for a natural death, as well as for fear of being pressured to euthanize the pet. They may have also withdrawn from other sources of potential support, such as friends and family, for similar reasons. One participant explained verbally that she was forced to withdraw from others because they provided her with no support in her decision to let her pet die naturally. She explained that others called her selfish and condemned her for her decision because they felt she was forcing her pet to go through a lot of unnecessary, drawn-out suffering, while they did not even attempt to understand her reasons for this choice. She felt they were insensitive and judgmental during this time, which left her feeling very socially isolated.

It was also found that owners whose pets died naturally experienced greater loss of control than owners who had their pet euthanized. Creators of the GEI refer to loss of control as a person's inability to control their overt emotional experiences, such as crying for example, and can also include possible tensions, anxiety, and stress (Sanders et al., 1985). Perhaps owners who euthanized their pets did not experience this loss of control to the extent that natural death owners did because of their active involvement in the euthanasia process. In deciding how the pet was going to go, where, when, and by whom, owners may have felt a

type of control that enabled them to cope more effectively with the loss when the time had come, for example: “During the last six months of her life, my vet helped prepare me in a very gentle manner that her life was coming to an end. I feel fortunate that I was given that time to come to grips emotionally with what I eventually had to do”; “my grieving period was acute for three months while she was ill up until she was euthanized, and after that, I felt a sense of relief”; and “I feel fortunate that we were able to choose the time for her and that she didn’t die alone ... we were able to spare her from wasting away in pain from the cancer, which really helped us deal with the euthanasia”. Owners whose pets died naturally, on the other hand, would not know exactly when the pet was going to die, and may have even been hoping for a miraculous recovery, which is why they may have decided that euthanasia was not an option. These owners, therefore, may not have been as prepared for the death as the owner who euthanized the animal, and they may have experienced greater loss of control after the death had taken place.

Gender. An investigation was conducted into the possibility that there may be a significant difference among females and males in terms of their grief responses (Hypothesis III). Though it was found that females were significantly more attached to their pets than males, no significant differences in total grief resulted between the genders. However, the hypothesis was partially supported when the interaction of Gender x Cause-of-Death x Replacement-of-Pet was considered, as

well as when scores on the Depersonalization, Death Anxiety, and Rumination scales of the GEI were compared.

Descriptive and anecdotal reports (i.e., Cowles, 1985; Quackenbush & Glickman, 1984), as well as empirical studies (i.e., Planchon & Templer, 1996), have suggested that a far greater number of females compared to males have difficulty associated with the loss of their pet. However, similar to Rajaram et al. (1993), the present study did not find such a result when comparing total grief scores between the genders. This is surprising considering there was such an extreme qualitative difference between the genders. When asked to comment about their pet loss experience, females wrote on average 13 times more than males, with comments about the loss such as “I cried for four days when he died and I didn’t think I would ever be happy again”; and “... after she was put down I cried for days and mourned for months. I still mourn to this day. I’m crying as I’m typing this and it’s been three years...”. Males on the other hand, limited any feelings about losing the pet to comments such as “he was cool”, and “Toby had a short life, dying from FIP at approximately six months of age”. Given this, it seems likely that males would be less willing to disclose their feelings and admit to less grieving on the questionnaire, however, this did not appear to be the case. Perhaps because they didn’t elaborate on the written part of the questionnaire, males in the study felt more obligated to express their actual feelings in the true/false part of the GEI. Also, because answering true/false questions could be

considered more anonymous than writing personal comments, males may have felt more comfortable answering these questions more truthfully, and therefore the similarity in scores between the genders resulted.

In measuring total grief, an interaction among the variables of Gender x Cause-of-Death x Replacement-of-Pet resulted. It was shown that females who replaced their euthanized pet expressed less grief than females who replaced their pet that had died naturally. With this interaction, Hypothesis II was also supported, since this relationship existed without the mediating effects of attachment. This interaction is important because not only does it provide further support for the findings of Hypothesis I, but it also indicated that females who replaced their pet that died naturally were more distressed than those females who replaced a euthanized pet, and this is a phenomenon that was not seen with males.

Consistencies with previous research are more apparent when scores on the individual GEI scales are considered. Similar to the findings of Gosse & Barnes (1994), the present study found that females who had lost a pet had significantly higher depersonalization and death anxiety scores than their male counterparts. While this may be the case, there could be another plausible explanation involving cultural/gender stereotypes. It's possible that males were simply not willing to openly express emotions on the questions that were associated with these particular scales of the GEI. With depersonalization, males may have been reluctant to admit to feelings of loss of control or confusion regarding the loss,

compared to females. Additionally, with death anxiety - the scale that is most highly affected by social desirability compared to the other scales (Sanders et al., 1985), males may have also masked their feelings due to cultural expectations and, therefore, biased their answers.

And finally, interactions were found between Gender x Cause-of-Death on the Rumination scale of the GEI (where females whose pets died naturally ruminated significantly more than males whose pets were euthanized), as well as the Death Anxiety Scale (where males who euthanized their pet had significantly less death anxiety than all other groups). Once again, these results provide support for the results of Hypothesis I, and may suggest that either females ruminate more than males, or that males are reluctant to admit to ruminating in comparison to the female group.

Type of Pet. Inconsistencies in previous research prompted an investigation of the possibility of significant differences between cat owners and dog owners in terms of their grief responses (Hypothesis VI). While dog owners may have been slightly, though not significantly, more attached to their pets than cat owners, no differences in grief responses resulted and, therefore, this prediction could not be supported. Additionally, no differences were found when the relationship between Type-of-Pet x Cause-of-Death was investigated on all response measures.

Consistent with the results of Archer & Winchester (1994), it appears that there is not a particular species of pet that makes owners more susceptible to

bereavement difficulties. In fact, when participants provided written comments about their deceased pet in the qualitative section of the questionnaire, it was very difficult to distinguish the type of species they were referring to, for example, “source of strength, comfort, and love”(referring to a dog); “classy lady, discerning, discriminating...reminiscent of a lady from the Victorian Era” (referring to a cat); “quirky, funny, endearing little creature”(referring to a dog); “very smart, did not like to be made fun of”(referring to a cat); and “a great protector of property” (referring to a cat). This lends support to the fact that intensity of grief is not determined by the species of the animal, but instead is more likely based upon the owner’s relationship with the pet.

Replacement-of-Pet. It was predicted by Hypothesis VII that there would be a significant difference in grief response between those owners who replaced their pet after its death, and those who did not. Consistent with the initial replacement results of Gerwolls & Labott (1994), this prediction was not supported since no significant differences resulted when the two groups were compared on the variable of total grief.

Based on these results, it is not possible to conclude whether replacement facilitates or hinders the grief process. However, some of the comments provided by participants regarding replacement of their pets may shed some light on this relationship. To begin, many participants were offended by the wording of the replacement question, evidenced by their comments such as “...my pets are all

individuals - none of them are replacements for another!!!"; "...no relationship can be replaced, whether it is human or animal..." which suggests that this is a very emotional topic for owners. Approximately 50% of the participants in the study had not replaced their pet, possibly due to reasons exemplified by the following comments: "because Katy's death was so difficult for me, I have always vowed never to get another pet"; and "We have a dog now, but that's mostly because of my son. I did not try to replace the dog I lived with twenty years ago because he was more than just a dog to me. He was the finest creature I'd ever met, and you just don't go out and 'buy a new one'".

Many of those who replaced their pet did so because they found it difficult to live without a pet in the home: "...after six months, the pain of not having a pet was too great and I made a decision to have another"; "...most dogs share our lives for only a few brief years. It is always painful when they go and I always swear that I'll never grow attached to another animal, but there always seems to be a next time", and eventually replaced the animal. As well, for many of the participants who replaced their pet, the deceased pet was not forgotten: "My husband bought me a new puppy for Christmas - a golden lab. Her name is Ginger and although I love her very much, a part of me wishes Venus was still here with us"; "When we were finally ready to get another dog, we didn't dare get another White Shepherd, even though that's what we wanted more than anything. We felt that it wouldn't be fair to the puppy who was trying to live up to (and

probably never could) Juma's memory". Though it is possible that some owners replaced a pet that they were not ready for and found that grief resolution was hindered, no participants commented on such an experience.

Given the previous comments, and the fact that owners who replaced their pets did so over a range of 4 days to 10 years, it is likely that the choice of whether or not to replace a pet is a very individual decision for owners. For some owners, grieving may be facilitated by the presence of another pet, but for others, replacement may never be appropriate. It seems though, for those owners who do replace, they know when the time is right for them - when their grief has been resolved enough to be able reinvest emotionally in a new pet.

Age-of-Owner. An investigation was conducted into the possibility that there may be a significant difference among the owners in the following age groups: 18 to 35 years; 36 to 59 years; and 60+ years, and their grief responses (Hypothesis IV). Consistent with the results found by Gosse & Barnes (1994), no significant differences resulted when the groups were compared on the variable of total grief. However, the hypothesis was partially supported when the interaction between Age x Cause-of-Death on the variable of total grief was considered, as well as when scores on the Despair and Anger/Hostility scales of the GEI were also compared.

Most theoretical literature (i.e., Stewart et al., 1989) and results from qualitative studies (i.e., Quackenbush & Glickman, 1984) suggest that it is the

elderly in society who become the most distressed at the death of a pet, however, this was not found in the present study. Interestingly though, an interaction between Cause-of-Death and Age resulted which showed that owners in the 60+ age group whose pets died naturally expressed significantly more grief than those owners in the 60+ age group whose pets were euthanized, and this was not mediated by the effects of owner attachment.

Perhaps the difference between these two groups can be explained in terms of parallels the owners may draw between themselves and the dying/deceased pet. Because owners in the 60+ age group may have already begun to consider their own mortality, their pet's death may stimulate unresolved conflicts regarding death and dying, especially if the pet died naturally. When observing their pet in the final stages of illness, dying slowly and painfully for example, it may be brought forcefully to the owner's consciousness the realization that this is the way in which they may also go, since euthanasia is not a viable human option. However, for those owners in the 60+ age group who chose to euthanize their pet, though aware that euthanasia is not an option for themselves, they did not have to observe their pet struggling to the extent that the other group did and, therefore, were not confronted as intensely with these issues that could be paralleled with their own death. Therefore, an explanation such as this may suggest why the 60+ owners who euthanized their pet did not express as much grief as the 60+ group whose pets died naturally.

Other interesting findings resulted when the scores from scales of the GEI were compared in terms of age. On both the Despair and Anger/Hostility scales, owners in the youngest age group (18-35 years) showed higher scores than owners in the 60+ age group. These results are similar to those of Planchon & Templer (1996) who found that a more intense grief reaction over the loss of a cat was seen with younger owners rather than older owners.

Owners in the 18-35 age group expressed significantly more despair than owners in the 60+ age group, and this group difference may be explained in terms of the nature of the owner-pet relationship. Comments provided by owners implied that the youngest group seemed to rely most intensely on their pet compared to any other group, for example: "...he was God's gift to me during the processing of many turbulent circumstances in my late teens and twenties. We worked through healing together. He was faithfully with me through health and grief issues - a quiet, appreciative listener"; "she was my closest companion through some of the most difficult years of my life. She was always there and I felt really partnered", "I was still a teenager when we got him, and he was my comfort through troubles and changes in my family", and these may have contributed to their feelings of despair when the pet died.

This group also expressed greater anger/hostility than the 60+ age group which may be due to the nature of the relationship with the pet, but another explanation is possible. Perhaps owners in the 18-35 age group, because they are young, have

not considered death, dying, or illness issues to the extent that those owners in the 60+ age group may have, and thus are faced with a situation they can't accept or don't understand. For example: "...to this day I still can't understand why Winston was taken from us at such a young age - he was only a year old - it both saddens and angers me at the same time", and "while my dog Lucille died in her sleep, I still have a lot of anger about her death. She passed away during a very difficult time in my life when we were without a permanent home for over a year, and although I'm not sure, I can't help but think that this is what contributed to her death".

Owners in the 60+ age group, in contrast, may view death and dying with a more resolved perspective, for example, one elderly participant wrote: "I feel it was right...there is no residue...she used up her resources... she is gone". Stewart et al. (1989) suggest that since they have already faced many losses in their life, older owners may be more adept at coping with their feelings surrounding the loss, and these feelings may include despair and anger.

Time-Since-Loss. Hypothesis V predicted that there would be a significant difference in the grief responses among owners who had lost their pet within the various periods of time: < 1 month; 1 to 6 months; 6 months to 1 year; and > 1 year. Similar to the results found by Archer & Winchester (1994), this hypothesis could not be supported with the variable of total grief. However, the hypothesis

could be partially supported when two individual scales (Anger/Hostility, and Social Isolation) of the GEI were considered.

With the Anger/Hostility scale, it was found that scores were lower for those participants who had lost their pet within the last month, as well as those who had lost their pet for over a year, but these scores were significantly higher during the 6 month to 1 year time period since loss. In contrast to this finding, Gerwolls & Labott (1994) found that participants' anger/hostility scores progressively decreased up to a 6-month period after the loss of their pet, which intuitively makes more sense. What could account for results of the present study? Perhaps grief related to pet loss can last for a period of one year, with an acute phase taking place over a short period. Perhaps many owners have resolved the loss, including the anger/hostility aspect after the 1-year period, accounting for the lower scores in this time frame. However, though owners may not feel anger and hostility about the death immediately (within the first six months), they may begin to experience this acutely after this period, accounting for the peaking in the scores at 6 month to 1 year time frame since loss.

Results of the present study also found that with the clinical scale of Social Isolation, owners whose pets had been deceased for > 1 year were significantly less socially isolated than those owners whose pets had been deceased for 1 to 6 months, as well as those owners whose pets had been deceased from 6 months to 1 year (and not significantly different from the < 1 month since loss group).

Perhaps social support given to bereaved owners (from the veterinarian and staff, family, and friends) during the first month since loss helped owners combat feelings of social isolation at this time. However, with the period of time from 1 month to 1 year, a great deal of this social support will have been withdrawn, leaving the bereaved owner to receive little sympathy and support from others which may have impaired the resolution of grief and isolated the grieving owner. Perhaps after a one-year period, grieving may have subsided, a new pet may have even been acquired, and it is likely that owners will be less vulnerable to feelings of social isolation at this time.

Household-Make-Up. It was predicted in Hypothesis VIII that there would be a significant difference in the grief responses among owners who lived in the following households: lived alone; lived with at least one other adult; lived with child/children but no other adult; and lived with other adult(s), child/children, however, this hypothesis was not supported on any of the response measures. Similarly unsupported was the hypothesis that there would be a relationship between the various types of household structures and whether the pet was euthanized or died naturally. These results are consistent with those of Gosse & Barnes (1994).

Supplemental analyses were conducted by reorganizing the Household-Make-up groups. In order to investigate whether having children in the home could protect owners from an intense grief reaction, one analysis compared owners who

lived with children with owners who did not. Although it seemed possible that owners without children would show higher grief because their pet may have been a substitute for a child (i.e., “she was like a daughter to me who would scold me if she felt I had been too late”; “Teddy will always be the child I lost”; “Lukie’s favourite toys were Mommy’s slippers and dirty socks”), no significant differences between the two groups resulted. A second analysis compared owners who lived alone with owners who lived with at least one other person. In this case, those owners who lived alone did not appear to have more difficulty adjusting to the loss of their pet with the exception of higher Somatization. A possible explanation for the similarity between the groups can be described in terms of availability of social support. As Archer & Winchester (1994) explain, for owners who live with others, there will be presumably shared attachment to the pet and greater opportunity for social support from others similarly affected by the loss. However, no such extensive support exists for those living alone.

Therefore, in order to combat the negative effects that can arise due to this absence of support, these owners who live alone may reach out to external support sources such as the veterinarian and his or her staff - perhaps more than owners who live with others. As found in the study by Adams, Bonnett, & Meek (1998), veterinarians were identified by clients as being the best people to provide support because they validated and normalized the pet loss experience. Therefore, owners in the present study who lived alone may have been protected from many of the

negative effects of pet loss by relying on this type of support - almost to the point that is seen with owners who live with others.

Summary of Findings

The overall findings of this study suggest that there are a number of variables that may place owners at risk for intense grief reactions due to the loss of their pet. With respect to the different levels of these variables, results of the study showed:

(1) *Cause-of-Death* - owners whose pets died naturally experienced significantly more total grief, social isolation, and loss of control compared to owners who had their pets euthanized; (2) *Gender-of-Owner* - female owners experienced significantly greater depersonalization, death anxiety, and rumination compared to males; (3) *Age-of-Owner* - owners in the 18-35 year age group expressed significantly greater anger/hostility and despair than owners in the 60+ age group; (4) *Time-Since-Loss* - owners who had lost their pet between 6 months to 1 year were significantly more angry/hostile when compared to owners who lost their pet in the time period less than 6 months or greater than 1 year; and also, owners whose pets had been deceased from 1 month to 1 year were significantly more vulnerable to social isolation, compared to the other groups; (5) *Household-Make-up* - owners who lived alone experienced significantly greater somatization than owners who lived with others; (6) *Cause-of-Death x Gender x Replacement-of-Pet* - female owners who replaced their pet that had died naturally experienced significantly more grief than female owners who replaced their pet that had been

euthanized; (7) *Gender x Cause-of-Death* - female owners whose pets died naturally ruminated significantly more than males whose pets were euthanized; and (8) *Cause-of-Death x Age* - owners in the 60+ age group whose pets died naturally experienced significantly more grief than owners in the 60+ age group whose pets were euthanized. Consistent with previous research, no generalizations could be drawn from the variables of Type-of-Pet (Cat, Dog) and Replacement of Pet (Yes, No).

Contributions

The present study has gone beyond the common, descriptive type of pet loss study because it has rigorously attempted to isolate the personal and situational variables of owners that may influence the grief response after the loss of their companion animal. In addition to the new information this study has provided, it has made a valuable contribution to this relatively-neglected area of research due to methodological strengths which included: (1) utilization of instruments with strong psychometric properties (i.e., the GEI and Companion Animal Attachment Scale); (2) an operational definition of grief in terms of a total score as well as its multidimensional aspects; (3) control employed in terms of owner attachment; (4) multivariate statistical analyses; (5) a high response rate which led to a large sample size; and (6) the addition of a qualitative element to the study which provided useful insights in understanding the quantitative results. Given these methodological strengths, it's likely that the results of this study could be

meaningful in predicting the grief response of pet owners. Therefore, it is possible that they would also be valuable in helping veterinary staff and mental health professionals improve their understanding of this type of experience in order to provide intervention for owners when necessary.

Because it is common that the veterinarian is the first individual whom an owner relies on in dealing with the loss of their pet, he or she must be acutely aware of the significance of the owner's loss so it can be dealt with most sensitively and effectively. Unfortunately, as Adams et al. (1998) explain, there is little satisfactory material available for veterinarians regarding the range of reactions that people can manifest during this time. Studies of this nature, therefore, are very important in helping veterinarians identify or predict how clients may react to the loss of their pet, especially those clients who are at risk. With this information, veterinarians will be more adequately prepared to determine the services needed as well as the strategies they should consider when dealing with this bereaved population.

In addition to being able to provide immediate assistance to distressed owners, veterinarians should be able to make appropriate referrals to mental health professionals, especially for owners who may be at risk for more complicated grieving. Because veterinarians often do not have knowledge of the clinical strategies that would enable the development of grief work with the bereaved, it would be beneficial for both veterinary and mental health professionals to

collaborate and develop working relationships with one another. This is assuming, of course, that the mental health professionals are also sensitive to this type of loss and are knowledgeable about the factors involved, such as factors that can impair the process of integrating the loss, and therefore, isolating the grieving pet owner. Research is also necessary to assist this group of professionals in acquiring the knowledge, skills, and training that is necessary for them to best meet the specific needs of the bereaved pet owner.

Limitations

While this study provided support for previous research and also introduced unique and important findings, there are limitations that must be addressed.

These are as follows:

- (1) *GEI Item Modification.* The GEI was modified by the principal investigator so that questions that were originally designed for human loss would more specifically relate to pet loss (see Appendices C & D, pages 122 to 128).

While the questions were modified as minimally as possible from the original GEI, these changes may have affected the psychometric properties of the measure and, therefore, yielded inaccuracies in collected data.

- (2) *Non-Representative Sample.* The majority of participants in this study were members of the clientele base of a specialized, holistic veterinary clinic. This may have formed a non-representative sample of the general pet-owning population since the pet-owning population is a very large, diverse group with

members who don't necessarily seek veterinary care - especially holistic care. This information is especially pertinent when considering the Cause-of-Death finding because owners who bring their pet to this type of clinic often do so because it is their last attempt in saving their pet's life and, therefore, may be more sensitive to issues around euthanasia and natural death than those members of the general pet-owning population.

- (3) *Recruitment of Participants.* Participants were asked to volunteer for this study, and this recruitment method may also have contributed to the highly selective nature of the sample. For example, pet owners who were unaffected by the loss of their pet would be unlikely to participate because either they wouldn't be able to see the importance of the study, or they would be embarrassed at their lack of compassion; and owners who were extremely distressed over the loss of their pet may not volunteer because they would want to avoid the issue. Due to circumstances such as these, it is possible that the grief reactions noted in the study are not characteristic of all pet owners.
- (4) *Retrospective Design.* As is the case with most studies in bereavement, it was necessary for this study to rely on a retrospective design. Participants answered questions on the GEI by using self-report and relying on their memory, which often involved a pet they had lost many years before (for example, one participant focused on a dog that had been deceased for 25 years). While many of these individuals believed that they could recall their

exact feelings pertaining to the loss, it is likely that many of their recollections were inaccurate, which in turn may have biased the study's results.

Suggestions for Future Research

In order to rectify some of the limitations of the present study as well as improve upon future research in the area, important work needs to be done. First, it is necessary for instruments to be designed that are unique to the death of companion animals, so that accurate data can be collected. Secondly, in addition to further studying the variables that were explored in this study, future research should investigate the variables of: Length of Ownership; Type of Final Arrangements (such as private/group cremation, ashes returned, private or mass burial); Existing Pets in the Home at Time of Death; Critical Life Experiences of Owner; Length of Pet's Illness; Frequency, Duration, and Accessibility of Social Support; Specific Circumstance of the Death (for example, in cases of euthanasia, was the owner present for the procedure?); as well as Cultural Diversity Variables.

Thirdly, in addition to further studying the variables associated with pet loss, there are other areas that should be addressed. One area would be the impact of animal loss on individuals who depend on animals for sight, special tasks, or hearing. Because these individuals develop very intense relationships with their animals, it's important to study the factors that could put them at risk for having serious adjustment difficulties when the animal retires or dies (Nicholson, Kemp-Wheeler, & Griffiths, 1995). It would also be interesting to study those

individuals who do not grieve for their animals. There is no information, for example, on how the personal characteristics or the relationship with their animals differ between the population of owners who give their animals to shelters, and those clients who will provide palliative care for their animal until its death.

And fourthly, increased attention to the topic of pet loss could be facilitated through counselling research. Future research should focus upon the nature of the interventions that are available for bereaved pet owners, such as those provided by veterinarians, their staff, and the mental health professions (including pet loss support groups, pet loss hotlines, and individual counseling) to determine which techniques and orientations are most efficacious. It would also be interesting as well as beneficial to compare the therapeutic techniques used with bereaved pet owners, with those used for individuals who have experienced human loss.

Conclusion

Pet death, like other losses, requires that the bereaved integrate and adjust to the severe consequences of that loss. Even though society's disenfranchised view portrays this type of loss as insignificant, it does not change the fact that pet death is a common event, an event involving many decisions, emotions, and reactions of owners which makes this topic worthy of study.

The present study has shown that there may be specific owner characteristics and situational variables that can affect how individuals adjust to the loss of their pet. It has provided insight to some of the reasons why owners may be "at risk" for excessive grief reactions due to this type of loss. Additional research is needed to determine what preventive efforts could be directed at such individuals, particularly by veterinarians, veterinary staff, and mental health professionals. Studies such as this one provide evidence that society needs to be sensitive to this issue so that bereaved pet owners are recognized and given a more sympathetic response to facilitate their grieving and traversing of this difficult period.

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Appendix A:
GENERAL INFORMATION

Are you:

Male	Female

Your age:

18-35	36-59	60+

What type of animal did the loss involve?

Cat	Dog	Other (specify)

What was the cause of your pet's death?

Euthanasia	Natural Death	Accident

How long has it been since your pet died?

Less than 1 month	1 to 6 months	6 months to 1 year	Greater than 1 year

Did you replace the deceased pet? (this doesn't include pets you already had before the death). If your answer is yes, how long did you wait?

Yes	No
How long?	

Who do you live with?

Alone	With at least one other adult	With child/children but no other adult	With at least one other adult and child/children

Is there anything you would like to say about the pet that you lost? Was there anything special about your relationship with him/her? Did s/he do anything unique or special? How do you remember him/her? (use the back of the page if necessary)

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**Appendix B, page 121
Appendix C, pages 122-126**

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UMI

Appendix D:

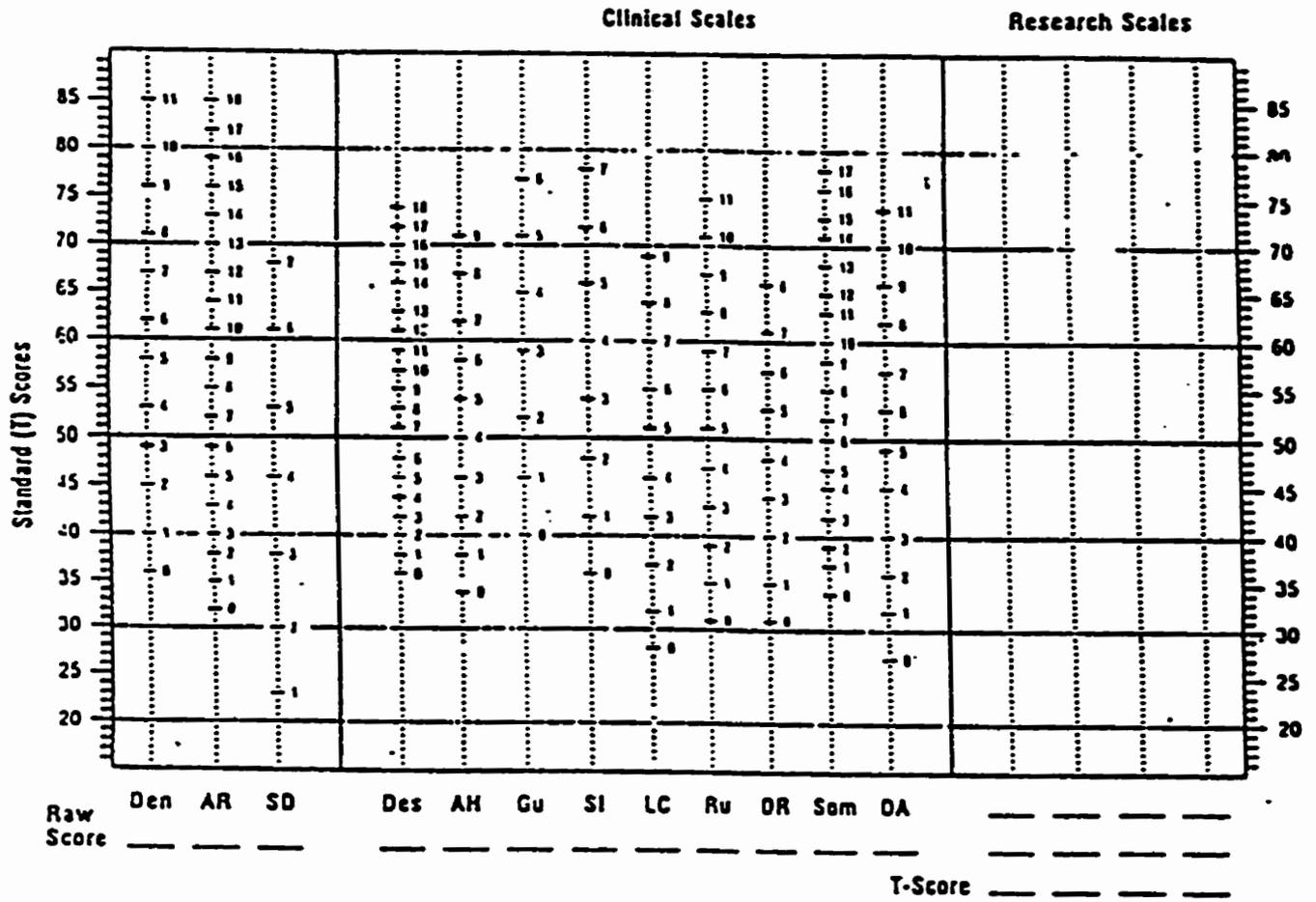
Modified Questions from the Original Grief Experience Inventory

Question Number from Original GEI	Modified Question
1	Immediately after my pet's death I felt exhausted
3	I am strongly preoccupied with the image of my deceased pet
8	It seems to me that more could have been done for my deceased pet
9	I showed little emotion when my pet died/or at the euthanasia
14	I was unable to cry at the announcement that my pet had died
15	I have feelings of guilt because I was spared and my pet was taken
19	I am comforted by believing that my pet is in heaven
21	It was difficult to part with collars, leashes, clothing, and toys of my pet
28	Upon first learning that my pet had died I had a dazed feeling
34	I could not cry until after the euthanasia/death
37	I made the euthanasia/cremation arrangements
41	I have never dreamed of my pet as still being alive
44	I feel a strong desire to do the things that I had planned to do with my pet
45	I have often dreamed of times when my pet was living
47	I have dreamed of my pet as being dead
57	Looking at photographs of my deceased pet is too painful
65	I yearn for my deceased pet
69	There are times when I have the feeling that my deceased pet is present
78	I often wish I could have been the one to die instead of my pet
80	I sometimes talk with the picture of my deceased pet
83	It is hard to maintain my religious faith in light of all the pain and suffering caused by my pet's death
85	I dread viewing a dead animal's body
86	I find myself idealizing my deceased pet

Question Number from Original GEI	Modified Question
92	I sometimes find myself unconsciously looking for my deceased pet around other pets
99	The thought of euthanasia upsets me
100	I would not feel uneasy visiting a pet in the hospital who was dying
104	The sight of a dead animal is horrifying to me
110	I have never had an emotional reaction to euthanasia
122	I spent a great deal of time with my pet before the death
125	I feel that I did all that could have been done for my pet

Appendix E:

The Grief Experience Inventory Profile



Appendix F:

RESEARCH at the CLINIC

The most difficult thing about owning a pet is having to say good-bye to a beloved companion. Because most of us establish close relationships with our pets, the death of the pet can have a serious impact on our physical and emotional well-being. It is a time when we must deal with many decisions, emotions, and reactions, and for many, it can be very difficult and traumatic.

There have been recent attempts in psychological research to investigate how owners adjust to the loss of their pet. In order to continue this important research, a PET LOSS study will be conducted at the EAST YORK ANIMAL CLINIC. Owners who have lost a pet will be asked to fill out a questionnaire which will take approximately 30 minutes to complete. If you are over 18 years of age, have lost a pet while you have been a client at the clinic, and feel you are able to participate, please contact Kelly McCutcheon (home: 650-3429) or Saturdays at the clinic from 9:00 a.m. to 1:00 p.m.. Questionnaires will also be available at the front reception desk.

Thank you for your interest!

Appendix G:**ETHICAL GUIDELINE FORM**

My name is Kelly McCutcheon and I am conducting research for my Master of Arts (Psychology) degree.

This study involves an exploration of some of the important variables that may influence owner adjustment when their companion animal dies. Previous research has neglected this type of loss which is why conducting this study is so important.

I am required by university regulations that participants in my study sign an informed consent form. Keeping in mind that your anonymity will be guaranteed, please read the following statements, and sign the attached consent form (next page).

It is my understanding that:

- 1. During the study, I will be providing the experimenter with either written or oral information regarding the loss of my pet.**
- 2. The length of time for the study is approximately 30 minutes.**
- 3. I will be asked to provide some general biographical information at the beginning of my participation.**
- 4. The data I am providing will be used only for research purposes and my name or other personally identifying information will be deleted from any report of these data.**
- 5. The risk involved in my participation in this study is increased emotional distress involved in discussing the death of my pet.**
- 6. I may terminate my participation at any time.**
- 7. I don't have to answer any question (s) I do not choose to answer.**
- 8. Any questions I have about the study will be answered by the principal investigator at the conclusion of the study, and at this time I may make a request to be sent a copy of the study's results.**

Appendix H:
Informed Consent Form



INFORMED CONSENT

I understand the details regarding my participation in this study. I am 18 years of age or older. I realize that any concerns or comments regarding my participation in this study can be addressed to the thesis supervisor or the departmental research ethics committee, at (416) 736-5202. I hereby consent that I will participate in this study.

Date

Signature of Participant

Kelly McCutcheon
Kelly McCutcheon, BA, BSc
Principle Investigator

Stephen Fleming
Dr. Stephen Fleming, PhD
Thesis Supervisor

Thank you for your cooperation. Your help will be a great contribution to this neglected area of research. Your participation is very much appreciated.

Appendix I:

Psychotherapist

Background

Sue Griggs is a psychotherapist in private practice in Toronto, who is also a pet lover. She is particularly sensitive to the needs of people who have lost a pet, as she has had pets for most of her life.

She provides a safe, supportive environment to help people explore their feelings of grief and sadness.

She believes that talking about one's loss in either an individual or group setting can help a person through the grieving process.

For further information, please call:
Sue Griggs
Spadina Therapy Centre
37 Spadina Road, Toronto, Ont. M5R 2S9
(416) 224-8449



Coping with the Loss of your Pet



Appendix J:

Metro Toronto Animal Loss Support Group

**METRO TORONTO
ANIMAL LOSS
SUPPORT GROUP**

Metro Toronto
Animal Loss Support Group
P.O. Box 84643
Toronto, Ontario
M6S 1T0

Phone: (416) 224-2292
(416) 762-0341