The Cat Effect:

Investigating the relationship between cat ownership and health

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Abstract

Companion animals are an important part of the New Zealand psychosocial environment and companion cats are particularly popular. A number of studies have explored the relationship between pet ownership and physical and psychological health but the results have been inconclusive. Despite a lack of conclusive evidence people continue to believe that the presence of pets can enhance health and wellbeing. Specifically, there is increasing interest in the benefits to be gained from animal assisted activities and therapies. Research based on the connection between animals and health has mainly focused on physical and psychological outcomes. The present qualitative research differs from the previous work in that the focus is on investigating the nature of the owner-to-cat relationship that underpins claims of enhanced health and wellbeing. A sample (N=10) comprising five males and five females 45-77 years of age were recruited for the study with the main inclusion criteria being that they owned a cat. Open ended interviews were transcribed and the transcripts were subjected to a thematic analysis technique to identify themes that captured common aspects relative to the person-to-cat relationship. Four themes were identified. First, communication enhanced connectedness and tended to be anthropomorphic in nature. Second, companionship was linked with pleasure and often involved a close bond. Third, inclusiveness enhanced a sense of belonging when cats were often presented as one of the family. Fourth, interdependence was linked to responsibility and a sense of purpose. The overarching theme, however, was the affirmation of identity for the owner that featured throughout the transcripts. Identity formation, maintenance and protection were found to be fundamental to the nature of the person-to-cat relationship. Identity affirmation was linked to a need to feel good, a need to belong, a need to feel competent, a need to have meaning in life and self-esteem, all of which can enhance psychological health and a sense of well-being. These findings related to a small group of devoted cat owners so the findings may not apply to other types of ownership. Broader implications related to pet assisted activities are called into question when just having a cat around or a brief encounter may not be enough to have a positive effect

on health. For this reason, if a relationship with a cat is to have a positive effect, you may have to really love your cat.

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Introduction

There are estimated to be more than 200 million domestic cats *(Felis catus*) worldwide which exceeds domestic dogs (Canis familiaris) as the most popular companion animal (Bernstein, 2005). New Zealand (NZ) households are reported by the NZ Companion Animal Council Survey (NZCAC: 2011) to be home to 5 million pets which exceeds the percentage of pet ownership found in any other country. That is, 68 percent of NZ households have been reported to have at least one pet where 28 percent of these own one cat and another 20 percent own two or more cats (NZCAC, 2011). Altogether, 1.4 million cats are believed to be owned by NZ households which demonstrates the desirability of the species as a companion pet among the NZ population. This popularity is reported by Farnworth (2013) to reflect the value placed on the perceived positive relationship that can develop between a companion cat and humans. As a consequence, companion cats have become an important part of our psychosocial environment. However, much of the research dedicated to the influence of companion pets on human health is focused on the effect of dog ownership otherwise the pet is unspecified. According to Farnworth et al. (2011) the popularity of companion cats exceeds that of dogs in New Zealand so it seems logical to explore how the ownership of cats as a readily available resource could also promote health and wellbeing.

Literature Review

A plethora of studies have explored the relationship between companion animals and human physical and psychological health over the last 30 years. While many articles have been published on the health benefits of a human-companion animal connection, a literature search highlights conflicting results. For example, studies on companion pets including cats have produced evidence that range from significant benefits attributed to ownership, (McConnell, Brown, Shoda, Stayton, & Martin, 2011), to no measurable evidence, (Rijken & van Beek, 2011), and even evidence that cat ownership could predict worse physical health (Parker et al., 2010). These inconsistent results have been attributed variously to descriptive, anecdotal and biased research based on small, homogeneous samples, a lack of randomised trials, a reliance on self-reports, experimenter bias and

expectancy effect. As a consequence, an argued lack of rigor in the methodology has meant that results have shown poor reliability, are difficult to replicate and remain inconclusive with the literature reporting positive, neutral and negative effects.

This current literature review was drawn on published research since 1980 using the following bibliographic databases: Discover, PsycINFO, Scopus and Google Scholar. The key words used to retrieve articles related to human-animal interactions and health were: companion animal; companion cat; cat companionship; human-cat companionship; human-cat bonding; nature of companion animal relationships; pet companionship; pet owners; pets and health benefits; cats and health benefits; and companion cat-human health benefits. Only peer reviewed journal articles were selected. These articles were appraised and sorted into content categories that represented the most frequently examined health outcomes of a human-animal interaction with a priority placed on articles that featured companion cats. The content categories form the basis of this review. First, ambiguous concepts occurring in the literature on human-animal interactions and health are discussed. Second, studies that focused on hypothesised positive physiological, psychological and psychosocial health benefits are presented in this review, followed by studies which highlighted negative health outcomes.

Ambiguous Concepts

Ambiguous conceptualisations have been identified throughout the person-pet literature by (Chur-Hansen, Winefield, & Beckwith, 2008; Herzog, 2011). For instance, a search has revealed that the notion of a companion animal can be subject to a number of different interpretations of what constitutes such a relationship. Specifically, Farnworth, Nicholson, and Keown (2010) defined a companion cat as a common domestic cat that was dependent on humans for food, shelter, health and safety, omitting any reference to an emotional bond. In contrast, studies by Hodgson et al. (2015), Heuberger and Wakshlag (2011), and Wood, Giles- Corti, Bulsara, and Bosch (2007) linked the term pet with ownership along with a notion of companionship. This was considered as a role that a pet could fulfil for their

owner. Here, the implicit assumption was that a pet was a companion animal associated with an owner. Bennett, Trigg, and Brown (2015) removed the notion of an owner and assumed that the mere presence of a pet irrespective of an ownership connection could fulfil the role of a companion animal for humans. Winfield, Black, and Chur-Hansen (2008) hypothesised that the mere presence of a companion pet could result in different levels of a human-pet attachment that were assumed to be experienced by the owner. Following this line of thinking, Headey, 1998; Thorpe et al., 2006; Lewis, Kragehoh, and Shepherd, 2009; Parker et al., 2010, McConnell et al., 2011, extended the term pet ownership to assume a relationship that involves companionship that could potentially affect a quality of life and well-being. So these studies defined a companion animal as part of an interdependent relationship between a pet and an owner. This occurred when the owner looked after the welfare of the pet and in return the pet was perceived to promote a human-animal bond and health benefits.

Others have argued that the conceptualisation of a pet cat owner may not necessarily be a person who accepts responsibility as a caregiver suggesting that a cat non-owner could be someone spent a considerable amount of time with a pet belonging to someone else. So, a pet cat owner may assume primary responsibility for de-sexing, paying for veterinary care and the containment of the pet, while a pet cat non-owner may fulfil roles such as feeding while simultaneously gaining companionship (Chur-Hansen et al., 2008; Gunaseelan, Coleman, & Toukhsati, 2013).

Zito, Vankan, Bennett, Paterson, and Phillips (2015) focused specifically on cats and used yet another term to define the human-cat relationship when they proposed the idea of semi-ownership. This is used when the respondent does not consider themselves to be the owner of the cat, although they may have interacted with the cat and fed it frequently for more than a month. They categorised the relationship with a companion cat differently yet again when they introduced the concept of casual interaction that occurred when the respondent did not perceive themselves as the owner. The criteria for this definition was that the interaction between the respondent and the cat

had been sustained for less than a month and during this time they had rarely fed the cat or not at all.

Yet another classification of a companion cat was suggested by Zito et al. (2015) to depend on whether the cat was passively-acquired or actively-acquired. Here, the significance of the difference attached to the relationship was contingent on whether the owners had planned to procure the cat or not. For instance, the meaning ascribed to a passively-acquired, semi-owned companion cat tends to suggest that the cat has a friendly disposition and is in generally good health.

These studies demonstrated how the definition of a companion cat can vary between different classifications of ownership that are dependent on the frequency and duration of interaction and the performance of caretaking behaviours relating to the cat. Of equal importance to the manner in which a companion cat might have been acquired was the period of time that the respondent had performed a caregiving role for a cat that, as explained, ranged from casual interaction to owner status. This has multiple implications when different interpretations of a definition of a companion cat interact with the same social construct (Lewis, Krageloh, & Shepherd, 2009; Zilcha-Mano, Mikulincer, & Shaver, 2012). Lewis and Kragehoh (2009) focused on pet cat ownership while Zilcha-Mano and Shaver (2012) focused on the notion of attachment in studies designed to measure the effect of a companion pet on psychological health.

Lastly, Hosey and Melfi (2014) and Vitzum (2012) observed that there is a lack of literature defining the term human-animal interaction or relationship. This interaction or relationship is reputed to be mutually beneficial to include physical, psychological and emotional gains essential to the health and wellbeing. With this in mind, there is a need to explore the relational aspects of interactions between pets and their owners in order to understand the connection between the cat ownership and health and wellbeing.

The research concerning the effect of a companion cat on health remains ambiguous as to whether it refers to companionship, ownership, semi-ownership, a casual interaction, non-ownership or a caregiver attachment in

studies designed to measure the effect of a companion pet on physical or psychological health and wellbeing. Therefore, contradictory results that emerged may have been attributed to the different conceptualisations of a companion pet which then confounded the studies.

Hypothesised Physiological Health Benefits

The first physiological benefit to be examined is the claim that companion pets, such as cats were able to influence cardiovascular health. An initial study by Friedmann, Katcher, Lynch, and Thomas (1980) hypothesised that pet ownership was associated with increased survival rate one year after hospitalisation for cardiovascular surgery. Given that evidence reported by Lomas (1998) has shown that social affiliation and companionship are linked to health benefits then it is logical to suggest that pet cats could influence survival (Wilkinson & Marmot, 2005). Friedmann et al. (1980), Friedmann and Thomas (1995) and Friedmann, Thomas, Stein, and Keliger (2003) found that owning a pet was a significant predictor of survival beyond one year post heart attack. So, the hypothesis proposed by Friedmann et al. (1980) would appear to be justified although it was not able to establish the mechanism involved that influenced increased survival. Parker et al. (2010) hypothesised that pet ownership may not in fact influence the survival rate of patients with acute coronary syndrome based upon inconsistent findings between certain types of pet ownership and the lack of consistency over the definition of pet ownership. Therefore, conceptual inconsistencies appear to contribute to conflicting results.

The Friedmann et al. (1980) and Parker et al. (2010) studies both used a retrospective longitudinal research design in which the same group of people were assessed 12 months following a heart attack. The main limitation for a longitudinal design is the potential for selection bias and confounding factors. Both the Friedmann et al. (1980) and Parker et al. (2010) studies inclusion criteria included English speaking or European subjects and those diagnosed as having suffered a heart attack. Therefore, the selection criteria along with participants that either withdrew or could not be contacted at the 12 month follow-up, meant that the study may have become non-representative and subsequently difficult to generalise.

Furthermore, the time difference of 30 years that elapsed between the Friedmann et al. (1980) and Parker et al. (2010) studies meant that improvements in clinical treatment could also be attributed to reduced mortality rates for heart attack victims. Therefore, it would become more difficult to detect differences only credited to the effect of the companionship of a cat or other pet. In addition, the studies were potentially confounded by the unknown influences of the different social, cultural and physical environments to which subjects were discharged but from which survival was evaluated.

On the other hand, both the Friedmann et al. (1980) and Parker et al. (2000) studies used large population samples consisting of 92 patients participating in the Friedmann et al. (1980) study and 489 participants in the Parker et al. (2000) study. These were clearly defined by ethnicity and demographics that included age and socio-economic status. In contrast, the survival rate reported in the small sample of 31 participants in the Friedmann et al. (2003) study may have been confounded, as pet owners including those with cats were considerably younger than non-pet owners. A second methodological strength apparent in all four studies was that the potential confounding of psychosocial variables was controlled when outcomes emerging from cat or dog ownership were measured separately. For example, an analysis of the data in both studies found that survival rate decreased for cat ownership.

It would appear that Friedmann et al. (1995) and Friedmann et al. (2003) were justified in concluding that pet ownership including cat ownership may be associated with improved survival after a heart attack. Studies by Friedmann et al. (1980) had found that 28 percent of pet owners survived for at least a year following admission to a coronary care unit as compared to 6 percent of non-pet owners. On the other hand, Parker et al. (2010) was equally justified to call into question whether pet ownership was able to moderate the survival rate for people with coronary heart disease. This was because pet ownership was found by Parker et al. (2010) to increase mortality following a heart attack. The divergent results of these studies

highlight the influence of potential confounding factors in studies examining the relationship between companion pets and health benefits.

A cross-sectional design was used to survey well known risk factors for heart disease by Anderson, Reid, and Jennings, (1992) when they investigated the relationship between pet ownership and risk factors for cardiovascular disease for a large population of 784 pet owners as compared to 4,957 non-owners. This survey used a cardiovascular risk factor questionnaire to obtain information on lifestyle habits related to smoking, alcohol intake, diet and exercise. Details on age and the incidence of diabetes and heart disease in family history was recorded. As a result, the authors supported the Friedmann et al. (1980) findings that pet ownership was attributed to lower measures of the risk factors understood to be linked with heart disease.

Blood pressure is also a noted factor for heart disease. The presence of companion animals such as cats was associated with decreases in blood pressure, heart rate and respiratory rate. For instance, Friedmann, Katcher, Thomas, Lynch, and Messent (1983) found that people experienced a decrease in blood pressure when talking to pets. The decreased physiological arousal indicated by lowered blood pressure was also linked with participants talking more slowly to their companion pets that in itself was believed to reduce blood pressure. It was found that measurements of blood pressure were significantly lower in pet owners

A pre- and post-test study by Baun, Bergstrom, Langston, and Thomas (1984) supported the findings of Friedmann et al. (1983). This study aimed to monitor blood pressure and heart rate during interactions with pets for a sample of 24 women who were pet owners. The three treatment conditions included: (a) petting an unknown pet; (b) petting a companion animal; and (c) quietly reading a magazine. Baseline data was obtained for each participant in each condition. The method involved the random introduction of each treatment condition for nine minutes in each session and blood pressure was recorded at three minute intervals. Petting a companion animal resulted in the lowering of blood pressure readings to equal that of quietly

reading a magazine. It was concluded that the interaction of petting a companion animal like a cat could lower blood pressure.

These studies were revisited by Allen, Shykoff, and Izzo (2001); Allen, Blascovich, and Mendes (2002); Allen, (2003); Zilcha-Mano et al., (2012); and Friedmann, Thomas, Son, Chapa, and McCune (2013) to further examine the effect of pet ownership on lowering blood pressure and the risk of heart disease. Allen et al. (2001) hypothesised that for a group of stockbrokers with high blood pressure, the presence of a pet such as a cat would reduce the response to psychological stress and then lower blood pressure. Allen et al. (2002); Allen (2003); and Zilcha-Mano et al. (2012) hypothesised that the presence of a pet would reduce heart rate during a stressful condition for participants reporting normal health. Friedmann et al. (2013) hypothesised that the presence of a pet would lower blood pressure during the daily activities of older pet owners with pre- to mild hypertension and slow down the progression of hypertension. These hypotheses were justified on the basis that companion animals had been found to have a positive influence on the health of their owners in experimental conditions. Therefore, it was important to generalise the effects to normal everyday situations. Existing research had linked the role of supportive friends in mediating the response to stress and blood pressure. With this in mind, given that owners often regarded their pets including cats as friends, it would be logical to theorise that companion cats might have the same effect on cardiovascular health.

The research design utilised by Allen et al. (2001) was a clinical randomised trial involving pet adoption, while Friedmann et al. (2013) used a repeated measures observational study over a period of three months. Allen et al. (2012); Allen (2003); and Zilcha-Mano et al. (2012) were cross sectional studies that involved random assignment to different pet conditions after which a stressor was introduced. In all these studies it was hypothesised that the presence of a pet that may have included a cat could affect cardiovascular reactivity and then blood pressure. The randomised trial used by Allen et al. (2001) gave baseline data against which a comparison could be made of the effect of the presence of a pet at a six month follow-up.

Likewise, the repeated measures design used by Friedmann et al. (2013) recorded blood pressure at 20 minute intervals for 12 hours at one month and three month intervals. During this time daily activities were monitored and at the same time whether or not the pet was present was recorded. So these designs were appropriate when the objective was to evaluate the pet effect during the course of normal everyday life when any difference would be more likely due to the influence of the presence of a pet.

Limitations are apparent for the research designs under discussion. First, the pre and post-test design used by Allen et al. (2001) could have been confounded by rival hypotheses such as environmental or social factors that occurred during the six month time lapse. These factors might have accounted for any differences in blood pressure. Meanwhile, the Zilcha-Mano et al. (2012) study could have involved different directions of cause and effect: that pets may have made people feel safe and secure and therefore reduced blood pressure, or on the other hand people who felt safe and secure and had low blood pressure may have chosen to own a pet. In addition, participants could have been subject to fatigue effects when measurements were taken repetitively during the course of a day. Therefore, while these designs aim to measure the effect of the presence of a pet on blood pressure any findings are susceptible to alternative explanations which may fail to be accounted for with this scientific approach.

One strength apparent in Allen et al. (2001) was that the sample population was selected for homogeneity with the criteria being stockbrokers with Stage Two hypertension that lived alone. The reason for this is that the focus was a group of individuals who experienced similar job stress. As no mortality occurred during the study, the groups remained equivalent and this increased the probability that any change was more likely due to the influence of the presence of a pet such as a cat.

Some weaknesses were identified in the methodology. Firstly, it would have been unethical to withhold blood pressure medication and randomly assign participants to only pet ownership for six months so the medication may have confounded the results. Secondly, as the response to a stressor was

measured in the home it could not be generalised to a different social environment such as the workplace.

Friedmann et al. (2013) may have been cost effective as only 32 participants were required as each individual participated in all conditions. Researchers were not present when blood pressure was calculated so there was no control over the timing or the circumstance in which assessments were taken. As Chur-Hansen et al. (2010) and Barker and Wolen (2008) pointed out, small homogeneous samples and the reliance on self-reports made the results difficult to replicate.

The physical health benefits of pet ownership were also examined by Serpell (1991) when a cross-sectional design was used to compare the health status of 71 new pet owners with 26 non-owners. The self-report survey was used to evaluate physical and psychological health by means of the following methods: a checklist of 20 minor health conditions; duration and frequency of walks taken; and a 30 item General Health Questionnaire. The questionnaire was completed one month after pet acquisition, then six months and finally at 10 months. The participants in the newly acquired pet group reported fewer health problems, an increase in the exercise taken, and an improvement in the General Health Questionnaire score compared with the control group. It was concluded that pet ownership was associated with positive effects on human health and behaviour.

Conclusions drawn by Allen et al. (2001; 2002), Allen (2003), Zilcha-Mano et al. (2012) and Friedmann et al. (2013) all found that pets including cats can act as a buffer against stress and provide health benefits for people who like animals and have limited social support. The objectivity of these conclusions were however, weakened by the limitations that were discussed. Furthermore, despite these and other studies reporting a reduction in blood pressure in the presence of a pet such as a cat, an experimental study by Somerville, Kruglikova, Robertson, Hanson, and Maclin (2008) found that this hypothesis was only partially supported by a sample of 62 college students. So, despite widespread media reports of the ability of pets to lower blood pressure and to reduce the potential for cardiovascular disease, the

reviewed studies fail to conclusively provide evidence to support this. Instead the studies appear to contribute to a body of conflicting results on the pet-human relationship and health.

Psychological and Psychosocial Health Benefits

Loneliness

The presence of a companion animal has often been associated with the moderation of the reported indicators of psychological wellbeing. These indicators can include loneliness, depression, anxiety and stress. A longitudinal study undertaken by Siegel (1990) examined the role of pet ownership as a moderator of stressful life events in the elderly. The frequency of visits to the doctor was used as an indicator of psychological distress during a period of one year for a sample of 938 elderly patients of which 345 reported owning a pet. A number of standardised measures recorded baseline data and these included a Social Network Scale and a Depression Scale along with the assessment of the use of healthcare services taken every two months. The notion of pet ownership was evaluated on the basis of the level of self-reported responsibility for the pet, attachment to the pet and the perceived benefit minus cost difference of pet ownership. The accrued effect of stressful life events was found to be linked to more visits to the doctor for non-pet owners. In addition, an analysis of telephone interviews with this sample suggested that companion pets provided a buffer against stress. Owners implied that pets provided a source of companionship, security and love and even help in times of stress.

In the same way, Straede and Gates (1993) specifically examined the association of cat ownership and psychological health. In this study a survey of 92 owners and 70 non-pet owners used several instruments including: the Pet Attitude Scale; Sleep Disturbance Questionnaire; General Health Questionnaire-30; Beck Depression Inventory; Marlowe-Crowne Social Desirability Scale; State-Trait Anxiety Inventory; and Life Events Inventory. It was found that cat owners had lower levels of psychological disruption and it was concluded that cat owners experienced improved psychological health.

Another study that claimed psychological benefits associated with pet ownership by (Zasloff & Kidd, 1994). The relationship between loneliness, pet ownership and attachment was examined. It is widely believed that loneliness is linked to depression, anxiety and low self-esteem, so the revised Loneliness Scale and the Pet Relationship Scale were used as measures for this study. The participants consisted of a convenience sample of women students of which 59 owned pets and 89 did not own pets. The women were divided into four demographic groups which included: (a) women living alone; (b) women living with a pet; (c) women living with people and no pets; and (d) women living with pets and people. A statistical analysis revealed that women living alone, without a pet, were significantly lonelier than the women in the other groups. It was concluded that pet ownership could reduce feelings of loneliness.

Heady (1998), Gulick and Krause-Parello (2012), and Bennett, Trigg, Godber, and Brown (2015) also examined whether the presence of a pet was associated with greater psychological wellbeing. Given that people over 65 years are reported to experience an increased incidence of loneliness and depression and pet ownership had been found to promote psychosocial health, then it made sense that this hypothesis was examined in relation to this cohort. Furthermore, these studies were justified as media reports appeared to contradict scientific evidence when reporting the value of pets in enhancing wellbeing and mood (Bennett et al. 2015).

All three studies used cross-sectional designs to survey pet owners and non-pet owners. While Gulick and Krause-Parello (2012) and Bennett et al. (2015) used purposive sampling of 159 and 68 older adults respectively, Heady (1998) used a stratified probability sample of 1011 residents over 16 years of age. Heady (1998) also controlled for gender and age due to the tendency for women to access healthcare more than men and for older people to use the health system more than young people. As mentioned, the survey method was used in each of the studies where the participants responded to interviews or questionnaires. All of the obtained data was subjected to standardised measurement scales and statistical tests for analysis which increased the scientific strength of the findings. The Bennett

et al. (2015) study required intensive sampling over seven days which may have controlled for recall bias on one hand but introduced a potential confound of fatigue effect on the other.

As a result, all three studies found that reported wellbeing and mood between older pet owners or non-owners was not statistically conclusive. This finding appeared to conflict with reports confirming the value of pets in moderating loneliness, mood and promoting wellbeing. Furthermore, the frequency of pet presence during normal everyday activities rather than mere ownership was found to be more critical in determining psychosocial health. This outcome has implications when assessing the potential value of the human-companion animal interactions, interventions and therapies for the benefit of health in the wider community. In addition, Gulick and Krause-Parello (2012) found that older, single women tended to have cats and that loneliness was found to be more pronounced among this group that owned cats. This outcome could be explained in two ways. First, it could be argued that older women who experienced loneliness may have chosen to acquire a cat, or secondly, single women may have experienced loneliness due to a perceived need to stay home and look after their cat. Therefore, despite pets providing an enjoyable source of psychological support for many people, this body of research was typical of an increasing number of studies that called into question the impact of pets on psychological wellbeing.

Attachment

Cox, (1993); Winefield, Black, and Chur-Hansen (2008); Lewis, Krageloh, and Shepherd (2009); Antonacopoulos and Pychyl (2010); and Peacock, Chur-Hansen and Winefield, (2012); investigated the relationship between pet ownership and psychosocial health benefits. One psychosocial benefit attributed to a relationship with a pet has been from the notion of an attachment. Given that positive effects have been reported in the connection between pets, individuals and measures of psychosocial responses Cox (1993) investigated the notion of a human-pet bond in relation to family functioning. For this study 116 pet-owning families in therapy were anonymously surveyed using the Family Adaptability and Cohesion

Evaluation Scale along with the Pet Attachment Scale. These tools were used to determine whether family pet attachment correlated positively with family cohesion and adaptability. It was found that pet attachment correlated positively with family cohesion and adaptability.

As existing data tends to suggest that people with companion pets often regard them as friends, it seems logical that researchers might hypothesise that a human-animal bond could be a form of emotional attachment with similar psychosocial benefits. Therefore, it makes sense that Winefield et al., (2008); Lewis et al., (2009); Antonacopoulos and Pychyl (2010); and Peacock et al., (2012); applied an attachment perspective to the human-pet relationship. In a similar way Sable (2013) hypothesised that pets like people search for physical contact and emotional connection which can act as a psychological and physical safeguard. The notion of attachment was further supported by evidence from neuroscience which maintained that stroking a pet like a cat can stimulate the hormone oxytocin which elicits pleasurable feelings and lowers the production of stress hormones. For this reason it was proposed that the production of oxytocin could diminish the feelings of vulnerability and anxiety. So it makes sense from an objectivist point of view that researchers would predict that an attachment to pets might moderate the effects of psychological distress such as loneliness and depression especially when owners had few friends.

As with much of the companion pet-human literature, these studies used a cross-sectional design across different population samples. The variable of pet attachment was measured in relation to social support, depression, loneliness and pet-owner relationship using standardised scales. This was to determine the correlation of a reported strength of attachment to a pet with perceived physical and psychological health benefits.

As with the cross sectional designs of the previous studies, the Winefield et al. (2008); Lewis et al. (2009), Antonacopoulos and Pychyl (2010); and Peacock et al. (2012), research would make it difficult to establish a causal direction of association. For example, it would be plausible to suggest that a level of emotional or social support could be mediated by a human-pet

attachment to affect psychological health. On the other hand it would be equally plausible to suggest that psychological health could be mediated by human-pet attachment to affect the perception of social support. Therefore, causal pathways remain unclear.

It could be expected that the response rate for a face to face interview used by Winefield et al. (2008) would be higher than a questionnaire, however, no information on the number or characteristics of those who refused to participate in this study was available. An inherent weakness in the interview method is argued to be interviewer bias. Winefield et al. (2008) tried to control for this confound by making one requirement for the interviewees in this study to not be related to the interviewer.

The survey method utilised by Antonacopoulos and Pychyl (2010), Lewis et al. (2009), and Peacock et al. (2012) provided respondents with a system to describe the nature of the connection between themselves, their pet and their perceived psychological health. When trying to generalise findings, the survey methodology can fail to account for variances such as socio-economic status (Barker & Wolen, 2008). For example, this weakness emerged in the Antonacopoulos and Pychyl (2010) study when it was pointed out that the sample may not have been representative when a greater percentage of educated participants were able to access the survey due to it being online. Despite the fact that complexities may have been overlooked, the strength of the survey method was that it offered a snap shot of how some people thought and behaved at a point in time which could be compared with experimental research findings. Reliability was retained when the Owner Pet Relationship (OPR) survey was used for three of the studies. In addition, the Pet Attachment Questionnaire (PAQ), the Pet Attachment Survey (PAS) and the Lexington Attachment to Pet Scale (LAPS) were used in a study each to ensure a comprehensive assessment of the level of attachment to pets. Despite these measurement scales being different, the result was consistent across all four studies with attachment to a companion animal not being found to be a positive predictor of psychological wellbeing. In addition, the Multi-Dimensional Support Scale (MDSS) was used by two of the studies and the Multi-Dimensional Scale of

Perceived Social Support (MDSPS) was used in another study to assess the respondents' satisfaction with social support provided by family members and friends. Again, the findings were consistent in that low levels of satisfaction with human social support were correlated with negative psychological wellbeing and importantly, a human-pet attachment was unlikely to make any difference. So, according to these studies neither pet ownership nor an attachment to a pet was able to explain any reported variance in psychosocial health and wellbeing.

The conclusions drawn by Antonacopoulos and Pychyl (2010), Lewis et al. (2009), Peacock et al. (2012) and Winefield et al. (2008) would appear justified on the basis of the consistency of the results obtained. Although the findings were not generalised further than the population of interest the results were replicated across all four studies. The reliability of these findings was further highlighted by the range of population samples which included university students to people over 60 years of age. Therefore, according to these studies, it would appear that a companion animal-human attachment may not contribute to increased psychosocial health and wellbeing despite the more or less implicit assumption that it does. So, the popular hypothesis that pets tend to be good for us appears difficult to corroborate.

Social Support

A second psychosocial benefit linked to a relationship with a companion animal is a form of social support. Theories have linked the role of pet ownership to a form of social support that was believed to function as a source of companionship and contribute to health and wellbeing (Uchino, Bowen, Carlisle, & Birmingham, 2012). This hypothesis was examined by Staats, Sears, and Pierfelice (2006), Wells (2009), Mc Connell, Brown, Shoda, Stayton, and Martin, (2011) and Krause-Parello (2012). Wells (2009) and Mc Connell et al. (2011) explored whether pets are good for us when they provide social support and thus facilitate physical and psychological benefits. Staats et al. (2006) and Krause-Parello (2012) revisited the interrelationship of human social support and pet attachment to

gain an understanding as to why people continue to own and gain pleasure from pets.

Staats et al. (2006), Mc Connell et al. (2011) and Krause-Parello (2012) used a cross-sectional design as the research questions related to the frequency with which the psychosocial factor of pet ownership was linked with wellbeing and the fulfilment of social needs. Both of these indicators were considered measures of social support. As this was not an experimental design the findings were limited to the specific samples in the studies. For example, the Staats et al. (2006) study used random selection to recruit 302 pet and non-pet owners while the Krause-Parello (2012) study used a convenience sample of 159 over 55 year old women who owned a pet. The retrospective nature of the design meant that these findings may have been biased due to the popular belief in the health-promoting effect of pets. This belief may have influenced appraisals of the pet effect on perceived health status, quality of life and wellbeing.

The methodology used in these particular studies appeared to have strengths and weaknesses. The first strength from a scientific point of view of the Staats (2006); Mc Connell et al. (2011); and Krause-Parello (2012) studies was that the data was exposed to systematic assessment using 'gold standard' measurement scales. Specifically, loneliness was measured by the University of California, Los Angeles Loneliness Scale in all of these studies. A causal pathway would be difficult to establish when there was an equal likelihood that pets may have caused their owners to be healthier or people who were healthier may have chosen to own a pet. Lastly, the researchers may have also shared a positive belief in the health promoting influence of pets that may have unconsciously affected results due to experimenter bias.

This research was predicted to reveal themes that helped to explain the association between a person-pet relationship and perceived health and wellbeing. The correlation between pet ownership, health, wellbeing and quality of life was found not to be significant in the Staats et al. (2006) study. This justified a conclusion that there was no relationship between

these variables. On the other hand, a strong correlation was found between ownership and a belief in the health benefits of pets. It was found that a belief in itself may have a positive effect for this group when linked to social support or companionship. In addition, Krause-Parello (2012) found that when raw data was analysed against standardised scales the concept of pet attachment was shown to influence psychological health for some older people. As demonstrated, findings in these studies focused on different aspects of the person-pet relationship and health and well-being fail to be coherent.

These inconsistent findings could be due to ambiguous conceptualisations of the nature of pet ownership. For instance, Staats et al (2006) suggested that this was determined by the amount of physical contact between a pet and owner, whereas Krause-Parello (2012) failed to define what constituted this relationship. A review conducted by Wells (2009) maintained that evidence related to companion animals and social support did not allow for generalised conclusions on the basis that the studies only considered short term changes in wellbeing, lacked prospective designs and randomised samples. In contrast, Mc Connell et al (2011) argued that data was sufficiently robust to provide evidence that pet ownership represented an important source of social support. So, contradictory results emerged yet again on the relationship between companion pets and health despite pets being undoubtedly good for some people.

Social Capital

The third psychosocial benefit associated with an attachment to a companion animal is the promotion of social capital. According to Wilkinson and Marmot (2005) and the World Health Organisation WHO (1948), the influences of social environmental factors such as friendship, positive social relations and strong supportive networks defined by Lomas (1998) as 'social capital' are fundamental to health and wellbeing. In a similar way, Bourdieu (1986) described social capital as an investment in social relations which can be drawn upon when needed. With this in mind, Wood Giles-Corti and Bulsara (2005) hypothesised that pets may promote social capital in a number of ways: (a) pets can facilitate social interaction

between neighbours; (b) pets could act as catalysts for reciprocity between neighbours; and (c) pets can be a protective factor for psychological health by indirectly promoting relationships within a community. For this reason it was hypothesised by Wood et al. (2005), Wood, Giles-Corti, Bulsara, and Bosch (2007), Graham and Glover (2014) and Wood et al. (2015) that pets could act as a conduit to promote social cohesion by acting as a go-between for people making social contact. As pets have been identified as a possible source companionship the authors suggested that they might also act as a vehicle for friendship and social support within communities by building social capital and in this way influence human health.

Three of the studies utilised a quantitative cross sectional design with large samples of participants to increase the reliability of the findings while the Graham and Glover (2014) study used a qualitative online questionnaire. Objectivist epistemology informed the quantitative research when obtained data was subjected to rigorous statistical analysis from which meaning was interpreted independent of context (Gergen, 1994). For that reason, an objectivist approach may not be entirely appropriate to use for this research given that the human-pet interaction is completely relational and dependent on context. Any subjectivity that might describe or help to explain how social relations and ensuing health benefits are fostered by companion pets may not be captured. In contrast, the Graham and Glover (2014) study aimed to stimulate an in-depth description and draw on contextually embedded meanings to provide a rich and detailed, yet complex account of data. Therefore, the constructionist epistemology that informed this qualitative design may have been more appropriate for this research question and for this reason it will also inform the research undertaken in this thesis.

An analysis of the research design used by the Wood et al, (2005; 2007; 2015) studies highlighted some limitations. First, while non-pet owners may find pets belonging to neighbours to be a nuisance when they bark at night or defecate on the lawn they may also gain health benefits from having other peoples' pets in their neighbourhood. Second, while the method of randomisation was described in the Wood et al. (2005; 2015) studies, there

was only an assumption that randomisation had been adequately conducted in the Wood et al. (2007) study and therefore selection bias cannot be ruled out. Lastly, the quantitative studies were retrospective and based on self-reports of pet owners which can produce erroneous results and findings.

On the other hand, the Graham and Glover (2014) research design encouraged rich narratives to be revealed as no word limit was imposed. The word 'social capital' was not included as it may have acted as a barrier and limited how participants described their experiences of social interactions attributed to their pets. Nevertheless, an education bias may have been reflected in the sample when people who did not feel confident with writing about their experiences were excluded by self-selection.

One strength of the quantitative research conducted by Wood et al. (2005; 2007; 2015) was that it was representative of the wider population when large randomised cross-sections of sex, age group and socio-economic status were sampled using a computer assisted telephone interview technique. Despite this, a weakness emerged when a response rate of less than 50 percent increased the likelihood that findings may have been erroneous and limited generalisability. It is possible that the non-respondents may have differed from the respondents in a number of ways such as gender, income or education as previously discussed. A second strength apparent in the method is that the questions were subjected to test re-test reliability and this was confirmed when coefficients ranged from 0.74 – 0.92. Furthermore, the studies included a clear explanation of the tools used in the statistical analysis along with a rationale for their use. For example, a multivariate analysis was used in the Wood et al. (2005) study to assess the potential influence of pets on variables linked to social capital and raw data was subjected to the Buckner Neighbourhood Cohesion Index (1988) as a means to deductively account for the influence of pets on social capital.

Strength of the qualitative methodology was that it enabled critical exploration of the roles that pets can play in developing social capital among people in communities. In this way, an open ended questionnaire

stimulated the generation of detailed data. Next, a coded analysis revealed the conditions, contexts and consequences in which social interactions occurred or did not occur.

The conclusions drawn in Wood et al. (2005), Wood et al. (2007) and Wood et al. (2015) studies found that social capital acted as a mechanism by which pets exerted an influence on human health. These studies suggested that pet ownership provided opportunities for interactions between neighbours and that there was an association between pets, social capital and health. This seemed justified by the data when 64.5 percent of pet owners reported excellent health in the Wood et al. (2005) study compared to 51.8 percent of non-pet owners. Wood et al. (2007) also reported 74 percent of pet owners were more likely to have a high score on a social capital scale compared with non-pet owners. Likewise, Wood et al. (2015) found that overall, 42.3 percent of pet owners had received some sort of social support from people they reported meeting through their pet.

Graham and Glover (2014) supported this conclusion and also found that the status of a pet owner eclipsed social categories determined by age, gender, ethnicity or class. In this way, pet ownership enhanced a sense of community between people. The data did reveal however, that the promotion of social capital could depend on circumstances such as the way pets behaved towards other pets. In this way, negative behaviour between pets could potentially limit the opportunity for interaction or even increase anxiety between people. Levels of reciprocity and trust were also found to be markers for the connection between pet ownership and social capital. In summary, this quantitative and qualitative body of research produced a consistent set of findings to support the hypothesis that pets can potentially facilitate social interaction and a sense of community to promote social capital that can indirectly benefit human health.

Neutral or Negative Health Effects

A systematic examination of the literature identified research that highlighted ambiguous, neutral or negative effects associated with companion pet ownership and health. For example, peer reviewed articles by Thorpe et al. (2006), Staats et al. (2007), Chur-Hansen et al. (2008), and

Rijken and van Beek, (2011) hypothesised that companion animals do not always offer physical or psychological benefits. To begin, Thorpe et al. (2006) called into question whether pet related physical activity was sufficient to deliver measurable health benefits over time. This was followed by the Staats et al. (2007) hypothesis that re-examined the Staats et al. (2006) finding that a mere belief in the health giving benefits of pet ownership accounted for reported psychological or physical improvements. Next, Chur-Hansen et al. (2008) explored reasons why people make a deliberate choice not to own a companion animal and finally Rijken and van Beek (2011) investigated the notion that pet ownership may in fact not be beneficial to health for the elderly. Specifically, cat ownership was found to have a detrimental effect on health related outcomes for some older people.

This attention to the negative aspects of pet ownership in relation to health is justified given that most of the current literature is derived from the positive perspectives of pet owners who either form the population samples in quantitative research or undertake the role of interviewee in qualitative research and may unconsciously bias results. Furthermore, according to Rijken and van Beek (2011) the contradictory results that tend to plague the quantitative human-pet relationship studies may be due to a lack of consideration of confounding variables such as the effect of socio-economic levels between owners and non-owners or the varied ways in which pets can affect health.

One potential limitation in the Thorpe et al. (2006) longitudinal design, was that the expected human functional decline within the elderly sample may be one of a number of factors to interact with a pet relationship over a period of time. Any findings could be confounded by age, mental and physical health, living arrangements and housing, all of which are reported to be strongly related to pet ownership (Barker & Wolen, 2008). A second limitation apparent in the Chur-Hansen (2008) qualitative design in that the sample was homogeneous and would not be able to be generalised. Lastly, prior assumptions that a relationship between companion pets and loneliness actually existed before the questionnaire was compiled and administered, limited the validity of the Staats et al (2007) and Rijken and van Beek

(2011) studies. As a result, the design limitations evident in this body of research might mean that: (a) complexities related to the negative factors linked to pet ownership might fail to be captured; and (b) that there is a lack of generalisability. These factors could account for erroneous results being generated.

That being said, strengths outnumbered weaknesses in the methodology used in these studies. To begin, from a scientific point of view, the random sampling of 3,075 elderly participants used by Thorpe et al. (2006) increased the reliability of any findings that were drawn. However, the obtained data on physical activity relied on self-reports and the interview, both of which are argued to be open to subjective bias. Next, a strength of the Chur-Hansen et al. (2008) qualitative methodology was that it was not guided by preconceived hypotheses and predictions (Edwards, 2012). Instead, an inductive approach meant that the use of open ended questions generated in-depth information from which patterns were identified for further analysis. This was in direct contrast to the predictive nature of multiple choice alternatives offered in the Staats et al. (2007) study. One weakness identified in the Chur-Hansen (2008) study however, was that the eight participants had all previously experienced pet ownership which may have limited the range of responses.

Yet another strength of the survey method used by Staats et al (2007) and Rijken and van Beek (2011) was that it enabled the researchers to subject the responses to data analysis using measurement scales. As with all scales they are normed in one country and situation specific. So the results for these studies would be based on norms for the Netherlands. Nevertheless, this body of research aimed to address some of the methodological weaknesses argued by Herzog (2011) and Wells (2009) to have hindered the development of a clear understanding of the health-related effects of pet ownership. Despite this, an examination of the methodology used in each of these studies revealed weaknesses.

The conclusion drawn in the Thorpe et al (2006) study suggested that cat owners were more likely to experience falls. This assumption may have

been due to lack of exercise and this may have confounded the finding that cat ownership was not associated with increased physical health. The fact that the data did not allow an assessment of temporal relationships, due to being collected at one point in time, calls into question whether cat ownership precipitated poor physical health or vice versa. In addition, selection bias may have meant that the health status of a participant may have influenced the choice of pet. For example, a cat may have been perceived as easier to look after than a dog. So causality could not be determined but the authors were justified in being able to hypothesise that there could be a potential association between cat ownership and a lack of exercise.

In a similar way, the Staats et al. (2007) and Rijken and van Beek (2011) studies were able to make statements about potential relationships between companion animals and health benefits. For instance, Rijken and van Beek (2011) found that cat ownership did not contribute to perceived health and wellbeing for an elderly population. Instead cat ownership tended to be associated with greater use of mental healthcare. This conclusion could be scientifically justified on the basis of the use of a large random sample or it could equally be due to the fact that women tend to be higher users of health services (Heady, 1998). Statistics have also confirmed that older, single women are more likely to be associated with cat ownership (Gluick & Krause-Parello, 2012). Staats et al. (2007) found that pet ownership in itself was not related to self-reported health. The previous Staats (2006) finding was corroborated in that a mere belief in the beneficial aspects of owning pets may in itself account for perceived health and wellbeing. As most of the participants reported good general health, the buffering effect of this belief was not tested.

Lastly, Chur-Hansen et al. (2008) found that reasons for not owning a pet among an elderly population tended to be either emotional or practical. Emotional reasons varied from a notion that a pet had similar emotional demands and responsibilities as that of a child to the grief suffered when a pet dies. Practical reasons included issues of convenience such as the burden of a pet when wanting to travel and cleanliness and hygiene, while negative

aspects included scratching furniture, allergies, veterinarian costs and demands made on time and energy. While these conclusions appear justified, they were limited to one population as the sample in this study was white, Anglo-Saxon and middle-class. Other societies may have different beliefs regarding the value of cat ownership. Therefore, all of the negative perceptions of owning cats that have emerged in these studies could potentially confound findings in quantitative studies if the participants happened to be older. These negative factors may also have multiple implications related to the use of companion animals in different healthcare contexts in the wider community.

To conclude, it would appear from this literature review, that while some people actively chose not to keep a pet, such as a cat for emotional or pragmatic reasons, other people reported positive effects that accrued from interacting with pets. There appeared to be three possible explanations that linked pet ownership and human health. The first explanation was that interacting with a pet, for instance a cat, could act as a buffer against cardiovascular risk factors by moderating the response to stress and lowering blood pressure. The second proposition was that a relationship with a pet could moderate the effects of loneliness, anxiety and depression so that pet owners experienced fewer health problems overall. The third hypothesis was that pets were able to enhance social connectedness thus indirectly affect wellbeing. Throughout all of these studies the association between a companion pet and human health relied on a relationship. Furthermore, it was through this interaction that companion animals may or may not have exerted an influence on human health. However, few articles explained the nature of a human-animal relationship or interaction. While some studies reported positive effects that accrued from such a relationship, others have found that the health and wellbeing of pet owners was no different to that of non-owners. Despite the lack of conclusive evidence that links pet ownership and human physical and psychological health, people still persist in acquiring pets and tend to believe that their pets are good for them.

Studies have tended to be quantitative as they have focused on measuring the individual benefits derived from a human-companion animal relationship. An understanding of the nature of the relationship that sits behind these outcomes has largely been overlooked. As previously discussed, a number of researchers including Chur-Hansen et al. (2010) and Hosey and Melfi (2014) have identified a knowledge gap in our understanding of what constitutes a person-pet relationship for different people in different circumstances. It would appear that the relationship itself is a taken-for-granted assumption in need of interrogation as it appears to be an important component in the argued link between pets and health. Furthermore, only two articles in this literature search featured studies undertaken in NZ. As cat ownership is widespread in NZ, it made sense to conduct the proposed research in this local setting so that the results will have relevance for the local community. With this in mind, a qualitative approach was undertaken to focus on what constituted a relationship between an owner and their cat. It was anticipated that themes not previously considered as important may be identified to enable a greater understanding of the mechanisms at work in the relationship between cat ownership and health. Consequently, an exploration of the nature of person-cat relationships and how this may be part of people's health will be core to this thesis.

Method

The realist epistemology that underpins the current study rejects the reductionism of scientific enquiry. It does not involve the search for a singular, unbiased, empirically valid worldwide truth. Nor does this realist approach believe that this truth can be revealed through the use of the scientific method. Realism does not support the idea that what counts as knowledge remains the same over time and place where cause and effect can be replicated. Furthermore, realists maintain that the generation of meaningful knowledge is not limited to that which can be observed through rigorous scientific methodology (Miles & Huberman, 1994).

Instead, a realist epistemology places an emphasis on the possibility that there can be alternative accounts of phenomena as opposed to the existence

of singular factual knowledge that is available to be accessed. In this way, a belief in realism holds that different people have different, equally valid perspectives on reality that are expressed through language. Realists maintain that it is not possible to attain a single, undisputed understanding of the world as this understanding is believed to be dependent on the individual point of view. Just as scientific methodology is focused on causality, most realists believe that the notion of cause and effect is a prevalent dynamic in the world we live in. In contrast, realists hold that the concept of a mechanism or process that acts as an explanation for an outcome or effect is considered to vary according to context. This context is thought to differ as it depends on different meanings, intentions, mental conditions and personal attributes which are part of the real world even if they cannot be observed (Miles & Huberman, 1994).

In the present research a realist approach was used to report the different experiences, meanings and realities experienced by participants in the relationships they have with their companion cats. It was proposed that rich data would be generated through interviews that reflected the reality of this relationship as interpreted from a diversity of individual experiences of the human-cat interaction. Consequently, from this interest in the nature of the person-cat relationship, themes may be identified that have been previously overlooked but may be pivotal in understanding the mechanism at work that links this relationship to a reported increase in health and well-being.

Thematic Analysis

The method of this research used a qualitative study based on data from interviews with cat owners. This data was subjected to a thematic analysis. First the cat owner was interviewed and this interview was recorded and transcribed verbatim. The transcriptions of the interviews formed the data set. The content of the entire data set was systematically coded using phrases that appropriately described the meanings of segments within the texts relevant to the research question. All of these codes were listed so that similar codes could be combined in order to reduce lists to a manageable number. These combined codes became potential themes and were organised into theme-piles together with the extracts of data from the entire

data set that supported them. Distinct over-arching themes and sub themes were drawn from the initial analysis to accurately reflect the meanings evident in the data set as a whole. A thematic analysis evidenced by data aimed to convey a coherent, logical account of the story told within and across themes.

It needs to be noted that numerical percentage and frequency statements were not inclined to be used to report all themes in this thematic analysis. Instead expressions such as "a common theme" or "some participants commented on" tended to be utilised. According to the Australian health researcher, Pyett (2003) the numerical frequency of a data item does not necessarily determine value. Moreover, Pyett (2003) argued that occasionally something that is insightful for understanding our research question is not always determined by whether large numbers of people said it. Lastly, it is widely accepted that all sound quantitative and qualitative research relies on trust, honesty and appropriate practices. Therefore, the reporting of numbers does not determine that this has necessarily occurred.

The present analysis considered broader meanings and implications revealed by themes that were identified. Finally, broader meanings and implications were used to theorise or explain a possible relationship between cat ownership and health.

Recruitment Method

The participant group for this study was recruited by word of mouth among people who were known to the researcher in either the capacity of friends or work colleagues of friends, previous work colleagues of the researcher or neighbours. First, the participants were introduced to the purpose of the study by phone. This introduction was followed up with an information sheet pertaining to the study which was emailed to each participant. The information sheet outlined the purpose of the study, participant recruitment criteria, project procedures, data management and the rights of participants based on the Code of Ethics for Psychologists working in NZ (New Zealand Code of Ethics, 2002) (Appendix A). This document also included the Massey University Human Ethics approval statement and an invitation to participate. In addition, contact details for the researcher and the supervisor

were incorporated into the information sheet for future reference should any questions arise. Finally, a copy of the ethical approval notification for the study that was peer reviewed as “low risk” was included. After reading the study information material there was a positive response to participate in the study from all 10 people who were recruited.

Inclusion Criteria

One over-arching criterion item that was essential for inclusion in this study was that the participants all assumed the main responsibility for a companion cat for more than a month. Regardless of whether that cat had been passively or actively acquired the owner needed to report a close connection with the cat or cats. Another criterion item for selection was that the participants were 45 years of age or older. An even number of five males and five females was selected. The reason for selecting from a middle aged and older cohort was based on the premise that they shared a similar phase in life typified by either the latter stage of working life, dependents about to leave home or impending or actual retirement. These circumstances could mean that similar advantages and disadvantages might become apparent in the decision to own a cat. For instance, the increased freedom to travel and pursue recreational activities or the move to a retirement village versus the responsibility of owning a cat might have become a consideration for people in this older age bracket.

Yet, another criterion for inclusion in this research was that participants experienced normal health as many previous studies had focused on the pet effect for participants with a chronic condition. Therefore, participants were excluded from this study if they did not own a cat, were of a younger cohort and did not experience good health. No potential participants that were approached were excluded.

Sample

The participants in this study comprised of five female and five male older adults who ranged in age from 45 to 77 years. Two participants were aged between 45 and 50 years of age, four participants were aged over 52, two participants were aged over 64 and two participants were aged over 70. They included a gardener, two educators, two consultants, a doctor, a

lawyer, an accountant, a social worker and a retiree. Seven of the participants lived in an urban environment in Auckland while three lived in a rural environment located near Auckland, Wellington or South Canterbury. Four participants who lived alone or with one other adult owned one cat while five participants who lived in a household of more than two adults owned more than one cat along with other animals. One participant who lived with one other adult and in a rural setting owned three cats and other animals. Therefore, the sample recruited for this project were a middle aged and older cohort from a range of occupations and living arrangements who shared one key similarity in that they all assumed responsibility for at least one cat.

Interviews

The interviews mostly took place in a quiet room in the home of the participant unless the participants indicated that they would prefer to meet at the home of the researcher. One interview was by phone due to the participant living some distance away. On arrival, the researcher introduced herself and briefly explained that the purpose of the interview was to talk about the relationship they experienced with their cat. Assuming that the participant was fully informed having read the information sheet and having agreed to be involved in the project, they were first asked to sign an informed consent form (Appendix B). The consent form gave the researcher permission to sound record the interview and the interviewee the right to pause or delete what was said at any stage. Next, the researcher explained that she wanted them to assume that she knew nothing, that even seemingly trivial details were of interest, nothing would be considered unusual, and that she was interested in factors and aspects that typify the relationship they have with their cat. The researcher also re-emphasised that at no time would the recording or any data generated from it be able to be identified with the name of the participant.

A questionnaire was developed by the researcher (Appendix C). This was designed to prompt the participant to talk freely about the everyday interactions that occurred between them and their cat. The open-ended questions were intended to draw out in-depth information from which

themes could be identified. These questions were based on the assumption that the participant experienced a particular association with their cat and that the presence of their cat was an important part of their lives. However, the questions were only used as a prompt if the input of the participant began to wane or to stimulate further in-depth information on an aspect of the relationship raised by the participant.

The interviewer began by asking the participant to introduce the name or names they have for their cat and then how it came to be in their care. This revealed the nature of the acquisition of the cat and enabled the researcher to acknowledge the cat by name and in doing so demonstrate respect and acceptance of the cat as a unique being. The first open-ended question was designed to stimulate the participant to talk freely about the interaction they experienced with their cat on a day to day basis. When no more information was offered the following questions were used to trigger responses about aspects of their relationship with their cat that were not already covered. Questions four to six were designed to evoke talk about the nature of the interactions that the participant might experience with their cat during a typical day. Questions seven and eight intended to prompt appraisal of the positive and negative aspects of having a cat as perceived by the owner and stimulate a response as to how these might impact on their daily lives. Questions 10 and 12 focused on the strength of any emotional feeling that the participant felt for their cat and how this might be given and received. Questions 13-16 were intended to interrogate the perception of the role or position that the cat occupied within the household and how this was justified or allowed. These questions had the effect of giving insight into the significance placed on the bond that the owner experienced with their cat. The final five questions aimed to stimulate talk about anecdotes that seemed to typify the association the owner had with their cat. The participants were finally encouraged to consider the value that this person-cat relationship might have on them as people. The justification for the focus of the interview questions being based on everyday person-cat interactions was that this was an investigation into what constitutes and maintains the bond between an owner and their cat. As it was, information on this link between

an owner and their cat tended to emerge quite naturally during the course of the interview.

Each interview was conducted by the researcher and lasted approximately 45 minutes to one hour or when the participant had said all they wanted to say. At the end of each interview the participant was thanked for their contribution and presented with a ‘cat pack’ which consisted of two tins of cat food per cat and homemade truffles for themselves as an acknowledgement of their time.

In order to strengthen the analysis process and gather the most appropriate data, the researcher reviewed the first recording and reflected on the questions. It was felt that there was a need for the questions to be organised into topic defined categories to avoid overlap and enhance the flow of the responses. For instance, “how might your cat have influenced your lifestyle?” seemed to be repeated in “how might your cat influence the way you do things in and around the home?” In addition, some wording was simplified, for example, “rituals” was changed to “routines” to be more easily understood by all participants. The first recording was transcribed to gain an indication of how much raw data was stimulated from the preliminary set of interview questions and this was adjusted not only for better flow but to be more concise and less repetitive. At each subsequent interview the researcher became more confident in using participant responses to prompt further talk. On reflection however, this caused the later interviews to differ from the initial interviews as the skill of the researcher conducting the interviews improved. An increased volume of relevant data generated by the participants in subsequent interviews may have been attributed to the improvement in the fluency of the interviewer and interviewing technique. The interviews may have also differed from each other because as interviews are fluid, flexible and interactive data collection tools, the data generated from each participant can be quite different. As it was, the participants did not discuss exactly the same aspects of their relationships with their cats.

Ethical Issues

The Code of Ethics for Psychologists working in Aotearoa New Zealand provides a framework which is underpinned by a commitment to the Treaty of Waitangi (New Zealand Psychological Society, 2002). The guiding principles of this framework that promote respect, integrity, caring, justice and responsibility were considered for this research project. For this reason priority was given to practical implications of this research that would ensure that these principles were upheld. First, the ethical principle of respect for the dignity of persons required that participants were asked for written informed consent prior to involvement in the study. Participants were advised that they could request that the recorder could be turned off at any time during the interview. They could also decline to answer any particular question but also ask questions about the study at any time during participation using the contact details supplied on the information sheet. The participants were also notified that they had the right to leave the project at any time. Furthermore, only information relevant to the purpose of the study was recorded and any names and details that led to identification was removed. Care was also taken to store, handle, transfer and dispose of original data. Of equal importance for the benefit for the wider population, the research had the potential to help in the understanding of the mechanisms at work in the relationship between companion animal ownership and health.

Second, the principle of responsible caring provided guidelines for the ethical consideration given to the accuracy of raw data that was generated and the integrity of the participants who provided it. Therefore the minimisation of risk or harm was achieved when transcripts were offered to be returned to the participants for editing. Participants were also each reimbursed appropriately with a ‘cat pack’ as an acknowledgement of their time.

The project was evaluated by peer review and assessed to be low risk and assigned a notification number 4000015634 for the Massey University Human Ethics Committee. As a result, the researcher was responsible for the ethical conduct of this research.

Subjectivity

Qualitative researchers recognise that even in rigorous scientific studies the subjectivity of the researcher is still evident. Subjectivity guides everything including the choice of topic, formulation of hypotheses, selection of methodologies and the interpretation of the data. Similarly, according to Ezzy (2013) effective qualitative research is characterised by subjectivity that occurs when it is conducted through established relationships with people. Furthermore, subjectivity is believed to be achieved when researchers participate in the lives of their subjects as opposed to purposefully distancing themselves from the investigation. Therefore, subjectivity is evident in both quantitative and qualitative methodologies.

In the current study subjectivity was emphasised as the participants were not only known to the researcher but were known to have a relationship with a cat. The participants were also aware that the researcher owned a cat and this familiarity may have enhanced the degree of trust between the researcher and interviewee. As a consequence, the participant may have potentially felt more at ease and as a result the detail and complexity of the information they shared may have been enhanced. Furthermore, the interpretative rigour of a thematic analysis demands that the researcher is able to demonstrate clearly how interpretations of information are drawn from the matching of findings with direct quotes from the raw data. So, the quality of the analysis depends to some extent on the quality of the obtained data. With this in mind, any influence that can improve the richness of the data could therefore be argued to potentially improve the rigour of the study.

Analysis

The descriptive data transcribed from interviews was subjected to a thematic analysis that is a widely used method in qualitative research. Thematic analysis offered a systematic guide to allow for the identification, analysis and reporting of patterns or themes across data. It is considered the most appropriate methodology when the aim was to obtain a detailed and accurate analysis from an examination of these themes across an entire set of data (Alhojailan, 2012). Similarly, Braun and Clark (2006) maintained that thematic analysis was useful when investigating an aspect of a topic that is

under-researched such as the nature of the person-cat relationship for different people in different circumstances such as was undertaken in the present study. Themes are argued by Braun and Clarke (2006) to be patterns that were identified within the data set that appeared to capture something important relative to the research question. The observed frequency of a theme is also important in thematic analysis as this not only suggests that the theme actually occurred in the data but that the data appeared to be comprehensively represented (Braun & Clark, 2006).

Thematic analysis also enables researchers to use inductive methodology. Accordingly, this bottom up approach allows for different codes and themes to originate from the data without the influence of the generalisations identified in any previous research (Braun & Clark, 2006). In the present study, the precise data derived from the participant interviews provided the sole basis for the analysis.

Yet another factor that characterised thematic analysis was the interpretative level at that the analysis was focused. For the present study the analysis focused on the semantic level. This meant that the researcher was bound to text and organised what the participants described during interviews into patterns that could be categorised and summarised into themes. The analysis then progressed from a descriptive stage to the development of wider meanings and implications. Some attempt was made to theorise why these might have been significant in relation to the research question (Braun & Clark, 2006). In the present research, a realist epistemology guided the thematic analysis. A realist belief holds that people account for their lived experience through language (Potter & Wetherall, 1987). As a result, this enabled motivations, experiences and meanings related to the nature of the person-cat relationship to be theorised in a straightforward way.

In summary, a thematic analysis was undertaken in the current study based on a realist paradigm at a semantic level while using an inductive approach. This process involved searching across data arising from 10 interviews to find repeated patterns of meaning from what the participants said and that appear to reflect the nature of the person-cat relationship.

To begin the first stage of this thematic analysis, the data collected from each of the 10 interviews was transcribed verbatim. This was typed as the researcher listened to a recording of each interview and double checked for accuracy against the recordings. Due to this immersion in the text the researcher was able to become familiar with the content and scope of the data in order to gain a sense of the patterns of meaning related to the person-pet relationship contained within (Braun & Clark, 2006). As the thematic analysis was conducted manually for this study, each interview was transcribed and printed with double spacing and a wide margin. This allowed the researcher to record ideas and possible patterns that became apparent through the transcription and prior to coding and cutting and splicing. The raw data comprising 32,459 words was read carefully so that the meaning of each segment of the text that related to the person-cat relationship could be given a provisional code.

Following on from this initial stage of analysis, provisional codes that comprised of one or two word summaries were used to identify features across the data set that appeared potentially relevant to the research question (Frith & Gleeson, 2004). In this way, the entire set of raw data was subjected to a process where equal consideration was given to all of the data items that were generated. Next, the segments of text attached to each provisional code were cut and placed in files labelled with these code names. The same segment of text could be included in more than one file. For example, the extract "what are you doing mate – its half past seven and you haven't fed me" coded within "Gendered identity" could also fit into "Anthropomorphism" or "Share routines with my cat". Following this inductive analysis, 30 initial codes were identified (Appendix D). Finally, the data was systematically reviewed to cluster similar codes together. As a consequence, one code became redundant.

The data extracts coded as "Significance in the name" were discarded when they did not seem relevant to the nature of the person-cat relationship while the data extracts coded as "Communicating with cat language" were combined with "Conversation." A thorough check and recheck ensured that the data contained within each file supported the code to which it was

allocated. As a result of this inductive thematic analysis, 28 categories or codes were identified and supported by transcribed extracts.

The third stage of this thematic analysis involved searching for themes from the 28 codes that had been generated (Braun & Clarke, 2006). These themes explained larger sections of the data by joining different codes that were similar. This process meant that consideration was given to how codes could combine into 15 sub-themes that were then narrowed down to five key themes without losing the sensitivity of the meanings within the data. First, the coded files were organised and reorganised into potential theme piles. During this procedure some initial codes were split or linked between themes, while others were removed if there was not a good "fit" with themes relevant to the research question. At this point, the researcher considered links and relationships between themes. By the end of this phase a collection of five potential themes and 15 sub-themes with all the extracts of data belonging to them were retained. (Appendix E).

The themes were only preliminary and the researcher returned to the process explained in the third stage to reconsider the possibility of alternative themes. This was prompted after thinking about how each theme fitted into the overall story told by the data. So, a complete review of the original themes and the coded data within each file took place. All the collated data was examined to ensure that the relevant features contained within it fitted with the theme and that these themes were distinctive and addressed the research question. At this point, the researcher decided to collapse the theme "Like a child" into the theme entitled "One of the family" as the former appeared to be a sub-theme for the latter.

A new theme was drawn from the remaining themes and labelled "Communication" when the interpretation of the meow, purr and conversation were anthropomorphic in nature and seemed to be significant in the person-to-cat connection. For example, a total of eight out of ten interviewees used human-like interpretations to produce 69 data items that described their cats.

The researcher then decided upon a set of five main themes altogether with the theme of "Identity" appearing to be an over-arching theme. Each of these themes encapsulated the essence of the data within it and each theme was also clearly distinguishable from the other. The theme of "Identity" however, seemed to be significant as it was represented across the whole data set. As a result of this systematic checking a definitive set of four main themes and one predominant theme was established. (See Appendix F for final set of themes)

As this thematic analysis used a realist approach at a semantic level, it assumed that the meaning and experience of cat ownership was contained in what the participants articulated. So, it seemed appropriate to use short extracts from the data to encapsulate the essence of each theme where possible. These extracts and the subsequent revised theme definitions were as follows**:** (a) Communication – "I talk to my cat regularly" (b) Companionship – "A good companion") (c) Inclusiveness – "One of the family" (c) Interdependency – "Someone who is dependent on you" and (e) the over-arching theme of Identity – "He is handsome, she is beautiful"

Results

In this section the themes and subthemes are described with illustrations from the data.

The thematic analysis process that was applied to the transcripts elicited key concepts that were evident in the data. These themes were viewed as important in determining the nature of the relationships experienced between the participants and their cats. The themes were divided into categories that were labelled as: (a) communication "I talk to my cat regularly" (b) companionship "a good companion", (c) inclusiveness "one of the family" (d) interdependency "someone who is dependent on you" and (e) the key theme of identity "he is handsome, she is beautiful". A systematic research process was applied and concepts were not isolated but are often linked to each other. Therefore, some aspects of the relationships that participants experience with their cats overlapped with other categories.

Communication

One theme identified is described as communication. This theme was centred on the verbal and non-verbal interaction that took place between owners and their cats. The first type of interaction that was identified encompassed the perceived cat-human interaction which included the sense made of meows and purrs. The second type of interaction focused on the manner in which the human-cat communication took place. This included the use of a special cat voice, nonsensical conversation and high pitch baby talk. This seemed to reinforce a sense of social connection between the owner and their cat.

Talking with the Cat

In a majority of the texts, there was a reference to a particular cat voice that the owners used when communicating with their cats. Often the owners talked of mimicking the pitch of their cat's voice. This was understood to be an effective way to communicate and have the cats talk back. So the use of a special cat voice emphasised one way that owners aimed to connect with their cats:

"I have a special cat voice which is a very high nonsense voice and words ...I call out to him, it's more a tone of voice ...I use a higher pitch sometimes ... I mimic their pitch and tone and they talk back and *I have a kind of cutesy voice for them".*

Meow interpreted

Owners tended to ascribe human interpretations to the meow of their cats. This appeared to be a way to increase the feeling of connectedness between them and their cat when owners professed to understand what the cat was wanting. In most of the texts analysed the meow or wail was interpreted as a demand for food. This appeared to be a plausible understanding of the meow used in this situation:

"...Siamese don't meow, she wails. You can understand her by the way she wails if she's hungry...

One participant perceived the meow to also be a demand for some physical attention as well as food:

"…I've been out all night doing what cats love to do so I want food… I'm here so talk to me, I need feeding and I want a pat".

The tone of the voice used by some owners was considered to be important when they wanted to signal the difference between approval and disapproval when managing the actions of their cats.

"…I just yowl because I know that scares them …if he's heading to the new furniture he gets a good bellow and he knows he is out of favour and*…if we've seen that they have been up (on the bench) they get yowled at"*

So owners often used a special cat voice when they communicated with their cats and grew to understand the meanings of their meows in a way that formed a connection between themselves and their cat.

Purr Interpreted

While the meow was perceived as an indication of a demand that the owner needed to satisfy, the purr was frequently interpreted as a sign that the cat was happy. The purr was described as soothing by one participant when it was associated with a feeling of love and a sign that the cat wanted to be with them. For these reasons the purr may have also reinforced the strength of the connection between the owner and their cat.

"…their purring is a big thing, it just shows that they are content…he had a very strong purr, I think it meant that they were contented …he'll be purring all the time and you can see he's affectionate and contented and *… I find the purr really a really soothing thing for me – it's because they love you and want to be with you- that kind of relationship".*

Furthermore, the purr was associated with closeness in physical proximity and emotional attachment:

"…he's a great purer and will often snuggle in and purr when I'm talking to him… …he will often smooch around me and purr and purr".

Actions Interpreted

In order to account for some behaviours participants attributed human emotions to the actions of their cats. The perceived understanding of the

cat's thoughts and actions seemed to reinforce the special connection between the cat and their owner:

"… (cat) gets jealous of that so quite often there's a fight on who gets to my lap first…he will flick his tail so you know this isn't on and then march out…he gives you a cuddle and want some more so he'll stretch his paw out to say don't go away"

Conversation

In nine of the texts analysed the owners spoke of having conversations with their cats. These ranged from what was described as nonsensical to sensible from a human point of view. Some participants talked to their cats as they would to a human:

"… I direct a comment his way occasionally – I do suggest to him that he had better not cross the street – I do suggest that it is not his best practice…I'd probably talk to them as if they are human many times…we have little conversations (such as asking) *what have you been doing today; did you do anything interesting?…*

Others used nonsense talk mixed with a high pitch to talk to their cats. This was described as being similar to baby talk which seemed to reinforce the role of the cat as being similar to that of a child in the person-cat relationship.

"… a typical conversation is nonsensical really … talk to the cat in the usual ridiculous way that you would to a baby and …it's a very high nonsense voice and words"

These participants considered that the meow that sometimes followed talk from the owner was the cat responding to them. This response however, was not necessary for the owner to have considered that a conversation had taken place. A conversation could include a mixture of human talk, meows, purrs and actions proffered by the owner or the cat. Talking was sometimes combined with stroking to reinforce the feeling of a close tie between themselves and their cat:

"...I might meow back to them or just talk to them and you know stroke them"

All participants commented on the communication they used with their cats and whether or not it was nonsensical they considered that they talked with their cats regularly:

"...I talk with my cat regularly... I do suggest to him that he had better not cross the road, that it is not his best practice"

To conclude, participants tended to use a special cat voice to communicate with their cat. They interpreted meows as demands for food or attention while purrs were understood to be a signifier of love, contentment or a desire to be with them. This communication served as an important channel to forge a connection between the owner and their cat based on mutual attention and perceived understanding.

Companionship

The theme of companionship encompassed the feelings of closeness and a rapport felt by participants when in the presence of their cat. Five subthemes were identified as contributing to this notion of companionship. First, the subtheme 'a good companion' explored the notion of the cat being considered like a friend from the perspective of the owner. Second, 'attachment' highlighted the bond that can exist between an owner and their cat when it offered contentment and support. The third subtheme of 'love' focused on how this bond could be associated with feelings of affection. Fourth, the concept of 'relaxation' emphasised the benefits gained from spending down- time with their cat. Finally, the subtheme entitled 'interactive games' centred on the mutual enjoyment that owners and cats gained from physical interaction together.

A good companion

The theme that was most prevalent in this analysis was identified as that of companionship - "a good companion". Participants regarded their cat as a reliable friend who offered a feeling of familiarity and closeness when they were present. For example a participant said:

"…He'll just hang around …during the day he's always there…if you're on your own and working around the place he's a presence…"

The feeling of companionship gained from the passive presence of their cat meant that the participants felt the comfort of not being completely alone. This was particularly talked about by the participants who lived alone or spent extended periods on their own:

"…if (partner) is away in Australia you are not entirely on your own around the place because at least you have the cat hanging around … Just the feeling that there is another presence around and not entirely on your own". Sometimes, just the close proximity of the physical presence of their cat evoked warm feelings for the owner. These warm feelings led the owner to consider their cat like a close friend:

"…he'll sit there when I sit down to have a beer…he's a good companion overall…I'm very fond of this cat - …I think I've got a good friend…he's my mate".

A feeling of companionship was also evident in the way that two participants talked about their cat enjoying the same activities as they did. Here the personality of the cat was anthropomorphised to be just like that of the participants. The relationship between the owner and cat was positioned as being exclusive due to shared characteristics:

"…he will follow me into the garden – she considers herself quite some gardener …I admire him as he does as he does and … he knows where to find silence cause he likes a very quiet house like me".

The identification of the cat as a companion was referred to as being a sort of life giving force that was positive and enjoyable. It would appear that their cat was able to boost their mood and make them feel revitalised:

"*…she's an energetic sort of a presence* and *…it's somebody else that's around" "…it's funny, it's light hearted, it's refreshing and it kind of lifts your spirits a bit when he's around".*

Attachment

The concept of attachment encompasses a relationship between an owner and their cat derived from a feeling of affection that appears to provide a sense of security and comfort for each of them. There are three different aspects to this concept. First, an attachment can be from an owner to their cat where the cat seeks to be physically close to the owner and receives care and attention. Second, an attachment can be from a cat to their owner where the cat appears to be freely available and responsive to the moods of the owner and able to offer emotional comfort. Lastly, the idea of a mutual attachment or bond involves the relationship between an owner and their cat where positive feelings are generated to create a sense of connection and happiness.

In some instances, participants would actively seek to be physically close to their cats. This suggested that their companionship was important to them. There was also evidence of the owners feeling confident that they could depend on the company of their cat to make them feel happier. The belief placed in the strength of this relationship seemed to reflect the attachment the owner felt for their cat:

…it is important for me to find the cats and sometimes I will go round certain places in the garden to try and find them because I know they will be good for me".

In other instances, the cat was described as seeking to be close to the owners as if they were sensitive to their emotional needs. One owner spoke of her cat sensing when she was sick or sad and actively trying to get close to her. This was perceived by the owner as comforting:

"…When I'm sick he'll jump on the bed and be close to me and when I'm sad he kind of senses it".

This notion of attachment that the owners expressed for their cats appeared to come from an understanding of a bond that existed between them. This understanding was built on a perceived mutual feeling of contentment when in the company of each other. The interpretation of the consistent 'hanging around' behaviour was that the cat was equally motivated to seek the

companionship of the owner. This apparent motivation was attributed to a mutual rapport and feeling of love:

"*… he would qualify as a companion…he's just hanging around, I think that's the main attachment, he's always there…it's a companion and a source of affection"*

This sense of attachment was also associated with the cat following them around and keeping physically close, both of which also led owners to feel a loving bond:

"…This is what I've just loved, because when I come home he follows me around the garden"

This person-cat bond was often described in terms of an exclusive relationship shared between the cat and themselves:

"…we have a quiet time together and I would stroke him and he'd purr… she quite likes to be taken outside and just for me to be with her"

Some participants attributed the action of the cat following them around as the cat wanting to be near to them and what they were doing. The feeling of attachment would be enhanced by spending time together:

"…whatever you are doing he will want to do it too and *…follows us doing what we are doing around the house".*

Confidante

The companionship experienced between the owner and their cat was typified as being supportive, warm and unconditional. Participants spoke of this relationship as offering them calm reassurance and love when they were feeling unhappy. These owners felt they could rely on the loyal friendship of their cats to feel liked and appreciated:

…I feel they are quite soothing when everything else is going bad in your personal world that cats are still there, they still love you, and they still want to be around you"

Some participants commented on how the companionship of their cat assumed the role of a confidante when they turned to their cat for emotional

support. The company of their cat was sought when they felt that human company could not fulfil their emotional needs. In particular, the two educators within the sample that included nine participants with jobs, spoke of the capacity of their cat to offer them a sounding board. This occurred when emotional resilience had been depleted by work, collegues, human friends or family:

""...if I'm a bit empty and got nothing to give, the first thing I do is reconnect with my cats ...it's that unconditional love, that they are there and that they listen, they are non-judgemental, you can just be yourself, they don't mind you being grumpy with them, they don't hold a grudge and you don't have to apologise"

This transcript depicts the way in which the relationship with the cats was relied upon to be a completely non-critical, listening ear. This allowed the owner to just be themselves and unload any personal problems with their cats. The perceived acceptance and social support provided by this relationship served to buffer feelings of stress for the owner. It would seem that participants sometimes sought the company of their cats when they wanted to feel more calm and relaxed.

Relaxation

The feeling of relaxation was often associated with activities that involved sitting near the owner or on the owner for a period of time. It would appear that the sense of companionship associated with time spent in the company of each other was quiet and relaxing. The feeling of being relaxed may have been enhanced when the time spent with their cat became a break from daily routines and pressures:

"...I spend more down time relaxing rather than doing work...she is a very calm cat and very relaxed about things"

This notion of the cat being linked with relaxation was apparent within four of the texts that were analysed:

"...he sits beside me and puts his paws on my shoulders...whenever I sit down I always end up with a cat on my lap...she will quite often have a sleep close to you and *...we share a lot of quiet moments"*

Physical contact was also found to reinforce a sense of companionship. When the owner focused attention on their cat with tactile activities such as tickling, cuddling and stroking, the cat often reciprocated with licking, snuggling or smooching. The attentiveness of the owner appeared to be reciprocated with affection from their cat:

"…I give him a stroke or cuddle as I am walking past him…he sits on my knees and I tickle him around the throat …he will want to snuggle, he likes to put his nose on my face…he will often snuggle in…they are both smooch kind of cats and …they will lick me on the chin"

Physical expressions of affection and fondness were again mutual and reaffirmed the feeling of companionship love and an emotional bond between an owner and their cat.

Love

The notion of love was defined as the feeling of affection that an owner felt for their cat. These feelings of affection and devotion were used to describe aspects of this relationship. For instance, half of the participants used the word 'love' when they talked about their cats during the interviews. The strength of this feeling for their cats was highlighted when participants talked about the emotional impact they thought they would experience if they 'lost' their cat:

"…we love her, we really love her a lot, we have strong feelings for her and we would be devastated if anything happened to her …I'm very fond of this cat and I will be really sad when he dies"

Participants attributed the increase in loving feelings within their home to the influence of their cat:

"…I love my cat…we have strong feelings for her and *…she has brought loving feelings into the house".*

Another participant spoke of turning to his cat for love which highlighted the unconditional nature of the person-cat relationship:

"*…when I'm lacking love, I glean it from my cat".*

A sense of love and affection were often reinforced by enthusiastic greeting rituals that occurred especially when they returned home. This welcome behaviour seemed to lead the owners to believe they were loved:

"…I love to come home and there's this ritual, he knows the car…in his eagerness to greet you and run up and say hello, he might be craving attention and it's really funny to see him try and do wheelies… he would appear very rapidly once you came home and he rubs himself against legs and he's very welcoming".

Many participants also talked about morning rituals involving their cat as being an important part of their daily routine. These rituals highlighted the loving bond that existed in these person-cat relationships:

"I love waking up to him in the morning – he's an alarm clock… the cats will be waiting for me at the top of the stairs and follow me into the bathroom… and *we would have a quiet time together when I would stroke him and he'd purr and he'd arch his back and we'd talk to each other".*

Playful interactions

Participants talked about engaging with their cats through interactive activities such as games. Specifically, all of the male owners talked about playing energetic, physical games that involved running, chasing and rough and tumble pursuits. There was also a shared understanding of the 'rules' of each game and importantly, these interactions entailed that the cat was the focus of attention. The owners spoke of gaining enjoyment and amusement from playing with their cats while the cat was perceived to equally enjoy this interaction:

"…he (adult son) will do something to annoy her (the cat) and she will instantly know it's time for a game…she likes to play fetch and hide and seek which has different rules to playing chase. She likes being chased and then I will run away and she will run after me and*…he loves to ride in the wheelbarrow".*

Participants also talked about certain actions or noises that were made by the cat that were recognised as signs by the owner that the cat wanted to play a game. This demonstrated that how a mutual understanding of the

signs and responses that led to specific interactions could be pleasurable for the cat and the owner:

"… he'll (cat) initiate playing with him …he (cat) will challenge me to chase him, so I do …a little head peaks out around the corner and that's a very definite sign that she (cat) wants to play chase or… *he'll (son) do something to annoy her(cat) and she will instantly know it's time for a game"*

To conclude, the notion of a cat being a good companion for the owner was clearly evident across the data set. The undemanding nature of the affection derived from a person-cat relationship was found to surpass that which could be offered by human companionship at times. The feeling of companionship included feelings of happiness, mutual rapport, love, attachment, spontaneity, emotional support, pleasure and satisfaction. These feelings were derived from a sense of companionship associated with behaviours related to closeness, following, friendship, rituals, games and unconditional acceptance.

Inclusiveness

The second theme to be identified in this analysis was labelled 'inclusiveness'. This theme highlighted the status given to the cat and the extent to which they were integrated into the day to day lives of the participants. Cats seemed to experience a considerable degree of inclusiveness in the activities of these households. The subtheme 'defining spaces' considered the extent to which spaces in the home were available for use by the cat. A typical response was that the cat was regarded as one of the family. This was reflected in the importance attributed to their perceived needs and wants and the spaces that they were allowed to occupy.

One of the family

Nine of the participants clearly viewed their cat as one of the family. This emphasised the centrality of their cats in their day to day lives:

"…he sees himself as part of the family …… absolutely she is part of the family, she always comes into consideration"

The notion of a companion cat as a 'connector' depicted the cat as a conduit between the members of the family. Two participants attributed the increase in conversation among family members to the presence of their cat. In this situation the cat became a neutral topic of conversation in their day to day lives:

"*…he is a pleasant talking point around the place…he's a great connector with the family…he becomes a topic of conversation* and also *…he connects you with the wild life"*

Therefore, the role of the cat in the person-cat relationship was not only characterised by a sense of connection that was reinforced by friendly, tactile interactions but also that of a connector when their presence functioned as a go- between and facilitated human to human contact.

The status of the cat within the family was often described as being equivalent to that of a child. Some female participants talked as though they were a mother figure which positioned them in a caring role for the cat:

"…they are basically like my children at times……I would be like their mother so they are like my children"

A common theme that appeared within this category was the practice of using endearments when participants talked to their cats. These endearments were often comparable to baby talk and emphasised closeness and affection in the relationship between the owner and their cat:

"…I have all these nick names for both of them. So Sugar is Shuggy or Shug Shug or Chick Pea or Sweetie and Truffle is often Truffy or Truff Truff or I'll use a cutesy voice for them"

One participant indicated that their cat seemed to take the role of an absent family member which suggested that the cat could complement the make-up of the family unit:

"…a bit of a replacement child in a way"

Many participants reflected the importance of their cat when it was clearly included in the pecking order of the household. Participants tended to position their cat close to or alongside humans in the household hierarchy.

"…below a child but still a family member… he's in the pecking order, probably at number two after (wife) and ahead of me and*…for me personally, he's certainly not at the bottom rung*"

All of the participants commented on the amusement and pride they gained from observing behaviours that highlighted the individual personalities of their cats. These behaviours tended to be based around demands for comfort and food. Most of these participants demonstrated that they were fully aware that they were fitting in with the demands of their cat and amused at the intelligent strategies their cat used to direct their owners. This role reversal seemed to evoke a feeling of pleasure for the owner when they were able to make their cat feel happy and contented:

"…you tend to fit around the cat a bit I mean I would have waited to strip the bed if the cat was lying there in the sun…the cat absolutely adored the battered fish so I got to the stage of buying an extra piece and taking the batter off … they have me won over, they say cats have staff - I'm probably their staff member and *…I'm amused when you realise that they are directing me"*

Defining spaces

All of the participants' spoke of what they allowed their cats to do within the household. This talk usually related to the regulation of space that the cat could or could not use. Some participants held very strong views on the demarcation between family and cats and this was reflected in the spaces available to their cats. The reason given for regulating cats from using certain spaces such as the kitchen bench was hygiene but it may have also reflected the subordinate position assigned to the cat within the family hierarchy. Although the cats were banned from using certain spaces this did not preclude them from being described as part of the family as a whole:

"…Oh no! I would not tolerate my cats on the bench. I wouldn't like them on the table either. I just take that for granted. If I saw a cat walking on the

bench in another person's house I would think, why do you allow that? For some reason I'd feel it was unhygienic … and *…that doesn't preclude her being a family member"*

Other participants expressed awareness that they did not regulate the use of space in the home and tended to allow their cat freedom to break conventional boundaries associated with owning a companion cat. As family members in these households the cats could go where they liked. This appeared to reinforce an inclusive attitude held toward the cat and the status assigned to the cat within the household, despite possible social disapproval:

"…you could be eating something nice and he will want it off your plate so I am guilty as sin, I actually do feed him when I'm eating as well …she happily gets up on the bench or the table and she will sneak something off the plate and *…they are allowed pretty much wherever they like"*

One participant rationalised the behaviour of the cat being allowed on the table as a safety measure against the dog. The importance of the needs of the cat meant that spaces were opened up to the cat for their use:

"…We used to keep them off the table but now that we've got a dog they have to have places to escape and*…the dog is allowed on the floor but not on the couch, the cat is allowed on the couch"*

For all the participants the bed was a space that appeared to define the position of the cat within the hierarchy of the family. More than half the participants were fully inclusive of the cat sharing this space with them. The cats were often allocated a space at the bottom and on top of the bed for sleeping. This represented a small demarcation from the positioning of the owner who slept at the top and in the bed. They shared the going to bed routine with their owner that often involved a time of closeness and affection depicted by bonding behaviours such as chest sitting, or cuddling:

"…he will sit on my stomach while I'm trying to read and when I put my book down he just walks to the end of the bed and he's got a duvet on one side of the bed and he goes to sleep there …it has to be at the end of the bed

– it's a bit of a compromise really … and*...when I go to bed he comes to bed"*

The other participants would have shared their bed with their cat had it not been for their partner who objected to the cat occupying this space. The positioning of the cat away from this space clearly demonstrated that when it came to sleeping in bed, the wishes of family members were privileged over those of the cats. This reinforced the positioning of cats as after human members for these families:

"*…he's allowed on the spare bed depending on who is here* and *...I would have them in bed with me but my husband doesn't want them so every time he is away they come in bed"*

It would appear that among this sample of cat owners that their cat was regarded as a significant member of the household. The importance of this relationship is reflected in the hierarchical position assigned to the cat as being close to or amongst the position allocated to that of family members. The relationship to their cat often assumed a role similar to that of a child. Prioritization of the status of their cat within the household was revealed by the extent to which owners attempted to fit in and around demands made on them by their cat. The regulation of space in relation to where the cat could and could not go within the home also reflected the person-cat relationship within the household.

Interdependence

The final theme to be analysed was defined as interdependency. This theme highlighted the responsibilities felt by the owner as being related to the perceived dependency of the cat. In the majority of the transcripts analysed there was a priority placed on the expectation of the owner to provide for the health and well-being of their cats. This expectation provided the owner with an opportunity to exert control and influence over the needs of their cat. These needs were identified as food, comfort and grooming and they were understood to be reciprocated by companionship and pleasure. Participants who lived alone, seemed to gain satisfaction from this

interdependent relationship which represented an enhanced purpose to their lives:

" ...It's somebody else to think about besides myself...something nice to care for…I think he is good for me as just simply having to think of another living being…it's quite nice having a routine – I've got to remember to feed him"

Participants who did not live alone acknowledged that caring for a cat was also likely to be beneficial for them psychologically:

"I know they are good for me – they are not going to talk back apart from their meowing but it is going to be good stuff and *...its light hearted, it's refreshing and it kind of lifts your spirits a bit when* (the cat) *is around"*

Four participants spoke of awareness that the mutual attention and affection shared with their cats was also good for their psychological health:

"...I guess having a cat to cuddle and to be with and who's giving me attention and who I'm giving attention to is definitely part of my wellbeing"

The responsibility of meeting the needs of a dependent animal was prioritised in the analysed transcripts. Participants implied that although they found being responsible for the food and care of a cat to be a bind, they felt compensated by the attention and pleasure they received in return. This appears to reinforce the notion of the dependency-provider relationship as being reciprocal. This may also suggest that a direct link exists between the degree of dependency and an intrinsic satisfaction felt by the owner:

"*...It's quite a tie having a cat who is demanding but there are big rewards - she demands more from the relationship too* and*...it is someone who is dependent on you but you get back their attention in return"*

Intrinsic satisfaction and pleasure was also expressed by participants when they talked about being controlled by their cats. While the cats controlled the owners to some extent, the owners were in control of meeting the needs of their cats. Owners seemed to interpret the continued presence and affection of their cat as an accomplishment of their role as a caregiver:

"...I am amused when you realise that they are directing you; have my food ready for me, open the door ...they have me won over, they say cats have staff and I'm probably their staff member and ... I think they really like being part of this family because they get treated well, they are treated like royalty at times"

This feeling of responsibility that the participants felt for their cat was prioritised as a fundamental aspect of the person-cat relationship across the transcripts. One participant described this implicit expectation and commitment as a psychological contract that existed between themselves and their cat in terms of care in return for companionship:

"...You know that they are looking for that companionship and loyalty back and keeping them fed. It's sort of like a mild contract really that you have with your animal that you are going to treat them fairly and look after them"

Holidays

So, when dependency on the owner for food and care was a fundamental aspect of the person-cat relationship for participants, the issue of spending time away from home became a dilemma. One owner commented that the level of dependency created between the cat and herself negated the opportunity for holidays. Here the concern for the well-being and comfort for the cat was considered more important than the well-being that might be gained by a break for the owner. So for this cat owner it was 'cats before people':

"*...the problem is that I have made him so dependent on me so I don't go on holidays"*

Other participants made arrangements for the care of their cats by others when they went on holiday. If close friends, relatives or a house minder could not fulfil this responsibility, owners looked to catteries. One owner solved the problem of the cat needing to be looked after by paying for a top class cattery that administered a superior level of care while the family went on holiday. So, while the owner chose 'people before cats' they felt the need to compensate for their absence and pay for high quality care while they

were away. This came at a high cost and seemed to reflect the extent of the commitment that the participant felt towards the welfare of their cats:

"*… When we go on holiday they are in a very top class cattery that sometimes costs more than us if we go camping. They are individual units that are sometimes climate controlled depending on the season. In summer we have an indoor, outdoor cage so that they can have separate accommodation together, so yeah, I do give them the best"*

Other participants solved the 'going on holiday' dilemma by adjusting their expectations and planning to take shorter holidays than they might have otherwise. So it would seem that the extent of interdependency in the person-cat relationship dictated lifestyle choices for the owners:

"*...I would not go overseas for a very long time because I would miss the cats too much ...having a cat does preclude you from taking long trips* and*...you have a problem if you want to travel for long periods, you've got to have someone look after them or put them in a cattery or not have one in the first place"*

Cost

Talk related to the cost of having a cat was usually linked to visits to the vet. Although the cost involved in being responsible for a companion cat was acknowledged it was considered irrelevant for these participants. This may have reflected the socio-economic status of this sample but also the high value they placed on the health and wellbeing of their cats.

"...it can be a bit expensive if you are going to have a cat that's dependent on you ...when she is ill she's straight off to the vet and we don't consider what it costs ... it would be pretty naive if you went into pet ownership and you didn't realise that there were going to be ongoing costs"

Grooming

The majority of these participants talked about grooming their cats and for providing an appropriate diet as part of responsible behaviour in caring for them as dependent pets. Owners regularly took measures to help their cat manage everyday cat challenges related to having a fur coat or old age. Brushing was associated with purring and perceived enjoyment for the cat

and at the same time relaxation for the owner. So the effort and attention involved in the providing a good diet and the regular brushing meant that the owner developed a relationship whereby the welfare of the cat was dependent on them as owners:

"……I do give them the best, they are on a special diet, they are on hairball control … she loves being brushed … She needs brushing every second day even though she's got quite short hair and *…the long haired cat gets brushed every day. I'll go and watch TV and one or other of my cats will jump on my knee for their combing with their brush which they quite enjoy".*

The theme of interdependency that characterises many person-cat relationships is recognised as being an important component of the bond that exists between owner and cat. While the cat is dependent on the owner for comfort, food and grooming, the owner is compensated by attention, affection and inherent satisfaction. This interdependency was described as an implicit agreement based on trust and commitment that seemed to typify the nature of this relationship.

Identity

Identity was identified as an over-arching theme in this analysis. It was supported by the themes of communication, companionship, inclusiveness and interdependence and as a result, identity appeared to a fundamental component of the person-to-cat relationship. In this analysis, gendered characteristics were used by owners to highlight the physicality, temperament and appearance of their cats throughout the transcripts. These gendered characteristics tended to depict maleness in contrast to femaleness.

To begin, four male participants talked about the physical fitness of their cats. The promotion of this attribute appeared to reflect the general good health of their cats:

"…she is very fit for her age, she's very athletic– the other cats are quite athletic…it's about a metre to get his jump right… he will take off and sprint up the corridor, do some circuits of the lounge leaping over furniture and …he's in full training at the moment"

Male participants talked of interactions that involved risk taking activities with their cats. These activities were designed to engage the cat in actions that they would not naturally do and there was an element of danger involved for the cat if the owners were not in control. So these interactions featured risk taking and being in control.

"…testing out what he'll do if you put him on a bench to see how he will get down …I can throw him and swing him around to test what he will handle …I will biff him up and catch him and *…he'll sit on the dog's back, he'll sit on a horse, he loves to ride in the wheelbarrow*"

Male participants also talked about playing games of tolerance with their cats. These games involved pushing the limits of what their cat might tolerate with 'upside down tests' being talked about in three transcripts. These upside down challenges tested the physical boundaries of the tolerance for the cat when it was positioned in a vulnerable position while the owner retained control. Again, the physical nature of the activity, the pushing of boundaries and a notion of control featured in these games:

"…I will lift him up in a clearly uncomfortable position just to test his (cats) boundaries of what he can tolerate …I will hold him upside down …I play how much will you tolerate? … so he will go upside down on my knees to see how far he will let me take him down my legs so it's kind of like playing with his boundaries and then when he reaches his boundaries giving him a big cuddle, that's part of the game"

All but one male participant emphasised aggressiveness when they commented on interactive activities that involved their cats. These activities were usually centred on play fights, speed and hard-hitting movements around the house all of which involved strength and force:

"…likes rough and tumble, a bit of a fight. She will scratch and bite …he'll grab her tail or pick her up and pat her fairly roughly, she loves that…you hear him hitting things, run around under the table and bash the furniture, it's like a shot of adrenalin. If he had a mouse he would bash it around and*… he will often play fight with me and he knows how hard to bite and scratch me, he kind of knows his limits"*

An adventurous temperament was highlighted in the transcripts about male cats while caring and aloof behaviour was evident in talk about female cats. In these instances the owners appeared to ascribe masculine and feminine temperaments to describe the nature of their cats:

"…he's got his trail and sometimes he can go missing in action if you like…he thinks he is the brave defender of the house…what are you doing mate, I've got bush work to do and you're running me late – what is this? …that just summarises him, he will give anything a go, and he's a bit out there"

"…I comb her and I clip her toenails and claws from time to time, if I can brush or comb her hair out she loves that…she is a bit more distant so it is very much on her terms if she is in an affectionate mood"

The talk about the hunting instincts of their cats provided another avenue to ascribe gendered attributes. The hunting ability of the male was emphasised while that of the female cat appeared to be minimised. While, some participants spoke of the attributes of strength and power to emphasise a masculine identity, other participants used the attributes of being gentle and more passive to highlight a feminine identity:

" … (male cat) is a very good hunter and has a mega bell but he still manages to get mice and birds and the occasional lizards …(female cat) is a bit of a hunter and brings in animals which are usually still alive and if she killed something it would be by accident"

Participants also talked about the size and shape of their cats. Terms such as thin, little, skinny and overweight seemed to be associated with female cats whereas big, tall and heavy was associated with male cats. One owner described her male cats as very big and tall whereas the female was a little bit smaller and overweight:

"…she is quite a big cat but very thin…Fluffy and Spike are both males and they're very big cats and then Susie is a little female, she is a bit overweight, she's quite overweight and a much smaller frame whereas the boys are very tall …he was larger than his mother…she is not a fat cat and can tolerate

quite a bit of food…she was a skinny, scrawny little thing and *…he's quite heavy"*

Participants also talked about the appearance and nature of their cats. Beauty and feistiness were emphasised in the descriptions of the female cats whereas strength and good looks were emphasised in talk about male cats. Again, the owners highlighted gendered attributes associated with being male and female when talking about their cats.

"…oh you are a handsome boy; …she looked up into my eyes and that was it for me, she was beautiful, I think she is a beautiful looking cat, I like that about her; …he's a good looking cat, I've had people tell me he's good looking and he belies his age…she is quite strong willed within the house …people will say she is a real sweetie and *…that's part of his personality to be a survivor"*

Participants also appeared to use the relationship with their cat as a way to affirm their own individual and social identities. For example, identity formation was highlighted throughout the theme of communication. This theme enabled owners to feel close and connected to their cats when they assigned human-like attributes to them. This seemed to have the effect of making the cat seem more like them:

"*…when I'm out in the garden she'll follow me as she considers herself quite some gardener really…he gives you a cuddle and want some more so he'll stretch out his paw as if to say don't go away*"

Companionship also supported the theme of identity when the non-judgmental friendship of their cat was depended on as a form of support. The person-to-cat relationship seemed to replenish aspects of the owner's individual self that had been threatened by external influences such as the demands of others.

"*…when I come home and I'm a bit empty, I've got nothing to give and find it difficult to reconnect with my family… it's the first thing I do, I reconnect with my cats as they are just there and they are just happy to see me they don't care"*

Inclusiveness supported individual identity when the role of the cat was often portrayed as that of a child. This indirectly located the owner in the role of a carer or specifically in the role of a mother as it did for one participant. With this role a trusting and caring identity might be assumed.

"…*I'm like their mum yeah, so they are pretty much like my children*"

Finally interdependence also supported identity when participants spoke of looking after a cat gave them pleasure. This seemed to imply that the responsibility involved in this role contributed to a positive emotional response.

"…*it's quite nice having a routine like having to remember to feed them and simply having to think of another living being as well. I mean that can be quite enjoyable"*

Self- censorship

Another aspect of identity highlighted in the transcripts was that of the owners' social identity which categorised them as cat owners. This social identification suggested that some cat owners were perceived to be distinctively different. For these participants, a 'cat person' represented a derogatory label assigned to owners who professed to have a deep emotional connection with their cats. This label appeared to pose a risk of social disapproval. Some owners talked about protecting their social identity by moderating their behaviour with their cats in public. In many cases the person-cat relationship was a significant part of their lives but they felt compelled to dismiss any notion that might lead them to be labelled a 'cat person':

"…you can tell by their talk that they are full on cat people – I don't want to be seen that way"

Some participants commented on how they censored what they allowed others to know about their interaction with their cat. Others were careful to moderate what other people heard or saw them do with their cat in case they were perceived as odd or eccentric:

"...I will call him the 'little monkey', it's quite an intimate, quite a personal thing to do so I normally moderate that when other people are around ...I talk to him quietly as I don't want the neighbours to think I am nutty"

Otherwise participants were accepting of the fact that they might be judged as a 'cat person' but were self- deprecating:

"...I am a little bit crazy about cats and I have cat socks ...I think we are a bit stupid...I've always been a cat person and I might sound really over the top but that's the truth!"

The self-deprecation expressed by some cat owners when they discussed their interactions with their cats suggested that the person-cat relationship occupied an uncomfortable space in the broader society. Many participants expressed awareness that the nature of their interaction with their cat might identify them as a 'cat person' which they viewed as atypical. What was regarded as a strong, loving bond and very central to the lives of owners could be perceived as a peculiar attachment by others. So while these owners could be completely spontaneous with their cats in private there was evidence that they were careful to suppress what they allowed people to know in public.

An analysis of the transcripts generated by these participants revealed that gendered characteristics were attributed to their cats. Masculine attributes included characteristics such as being active, strong, and healthy whereas feminine attributes included characteristics such as being attractive, gentle and emotional. So owners constructed identities for their cats in human terms of what it means to be male or female. The act of assigning these gendered characteristics to their cats seemed to affirm the beliefs of the owners of what it means to identify as either male or female. Due to an awareness of the negative perception often given to the label of a 'cat person' some participants took steps to manage this identity in relation to themselves. So, the affirmation and protection of individual and social identity can be shown to be evident throughout the themes identified as being an important part of the relationship that exists between owners and their cats.

To conclude, the results of this thematic analysis that focused on the nature of the person-cat relationship highlighted a number of themes that seemed to underpin the connection. An examination across the data revealed that the person-cat relationship can represent a strong, inter-dependent bond and be a significant aspect of the everyday lives of owners. The themes that typified this bond were identified as being: (a) communication "I talk to my cat regularly", (b) companionship "A good companion", (c) inclusiveness "One of the family", (d) interdependence "Someone who is dependent on you" and (e) identity "He is handsome, she is beautiful".

Discussion

This study provides insights into the nature of the person-cat relationship. These insights are based on the themes of communication, companionship, inclusiveness and interdependence with the overarching theme of identity. Findings add to the research in this area.

Communication was found to be fundamental to the relationship between an owner and their cat. This relationship was nurtured through different modes of communication including conversation, rituals, passive and interactive activities. The theme of communication also featured the use of human-like qualities to interpret the perceived feelings and actions of the cats. The most surprising aspect of this feature was the extent to which owners ascribed human characteristics to their cats. The humanising of the cats had the effect of not only contributing to a close tie between owners and their cats but also the merging of their mutual status. For instance, participants placed their cats at the same level as themselves when they spoke of them as they would to a human and asked them what they had been doing during the day. It was also interesting to note that when owners humanised their cats they spoke of stroking them at the same time. This emphasised the close connection that anthropomorphic attributions seemed to foster. Recent research by Ryan and Ziebland, (2015); Paul, Moore, Mc Ainsh, Symonds, Mc Cune and Bradshaw (2014) confirmed this finding when they reported that owners are motivated to view their cat in human-like terms in order to increase a feeling of social connectedness. In this study participants reflected this connectedness when they perceived what their cats were communicating

with them. They understood that the meow was usually associated to a demand for food or attention while the purr was linked to feelings of affection and contentment. Merola, Lazzaroni and Marshall-Pescini (2015) found vocal communication directed at individuals helped to develop a bond between the cat and their owner while Paul et al. (2011) found that owners gained pleasure by ascribing these human-like attributions to their cats' talk. Based on these findings it was not surprising that this type of communication between the participants and their cats reinforced the reported feeling of a close connection and attachment. This was evidenced by the owners' perceived understanding of the moods and demands of their cats. The current research demonstrated that communication that was often anthropomorphic in nature was an important feature of the person-to-cat relationship.

Companionship was another major theme identified in the relationship between and owner and their cat. The companionship shared with their cats was described as offering a sense of comfort and a "life-giving force" that could "boost your mood." The cats in this study were found to be not merely friends but had the potential to be regarded as confidantes. The present research highlighted how a feeling of closeness gained in shared activities such as a physical presence, relaxation, play, attention and affection was associated with calmness, enjoyment and a sense of satisfaction for the owners. Previous research confirmed these findings and emphasised that companionship was the most commonly cited reason for having a pet (Boldt & Dellmann-Jenkins, 1992). Participants spoke of a mutual rapport that they shared with their cats such as an emotional bond or attachment. Ryan and Ziebland (2015) found that pets had the capacity to provide owners with unwavering support. The depth of feeling that participants linked to the relationship in the present research was unexpected although this aspect of pet ownership has been well studied (Chur-Hansen et al., 2010; Lewis, Krageloh & Shepherd, 2009; Krause-Parello, 2012; Zilcha-Mano, Mikulincer & Shaver, 2012). The notion of pets being able to offer a source of social support has also been well documented (Sable, 2012; Winefield et al., 2008; Antonacopoulos et al., 2010; Wells, 2009). For instance,

participants in the present study spoke of their cats being able to replenish their emotional resilience by offering a perceived non-judgemental and soothing response to them. This seemed to acknowledge the reciprocal nature of the owner-to-cat bond when the cat is able to fulfil a unique psychological role in the relationship and further emphasise the strong connection that can exist between an owner and their cat. Participants sometimes positioned their cats above family and friends if they sought their company and they used them like a confidante when they felt emotionally depleted and needed comfort. This seems to reinforce how cats, unlike humans, were perceived as completely non-judgemental and undemanding, always available and therefore able to offer unique help. McConnell et al. (2011) confirmed this finding when it was reported that 25 percent of more than 1000 polled pet owners regarded their pet as a confidante. So it would seem that companionship is also pivotal to the person-cat relationship.

In addition to communication and companionship, the theme of inclusiveness was identified as being an important feature of the relationship between an owner and their cat. There was also evidence in the data that cats were integrated into the daily routines of the participants' lives. For instance, household chores such as bed making were sometimes fitted around the demands of their cat. In the present study, the status between the human and non-human seemed to have become more equal when cats were assimilated into everyday life. This finding has also been supported in previous research (Hodgson et al., 2015; & Ryan & Ziebland, 2015). Each participant considered their cat to be one of the family and most often to have an equivalent role to a child. With the status of a child, the cat was regarded as a valued member of the household. McNicholas et al. (2005) found that 90 percent of pet owners placed a high value on their pet as a family member**.** In the present study this inclusion in everyday life reflected an acknowledgement of their position within the household and it also provided a source of enjoyment for the owners.

The regulation of space available to the cat within the home also seemed to reflect the extent to which the cat was included in the everyday activities of the household. The bed in particular represented a space that reflected the

position of the cat within the family hierarchy and typically, the participants tended to share their bed with their cat when possible. McConnell et al. (2011) found that 30 percent of a poll of over 1000 pet owners reported that their pet slept in their bed with them. Sometimes, however, cats wanted to occupy spaces such as the kitchen bench or the table. They were often prevented from doing this when human needs were privileged over those of non-human. In some instances the participants appeared conflicted when the needs or wants of their cat threatened other aspects of their self-image such as that of being a "hygienic person".

The extent to which companion cats were clearly valued as a family member and treated inclusively as one seemed to reinforce the strength of the emotional tie between the participants and their cats in this study. So it would seem that inclusiveness would be another important factor apparent in the person-cat relationship.

Interdependence was also identified as being important in the relationship between an owner and their cat. This theme of interdependency was used to describe the reciprocal nature of the owner-cat relationship where the owner and the cat contributed complementary aspects to the relationship. The cat was dependent on the owner for food and care while the owner could gain physical contact, unconditional acceptance and companionship from the cat. This joint fulfilment of needs for the owner and the cat was described by one participant as a 'mild contract' and Wells (2009) as a "mutual commitment". Specifically, the cat owners in this study all reported a feeling of responsibility and obligation to provide for their cat's needs. Research has shown that cats were more likely to develop an affectionate bond with the people who fed and cared for them (Bolt & Dellmann-Jenkins, 1992). So this active caregiver role undertaken by the owners in this present study may help to explain the close bond that existed between them and their cats. This finding is important in light of the use of animals in therapy where no caregiver role or close relationship is established. If a close relationship is important for therapeutic benefits to be realised, it may help to explain the anomalous results of the studies in these fields.

Participants placed a high value on the health and wellbeing of their cats so the issue of cost was regarded by this group as part of the commitment and of being a responsible owner. It could be argued that this particular group were in a privileged position to be able to afford to attend to the health and care of their cat and to then consider it an individual responsibility. In contrast, studies have shown that the ongoing expense for some cat owners can represent a negative aspect of the relationship (Chur-Hansen, 2008; Faver & Cavazos, 2008). This poses the question as to whether the higher socio-economic status of the owners in the present study accounted for their attitude towards cost and care, together with the high level of engagement they had with their cats. As a result, cost was equated to taking the responsibility of looking after a cat seriously and typified this aspect of person-to-cat relationships for this group of participants.

The feeling of responsibility that owners felt towards their cats caused an ethical dilemma when they wanted to go on holiday. Either they retained their positioning as principled cat owners and tended to stay at home or if they did go on holiday, they paid for an expensive cattery to compensate in some way for their absence. Participants inferred that part of the commitment they felt towards their cat was that their cat was well cared for at all times. So it appeared that their self-image as a responsible cat owner remained intact when their ability to act in a responsible manner may have been enabled by their higher socio-economic status. Again, socio-economic status may be indirectly be attributed to the sense of self-esteem for this group of participants when they were able to feel like a responsible owner and ensure the utmost care for their cats at all times.

Another aspect of interdependency highlighted in the transcripts related to a sense of meaning that meeting the needs of a dependent animal provided. Specifically, owners who lived alone reported that having something to care for provided an enhanced purpose and was an important aspect of their daily lives. So, the interdependence reflected in the nature of the relationship between this group of participants and their cats was also highlighted as being important.

Identity was identified as an overarching theme. For the purpose of this research individual identity was defined as a self-concept of who one is while social identity was defined as membership of a group (Ehrlich and Gramzow, 2015). In this research the formation, maintenance and protection of identity was supported by the themes of communication, companionship, inclusiveness and interdependence. It appeared that the person-to-cat relationship offered the capacity for owners to affirm their individual identities. The extent to which the affirmation of identity was found to be a central component of the relationship between an owner and their cat was unexpected. This relationship appeared to facilitate the development and preservation of the individual and social identities of the owners that could be argued to ultimately enhance well-being. Four examples of how the notion of identity was supported by the themes identified in the transcripts were as follows:

First, the study contained a large number of references to masculine and feminine attributes used by participants when they described their cats. This appeared to reinforce the affirmation of the distinction of male and female identities as an important aspect of the person-to-cat relationship. Typical attributes that were identified in the transcripts and associated with a masculine gender included being adventurous, powerful and strong. These attributes were assigned to male cats while feminine attributes such as passive, gentle and soft were assigned to the female cats. As a result, masculine and feminine attributes were also used to emphasis the physicality, temperament and appearance of their cats. Hogg, Terry and White (1995) demonstrated that the projection of these gendered attributes tended to reflect individual beliefs. Furthermore, Trigg, Thompson & Bennett (2016) maintained that people project characteristics that mark their own physicality, personality, and temperament on to others as a way to reaffirm their identity. The levelling of status between cats and owners is reported to have the potential to enhance identity (Greenaway et al, 2015). This affirmation of identity contributes to positive effect on health and wellbeing.

Second, identity was also maintained by companionship. The close owner-to-cat emotional bond was able to provide a source of friendship, reassurance and comfort when participants felt disconnected. The interactions with their cats enabled participants to feel good again and reaffirmed their identity as socially connected people.

Third, the reinforcement of identity was also evident when the cat was regarded equivalent to the status of a dependent child. This positioned the owner as a caregiver with the inherent trustworthiness, reliability and loyalty required for this role. Therefore, when the cat is depicted as a child, the caring identity of the owner is confirmed.

Finally, the affirmation of identity was also supported within the theme of interdependence. When participants spoke of taking responsibility for the care of their cat very seriously, this affirmed them as very responsible owners. Furthermore, the continued presence and affection of their cat was an indication to owners that they had accomplished this task well and affirmed their identity as being adept and successful at this role.

So the person-to-cat relationship was shown in the present research to offer the capacity for owners to reinforce their individual identities. Responsible cat ownership reflected an identity as connected, caring, trustworthy and capable. The inherent self-worth associated with looking after a dependent cat also confirmed a cat-owner identity that may have accounted for the fact that these respondents were all happy to talk about their cats.

An unexpected finding was that of the clash of identities that could occur in relation to cat ownership. Interestingly, in the present research, individual identity was shown to be supported by cat ownership, while social identity was shown to be threatened by cat ownership. For, just as a strong, emotional connection with a companion cat seemed to boost individual identity and a sense of belonging, this same experience could be perceived as odd in the public arena. For example, when their cats wanted to occupy spaces such as the kitchen bench, this behaviour appeared to threaten other aspects of individual identity such as that of a ‘hygienic person’. Trigg et al. (2016) referred to this as an “identity conflict”. This occurred when the

norms and behaviours that related to pet ownership and were common to individual and social identities actually opposed each other. So, in one instance the participants spoke enthusiastically about their cat relationship but then in another, moderated certain aspects so as not to be categorised as eccentric.

The social identity that people that owned cats wished to avoid was categorised as 'crazy cat people'. Members of this group are categorised as unsociable, owning many cats and somewhat eccentric. This may help to explain why participants in this study were found to self-censor what they allowed others to know about the nature of their interactions with their cats. Alternatively they were self-deprecating if they felt that they might be subject to negative appraisal by others. This self-censorship and self-deprecation of what was clearly a significant aspect of their lives highlighted the uncertain positioning of close person-to-pet relationships in broader society (Ryan & Ziebland, 2015). So, it is not surprising that the participants in this study actively disassociated themselves from the identity attached to the 'crazy cat people' group. They did, however, affiliate with a new social identity that they called 'not a cat person'. This social identity meant that their relationship with their cat would qualify for social approval and protect both their individual and social identities.

Another identity conflict occurred based on the close relationship experienced between owners and their cats. Mc Connell et al. (2011) found no evidence that person-to-pet relationships replaced human relationships. Instead, owners reported closeness to pets when at the same time they also reported closeness to friends and family. One participant spoke of spending more time interacting with other family members now that they had a cat. In this way, the relationship owners experienced with their cats may have served a functional purpose in complementing human relationships. As a result, in this instant, the person-to-cat relationship had the potential to reinforce family cohesion and enhance family identity. So the closeness participants reported experiencing with their cats was not found to be at the expense of human relationships but enhanced a particular social identity.

This highlighted how the behaviours that supported connectedness and potentially made the owners feel happy could simultaneously undermine how the owners were perceived socially and potentially make them feel unhappy. With this in mind, some of the close owner-to-cat relationships depicted in the study tended to have a private face that differed from the carefully managed public face. This appeared to be driven by a need felt by the owners to protect their individual identity. So, individual and social identities were strongly linked to the nature of the relationship between an owner and their cat. Few, if any studies have explored this facet of the owner-to-pet relationship and yet the affirmation of identity was identified as a prominent theme in the present research.

Wellbeing

For the purpose of this discussion, 'well-being' is defined as the state of being happy, healthy, feeling secure and experiencing overall satisfaction with life. Furthermore, well-being is associated with positive relationships, social connectedness, self-esteem and a feeling of autonomy. Anything that strengthens individual resilience may also ultimately improve wellbeing (Greenaway, Cruwys, Haslam & Jetten, 2015).

According to Williams (2009) individuals are motivated to fulfil basic psychological needs that can have a positive effect on psychological health and wellbeing. These needs include an enhanced feeling of belonging (Cameron, 1999), a greater feeling of control (Greenaway et al., 2015), an increased sense of meaning to life (Ysseldyk, Matheson and Anismann, 2010) and a greater sense of self-esteem (Jettem, Branscombe, Haslam, Haslam, Cruwys, Jones, Cui, Dingle, Liu, Murphy, Walter & Zang, 2014). The present study has shown how the dynamic relationship experienced between these owners and their cats could provide an opportunity to satisfy these needs that are linked to health and wellbeing. Five psychological needs were identified across the data set as follows:

First, a need to belong was highlighted when cats were perceived as one of the family and were placed at nearly the same level as family members. The anthropomorphising of cats and the perceived unconditional acceptance of

their companionship was also linked to social connectedness and a feeling of belonging (Mc Connell et al., 2011).

Second, a need to feel in control was evidenced in the data when owners undertook the role to look after their cats and provide food and care for them. Accomplishment of this responsibility was reinforced for some participants when the cat was perceived to like being part of the family, stayed around and purred in contentment.

Third, a need to have meaning in life was emphasised when participants spoke of enjoying having something to care for and 'someone' else to think about other than themselves. This was considered to be a responsibility that they took seriously and for this reason it may well have made their lives feel more worthwhile.

Lastly, a need for self-esteem that made participants feel good was also evidenced in the transcripts. This occurred when participants described the relationship with their cat as being like an emotional bond that provided them with a source of comfort and reassurance when they were emotionally exhausted. Therefore, the companionship that owners shared with their cats contributed to enjoyment in their lives.

The meeting of these needs may contribute to a feeling of overall satisfaction with life, health and wellbeing. At the same time, self-worth can be enhanced and this can strengthen identity all of which serve to protect and increase a sense of wellbeing (Greenaway et al., 2015). The link between these particular aspects of cat ownership and wellbeing should be the focus of ongoing research to clarify the health enhancing aspects of cat ownership.

Limitations and Future Research

The participants in the present research were a small group (N=10) of devoted cat owners so the findings may not apply to other types of ownership or to less well-off people. The findings are focused on the extent to which the nature of cat ownership might enhance health and wellbeing of the owners. As with all research there are limitations that could be addressed in future studies.

The first limitation related to communication between the owners and their cats. Given the importance of communication in underpinning the person-to-cat relationship, the current study fails to indicate how much interaction is required between an owner and their cat in order to achieve the sought after effect of a close emotional bond. The contact reported between owners and their cats ranged from daily contact to less regular weekend contact. It is through communication that a need to be socially connected could be satisfied and lead individuals to feel happier and healthier (Ryan & Ziebland, 2015). Future studies should investigate how much, how often and what type of interaction is likely to lead to the close human-to-cat relationship described by the participants.

The second limitation was directly linked to the older cohort of participants as they may have begun to have fewer social interactions due to retirement or children leaving home. For this reason they may have tended to look to their cats as a replacement for companionship and regarded this aspect of the relationship more importantly than another population might. Companionship is linked to enhanced self-esteem and this can also have a positive effect on health (Williams, 2009). Future research needs to be conducted across a younger cohort to examine the reliability of this finding across the population.

Third, the companion cat may have represented a replacement child to supplement the family structure when children were becoming more independent or had left home for this older cohort. This may account for the way that the majority of the analysed texts reported that the cat assumed the role of a child. When cats were considered to have a similar role to that of a child, then the owners assumed the autonomous role of a caregiver and an opportunity to do this well. This perception of being in control and competent is also purported to be important to psychological health and wellbeing (Greenaway et al., 2015). In future, the same research could be conducted on a different cohort to examine whether the child status given to the cat is limited to an older cohort or across populations and therefore increase the validity of the present finding.

The fourth limitation was due to the homogeneity of the group of the participants. The participants were all reasonably well-off and more able to afford quality care for their cats without it being a drain on financial resources. For instance, participants spoke of how cost was irrelevant when the health and care of their cats was considered. In contrast, others outside of the present study may experience difficulties when faced with costs such as veterinary services. Being able to honour a commitment to their cats to the extent that they were able to look after their cats really well may have contributed to a greater sense purpose and self-worth for this group of participants. Both of these psychological needs are believed to enhance a sense of wellbeing (Greenaway et al., 2015). Future studies might examine whether socio-economic status has a direct effect on the strength of the commitment that can develop between an owner and their cat. As a result, findings could determine whether socio-economic differences can influence the nature of the relationship between owners and their cats.

Finally, most participants were aware of the possibility of being considered a 'cat person'. The data suggested that this might be a familiar concern among people that own cats. That being said, the participants in this group were particularly engaged with their cats and perhaps more likely to behave in a way that might be considered "over the top" as described by one participant. Self-deprecation represented one strategy evidenced in the data that protected self-esteem and identity, both of which are important facets of well-being (Williams, 2009). Future studies need to consider whether the protection of identity is a consideration for participants who have different relationships with their cats. These relationships could include those who just feed their cats or just keep them for hunting mice or as outside cats in relation to being regarded as a 'cat person'.

To conclude**,** the main overall limitation of the research was due to this particular group of participants who were intimately engaged with their cats. It may be that the intensity of a person-to-cat relationship is fundamental to determining whether or not aspects of health and wellbeing are evoked. Future studies, therefore, need to sample other populations with different

person-to-cat relationships to verify whether or not you have to really love your cat to gain these same health benefits.

Implications

One important finding in this study may offer some insight into why studies on the relationship of pet ownership and health have been largely inconclusive. That is, it would appear that it may not be good enough to just own a cat or have a cat around but instead owners may have to really love their cats if they are to derive any health benefits. The participants in this study all experienced a strong, interdependent relationship with their cat characterised by devotion and affection. This relationship was shown to have the capacity to support basic psychological needs that directly linked to a sense of well-being. This poses the question as to whether health benefits would be gained to the same degree, if at all, without such a dynamic relationship and mutual bond between an owner and their cat.

Another implication related to a lack of a close relationship is related to pet assisted therapies and activities offered in the broader community. These may have a limited effect when no emotional bond has been established with the pet. Since clients are not involved in the regular care-taking of the pets and have not developed a close bond with them, they might be unlikely to accrue any health benefits. This calls into question whether animal assisted activities that amount to little more than a walk through or brief encounter could be beneficial. Any observed increase in responsiveness to activities involving pets may be due to other factors such as a break in routine rather than being attributed to the involvement of the animal.

In summary, the central question addressed in the current research is focused on what constitutes the nature of the relationship between an owner and their cat that might benefit health. This research highlights the formation, maintenance and protection of identity as being pivotal in this relationship. Identity was found to be shaped through communication, companionship, inclusiveness and interdependence all of which were components of the person-to-cat relationship. Identity related to the person-to-cat relationship has also been found to have the potential to influence

health and wellbeing but before any cat effect is experienced an owner may well have to really love their cat.

References

Alhojailan, M. I. (2012). Thematic analysis: a critical review of its process and evaluation. *West End Journal of Social Sciences, 1*(1), 39-47.

Albert, A., & Bulcroft, K. (1988). Pets, families and the life course. *Journal of Marriage and the Family, 50*, 534-552.

Allen, K., Blascovich, J., & Mendes, W. B. (2002). Cardiovascular reactivity and the presence of pets, friends and spouses: the truth about cats and dogs. *Psychosomatic Medicine, 64*(5), 727-739.

Allen, P. A., Shykoff, J. L., & Izzo, J. L. (2001). Pet ownership, but not ACE inhibitor therapy, blunts home blood pressure responses to mental stress. *Hypertension, 38,* 815-820.

Allen, K. (2003). Are pets a healthy pleasure? The influence of pets on blood pressure. *Current Directions in Psychological Science*, *12*(6) 236-239.

Anderson, W. P., Reid, C. M., & Jennings, G. L. (1992). Pet ownership and risk factors for cardiovascular disease. *The Medical Journal of Australia, 157*(5), 289-301.

Antonacopoulos, N. M. D., & Pychyl, T. A. (2010). An examination of the potential role of pet ownership, human social support and pet attachment in the psychological health of individuals living alone. *Anthrozoos, 23*(1), 37-54. doi: 10.2752/175303710X12627079939143

Barker, S. B., & Wolen, A. R. (2008). The benefits of human-companion animal interaction: A review. *Journal of Veterinary Medical Education, 35*(4), 487-495.

Baun, M. M., Bergstrom, N., Langston, N. F., & Thoma, L. (1984). Physiological effects of human/companion animal bonding. *Nursing Research, 33*(3), 162-170.

Beck, A., & Meyers, M. (1996). Health enhancement and companion animal bonding. *Annual Review Public Health, 17,* 247-257.

Bennett, P. C., Trigg, J, L., & Brown, C. (2015). An experience sampling approach to investigating associations between pet presence and indicators of psychological wellbeing and mood in older Australians. *Anthroszoos, 28*(3), 403-420. doi: 10.1080/08927936.2015.1052266

Bernstein, P. L. (2005). The human-cat relationship. In Rochlitz, I. (Ed.) *The welfare of cats*. Dordrecht, The Netherlands: Springer. pp. 47-89.

Boldt, M. A., & Dellmann-Jenkins, M. (1992). The impact of companion animals in later life and considerations for practice. *The Journal of Applied Gerontology, 11*(2), 228-239.

Bourdieu, P. (1986). The forms of capital. In J. Richardson (Ed.)*, Handbook of theory and research for the sociology of education*. NY: Greenwood.

Buckner, J. (1988). The development of an instrument to measure neighbourhood cohesion. *American Journal of Community Psychology, 16*(6), 771-791.

Braun, V., & Clark, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. doi: 10.1191/1478088706qp063oa

Cameron, J. E. (1999). Social identity and the pursuit of possible selves: Implications for the psychological well-being of university students. *Group Dynamics: Theory, Research, and Practice, 3*, 179. doi.org/10.1037/10892699.3.3.179

Chur-Hansen, A., Winefield, H., & Beckwith, M. (2008). Reasons given by elderly men and women for not owning a pet and implications for clinical practice and research. *Journal of Health Psychology, 13*(8), 988-995. doi: 1.1177/1359105308097961

Chur-Hansen, A., Stern, C., & Winefield, H. (2010). Gaps in evidence about companion animals and human health: some suggestions for progress. *International Journal of Evidence-Based Healthcare, 8,* 140-146. doi: 10.1111/j.1744-1609.2010.00176.x

Cox, R. P. (1993). The human/animal bond as a correlate of family functioning. *Clinical Nursing Research, 2*(2), 224-231. doi: 10.1177/10547389300200210

Ehrlich, G. A., & Gramzow, R. H. (2015). The politics of affirmation theory: When group-affirmation leads to greater ingroup bias. *Personality and Social Psychology Bulletin, 41*(8), 110-1122. doi: 10.1177/0146167215590986

Enmarker, I., Helizen, O., Ekker, K., & Berg, A. (2012). Health in older cat and dog owners: The Nord-Trondelag health study (HUNT)-3 study. *Scandinavian Journal of Public Health, 40*, 718-724. doi: 10.1177/1403494812465031

Ezzy, D. (2013). *Qualitative analysis. Practice and innovation*. London, United Kingdom: Routledge.

Farnworth, M., Nicholson, G. D., & Keown, N. (2010). The legal status of cats in New Zealand: A perspective on the welfare of companion, stray and feral domestic cats (Felis catus). *Journal of Applied Animal Welfare Science, 13*, 180-188. doi: 10.1080/10888700903584846

Farnworth, M., (2013). The welfare of cats. Advance - *Research with Impact*. Downloaded on February 5, 2016 from Unitec Institute of Technology. www.unitec.ac.nz/advance/index.php/welfare-of-cats

Faver, C. A., & Alonzo, A. M. (2008). Love, safety, and companionship: The human-animal bond and Latino families. *Journal of Family Work, 11*(3), 254-271. doi: 10.1080/10522150802292350

Friedmann, E., Katcher, A. H., Lynch, J. J., & Thomas, S. A. (1980). Animal companions and one-year survival of patients after discharge from a coronary care unit. *Public Health Reports, 95*(4), 307-312.

Friedmann, E., Katcher, A. H., Lynch, J. J., & Messent, P. R. (1983).Social interaction and blood pressure: influence of animal companions. *Journal of Mental Disorders, 171*, 146-165.

Friedmann, E., & Thomas, S. A. (1995). Pet ownership, social support, and one-year survival after acute myocardial infarction in the Cardiac Arrhythmia Suppression Trial (CAST). *The American Journal of Cardiology 76,* 1213-1217.

Friedmann, E., Thomas, S. A., Stein, P. K., & Kleiger R. E. (2003). Relation between pet ownership and heart rate variability in patients with healed myocardial infarcts. *The American Journal of Cardiology, 91*, 718-721.

Friedmann, E., Thomas, S. A., Son, H., Chapa, D., & McCune, S. (2013). Pet's presence and owner's blood pressures during the daily lives of pet owners with pre -to mild hypertension. *Anthrozoos, 26*(4), 535-550. doi: 10.2752/175303713X1395775536138

Frith, H., & Gleeson, K. (2004). Clothing and embodiment: Men managing body image and appearance. *Psychology of Men and Masculinity, 5*(1), 40-48. doi: 10.1037/1524-9220

Gergen, K. (1985). The social constructionist movement in modern psychology. *American Psychologist, 40*(3), 266-275

Graham T. M., & Glover, T. D. (2014). On the fence: Dog parks in the unleashing of community and social capital. *Leisure Sciences: An Interdisciplinary Journal*, *36*(3), 217-234. doi: 10.1080/01490400

Greenaway, K. H., Cruwys, T., Haslam, A., & Jetten, J. (2016). Social identities promote well-being because they satisfy global psychological needs. *European Journal of Social Psychology 46,* 294-307.

Gulick, E. E., & Krause-Parello, C. A. (2012). Factors related to type of companion pet owned by older women. *Journal of Psychosocial Nursing and Mental Health Services, 50*(11), 30-37. doi: 10.3928/02793695-21121003-01

Gunaseelan, S., Coleman, G. L., & Toukhsati, S. R. (2013). Attitudes towards responsible pet ownership behaviours in Singaporean cat owners. *Anthrozoos, 26*(2), 128-211.

Heady, B. (1998). Health benefits and health cost savings due to pets: Preliminary estimates from an Australian National Survey. *Social Indicators Research, 47*(2), 233-243. doi: 10.1023/A:1006892908532

Herzog, H. (2011). The impact of pets on human health and psychological well-being: Fact or fiction, or hypothesis? *Current Directions in Psychological Science, 20*(4), 236-239. doi: 10.1177/0963721411415220

Heuberger, R. & Wakshlag, J. (2011). Characteristics of ageing pets and their owners: dogs v. cats. *British Journal of Nutrition, 106*, 150-153. doi: 10.1017/S0007114511003321

Hodgson, K., Barton, L., Darling, M., Antao, V., Kim, F. A., & Monavvari, A. (2015). Pets' impact on your patients' health: Leveraging benefits and mitigating risk. *The Journal of the American Board of Family Medicine, 28*(4), 526-534. doi: 10.3122/jabfm.2015.04.140254

Hogg, M. A., Terry, D.J., & White, K. M. (1995). A tale of two theories: A critical comparison of identity theory with social identity theory. *Social Psychology Quarterly, 58*(4), 255-269.

Hosey, G., & Melfi, V. (2014). Human-animal interactions, relationships and bonds: a review of the literature. *International Journal of Comparative Psychology, 27*(1), 117-142.

Krause-Parello, C. A. (2012). Pet ownership and older women: The relationship among loneliness, pet attachment support, human social support, and depressed mood. *Geriatric Nursing, 33*(3), 194-203. doi: 10.1016/j.gerinurse.2011.12.005

Jetten, J., Haslam, C., Haslam, S. A., Dingle, G., & Jones, J. (2014). How groups affect our health and well-being: The path from theory to policy. *Social Issues and Policy Review, 8,* 103-130. doi.org/10.111/sipr.12003

Lem, M., Coe, J. B., Haley, D. B., Stone, E., & O'Grady, W. (2013). Effects of companion animal ownership among Canadian street-involved youth: A qualitative analysis. *Journal of Social Welfare*, *11*(4), 285-304.

Lewis, A., Krageloh, C. U., & Shepherd, D. (2009). Pet ownership, attachment and health-related quality of life in New Zealand. *Electronic Journal of Applied Psychology: General Articles, 5*(1), 96-101.

Lomas, J. (1998). Social capital and health: Implications for public health and epidemiology. Social *Science Medicine, 47*(9), 1181-1998.

Merola, I., Lazzaroni, M., Marshall-Pescini, E., & Prato-Previde, E. (2015). Social referencing and cat-human communication. *Animal Cognition, 18*(3), 639-648. doi: 10.1007/s10071-014-0832-2

Mc Connell, A. R., Brown, C. M., Shoda, T. M., Stayton, L. E., & Martin, C. E. (2011). Friends with benefits: On positive consequences of pet ownership. *Journal of Personality and Social Psychology, 101*(6), 1239-1252. doi: 10.1037/a0024506

Mc Nicholas, J., Gilbey, A., Rennie, A., Ahmedzai, S., Dono, J., & Ormerod, E. (2005). Pet ownership and human health: A brief review of evidence and issues. *British Medical Journal, 331*, 1252-1254. doi: 10.1136/bmj.331.7527.1252

Miles, M. B. & Huberman, A. M. (1994). *Realism and the role of the researcher in qualitative psychology*. NY: St Martin's Press.

Nagengast, S. L., Baun, M. M., Megel, M., & Leibowitz, J. M. (1999). The effects of the presence of a companion animal on physiological arousal and behavioural distress in children during a physical examination. *Journal of Pediatric Nursing, 12,* 323-330.

New Zealand Companion Animal Council Survey, 2011. *Companion Animals in NZ.* Downloaded on February 16, 2016 from The NZ Companion Council Incorporated.

Parker, G. B., Gayed, A., Owen, C. A., Hyett, M. P., Hilton, T. M., & Heruc G. A. (2010). Survival following an acute coronary syndrome: a pet theory put to the test. *Acta Psychiatrica Scandinvica, 121,* 65-70.

Paul, E. S., Moore, A., McAinsh, P., Symonds, E. Mc cure, S., Bradshaw, J. W. S. (2014). Sociality motivation and anthropomorphic thinking about pets. *Anthrozoos, 27*(4), 499-512.

Peacock, J., Chur-Hansen, A., & Winefield, H. (2012). Mental health implications of human attachment to companion animals. *Journal of Clinical Psychology, 68*(3), 292-303. doi: 10.1002/jclp.20866

Potter, J., & Wetherall, M. (1987). *Discourse and social psychology: Beyond attitudes and behaviour*. London, United Kingdom: Sage Publications Ltd.

Ryan, S., & Ziebland, S. (2015). On interviewing people with pets: reflections from qualitative research on people with long-term conditions. *Sociology of Health and Illness, 37*(1), 67-80. doi: 10.1111/1467-9566.12176

Pyett, P. M., (2003). Validation of Qualitative Research in the "Real World". *Qualitative Health Research, 13*(8), 1170-1179.

Rijken, M., & van Beek, S. (2011). About cats and dogs. Reconsidering the relationship between pet ownership and health related outcomes in community-dwelling elderly. *Social Indicators Research, 102*, 373-388.

Sable, P. (2012). The pet connection: An attachment perspective. *Clinical Social Work Journal, 41*(1), 93-99. doi: 10.1007/s10615-012-0405-2

Seigel, J. M. (1990). Companion animals in sickness and in health. *Journal of Social Issues, 49*(1), 157-167. doi: 10.1111/j.1540-4560.1993.tb00915x

Serpell, J. (1991). Beneficial effects of pet ownership on some aspects of human behaviour. *Journal of the Royal Society of Medicine, 84*(12), 717-720. doi: 10.1177/014107689108401209

Somerville, J. W., Kruglikova, Y. A., Robertson, R. L., Hanson, L. M., & Maclin, O. H. (2008). Physiological responses by college students to a dog and a cat: Implications for pet therapy. *North American Journal of Psychology, 10*(3), 519-528.

Staats, S., Sears, K., & Pierfelice L. (2006). Teachers' pets and why they have them: an investigation of the human animal bond. *Journal of Applied Social Psychology, 36*(8), 1881-1891.

Staats, S., Wallace, H. & Anderson, T. (2007). Reasons for companion animal guardianship (Pet ownership) from two populations. *Society and Animals, 16,* 279-291.

Staede, C. M. & Gates, P. G. (1993). Psychological health in a population of Australian cat owners. *Anthrozoos, 6*(1), 30-42. doi: 10.2752108927939378700 2385

The New Zealand Psychological Society. (2002). *Code of Ethics for Psychologists Working in Aotearoa/New Zealand.* Wellington, NZ: Author.

Thorpe Jr., R., J., Kreisle, R., A., Glickman, E., M., Simonsick, E., M., Newman, A., B., & Kritchevsky, S. (2006). Physical activity and pet ownership in year 3 of the Health ABC study. *Journal of Aging and Physical Activity, 14*, 154-168.

Trigg, J., Thompson, K., Smith, B., & Bennett, P. (2016). An animal just like me: The importance of preserving the identities of companion-animal owners in disaster contexts. *Social and Personality Psychology Compass, 10*(1), 26-40. doi: 10.1111/spc3.12233

Uchino, B., Bowen, K., Carisle, M., & Birmingham, W. (2012). Psychological pathways linking social support to health outcomes: A visit with the "ghosts" of research past, present and future. *Social Science and Medicine, 74,* 949-957. doi:10.1016/j.socscimed.2011.11.023

Utz, R. L. (2013). Walking the dog: The effect of pet ownership on human health and health behaviours. Journal for Quality-of-Life Measurement, 1-21. doi: 10.1007/s11205-013-0299-6

Vitzum, C. (2013). Human-animal interaction: A concept analysis. *International Journal of Nursing Knowledge, 24*(1), 30-36.

Wells, D. L. (2009). The effects of animals on human health and well-being. *Journal of Social Issues, 65*(3), 523-543

Wilkinson, R., & Marmot, M. (2005). *The solid facts: The social determinants of health.* Copenhagen: World Health Organisation.

Williams, K. D., (2009). Ostracism: Effects of being ignored and excluded. In M. Zanna (Ed.) *Advances in experimental social psychology,* (pp. 279-314). New York, NY: Academic Press.

Winefield, H., Black, A., & Chur-Hansen, A. (2008). Health effects of ownership of and attachment to companion animals in an older population. *International Journal of Behavioural Medicine, 15*, 303-310. doi: 10.1080/10705500802365532

Wood, L. J., Giles-Corti, B., & Bulsara, M. (2005). The pet connection: Pets as a conduit for social capital? *Social Science and Medicine, 61,* 1159-1173. doi: 10.1016/j.socscimed.2005.01.017

Wood, L. J., Giles-Corti, B., Bulsara, M., & Bosch, D. A. (2007). More than a furry companion: The ripple effect of companion animals on neighbourhood interactions and sense of community. *Society and Animals, 15*, 43-56. doi: 10.1163/156853007X169333

Wood, L., Martin, K., Christian, H., Nathan, A., Lauritsen, C., Houghton, S., Kawachi, I., & Mc Cune, S. (2015). The pet factor – Companion animals as a conduit for getting to know people, friendship formation and social support. *PloS ONE 10*(4), 1-17. doi:10.1371/journal.pone.0122085

World Health Organisation. (WHO). (1948). *Preamble to the Constitution of the World Health Organisation*. New York: World Health Organisation.

Ysseldyk, R., Matheson, K., & Anisamn, H. (2010). Religiosity as identity: Toward an understanding of religion from a social identity perspective. *Personality and Social Psychology Review, 14*, 60-71. doi:org/10.1177/1088868309349693

Zasloff, R. L., & Kidd, A. H., (1994). Loneliness and pet ownership among single women. *Psychology Reports, 75*(2), 747-752. doi: 10.2466/prO.1994.75.2.747

Zilcha-Mano, S., Mikulincer, M., & Shaver, P. R. (2012). Pets as safe havens and secure bases: The moderating role of pet attachment orientations. *Journal of Research in Personality, 46*(5), 571-580. doi: 10.1016/j.jrp.2012.06.005

Zito, S., Vankan, D., Bennett, P., Paterson, M., & Phillips, C. J. C. (2015). Cat ownership perception and caretaking explored in an internet survey of people associated with cats. *PLOS ONE, 10*(7). doi:10.137/journal.pone.0133293

Appendix A

MASSEY UNIVERSITY
COLLEGE OF HUMANITIES
AND SOCIAL SCIENCES
TE KURA PŪKENGA TANGATA

The Cat Effect: Investigating the relationship between cat ownership and health

INFORMATION SHEET

Researcher(s) Introduction

An investigation into the nature of the relationships experienced by between owners and their companion cats that may potentially make people happier and healthier.
This research project is undertaken as partial fulfilment of the requirement of the degree of Master of Science in Health Psychology at Massey University. The research is being conducted by Gweneth Taylor at Massey University.

Project Description and Invitation

It has been estimated that 1.4 million cats are owned by New Zealand households. As a consequence, companion cats have become an important part of our social environment. Many studies have explored the relationship between companion animals and human physical and psychological health and wellbeing but despite media reports and a widely held belief that pets are good for us, findings have been inconclusive. Quantitative research has mainly focused on measurable health outcomes while the nature of the relationships that sit behind these claims tend to remain overlooked. Therefore, the proposed qualitative research aims to examine the nature of these relationships by exploring how, why and under what circumstances humans benefit or do not benefit from interactions with cats. As a result this study may highlight themes not previously considered important in the hypothesized association between cat companionship and health. This could have implications in the promotion and evaluation of animal assisted interventions and therapies for the benefit of health and wellbeing of the wider community or even the presence of animals in the workplace.
You are invited to participate in this research project.

Participant Identification and Recruitment

For this qualitative study participants will be recruited using word of mouth and represent a convenience sample of middle age and older adults. This sample represents a group of people at a similar life stage as they have reached or move towards retirement and associated considerations towards owning a cat. The selection criteria is that each participant assumes responsibility for a cat and that having a cat represents a part of their identity in so far that other people are aware that they have a cat. Furthermore the inclusion criteria will be that the participants experience normal health as opposed to many previous studies which have focused on participants with a chronic condition. It is proposed that the participants will be drawn from a wide range of different living conditions but the essential criteria is that they have a relationship with a cat. A sample size of 10 participants will be involved in order to provide sufficient data across which themes may be identified. A small 'cat pack' will be used as a reimbursement for participation.

Project Procedures

Participants will be asked to read this information sheet and to respond to an invitation to be involved in the project. Upon agreement participants will then be asked to sign a consent form prior to any involvement in the study. Next a face to face interview will be scheduled and this is expected to take approximately 30 – 60 minutes. During this time data will be obtained from an open-ended, in-depth interview which will be audio recorded and transcribed. The transcript of the interview will be provided to the participant for editing and approval for use in the study. This edited transcript will be subject to an analysis. All communication will be by mail, email, or direct delivery/collection except for the interview which will take place in the home or a location of choice of the participant. One interview may be by either Skype or telephone due to the participant living in the South Island.

Te Kunenga ki Pūrehuroa
School of Psychology - Te Kura Hinengaro Tangata
Private Bag 11222, Palmerston North 4442, New Zealand T 06 356 9099 extn 85701 F 06 355 7966 http://psychology.massey.ac.nz

Data Management

Data will be used only for the purpose of this study and no individual will be identified. Only the researcher will have access to personal information (name and age) and this will be kept secure and confidential. Participants will be identified only by a study identification at all times. Results of this study may be published but findings will focus on over-arching themes that emerge. At the end of the study this list of participants and their study identification numbers will be destroyed. Any raw data on which the study depend will be retained in secure storage until no longer required and then destroyed.

Participant's Rights

The following Statement of Rights must be included:
You are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- *decline to answer any particular question;*
- *withdraw from the study (specify timeframe);*
- *ask any questions about the study at any time during participation;*
- *provide information on the understanding that your name will not be used unless you give permission to the researcher;*
- *be given access to a summary of the project findings when it is concluded.*
- *ask for the recorder to be turned off at any time during the interview.*

Project Contacts

Principle Researcher:	**Supervisor:**
Gweneth Taylor 20A Bournemouth Tce Murrays Bay Auckland 0630 Phone: 0274 410313 Email: gwenethtaylor@hotmail.com	Professor Chris Stephens School of Psychology Private Bag 11222 Massey University, Palmerston North Phone: (06) 350-5799 exr. 85059 Email: c.v.stephens@massey.ac.nz

You are invited as a participant to contact the researcher or supervisor if they have any questions about the project.

Compulsory Statements

1. **APPLICATIONS TO A REGIONAL HEALTH & DISABILITY ETHICS COMMITTEE**
   Use the approval statement from the relevant Health & Disability Ethics Committee:

2. **MUHEC APPLICATIONS**
   The following statement is compulsory and MUST be included:

   Committee Approval Statement
   Select the appropriate statement:

   This project has been reviewed and approved by the Massey University Human Ethics Committee: Northern, Application 4000015643. If you have any concerns about the conduct of this research, please contact:
   Dr Andrew Chrystall, Chair, Massey University Human Ethics Committee: Northern, telephone: 09 414 0800 ex 43317, email: humanethicsnorth@massey.ac.nz.

3. **LOW RISK NOTIFICATIONS**

The following statement is compulsory and MUST be included:

"This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Dr Brian Finch, Director, Research Ethics, telephone 06 356 9099 ex 86015, email humanethics@massey.ac.nz".

4.

Compensation for Injury

If physical injury results from your participation in this study, you should visit a treatment provider to make a claim to ACC as soon as possible. ACC cover and entitlements are not automatic and your claim will be assessed by ACC in accordance with the Accident Compensation Act 2001. If your claim is accepted, ACC must inform you of your entitlements, and must help you access those entitlements. Entitlements may include, but not be limited to, treatment costs, travel costs for rehabilitation, loss of earnings, and/or lump sum for permanent impairment. Compensation for mental trauma may also be included, but only if this is incurred as a result of physical injury.

If your ACC claim is not accepted you should immediately contact the researcher. The researcher will initiate processes to ensure you receive compensation equivalent to that to which you would have been entitled had ACC accepted your claim.

Appendix B

MASSEY UNIVERSITY
COLLEGE OF HUMANITIES
AND SOCIAL SCIENCES
TE KURA PŪKENGA TANGATA

The Cat Effect: Investigating the relationship between cat ownership and health

PARTICIPANT CONSENT FORM - INDIVIDUAL

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I agree/do not agree to the interview being sound recorded.

I wish/do not wish to have data placed in an official archive.

I agree to participate in this study under the conditions set out in the Information Sheet.

Signature: ..... **Date:** .....

Full Name - printed .....

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Appendix C

Questionnaire

1. *What is/are your cat/s names?*
2. *How did you come to have your cat/s?*
3. Tell me about a typical day with your cat?
4. Tell me about any routines you and your cat engage in. (home coming)
5. How do you tend to spend time with your cat?
6. How do you communicate /talk with your cat? Vice versa
7. What aspects do you most enjoy about having a cat?
8. What aspects do you not enjoy/find difficult with having a cat?
9. How might your cat influence the way you do things around the home or outside?
10. How does your cat show affection with you or others?
11. How do you reciprocate affection with your cat?
12. How do you think your cat demonstrates his/her personality?
13. How does your cat become aware of rules and boundaries?
14. How do you think your cat perceives its role in your household?
15. What position do you consider your cat occupies within your household/ what position do you think they consider they occupy? Why?
16. What do you think your cat most enjoys about your care?
17. Is there anything about you and your cat that you might only tell “cat people”?
18. What do you most admire about your cat?
19. Tell me about any other interesting stories that involve yourself and your cat/s.
20. How is your cat special or interesting do you think?
21. In what ways do you feel that your cat/s might be good or not good for you?

Appendix D

Codes

1. Data extracts coded for *Companionship:*

   "…she would quite often like to hop in (he basket) and have a sleep with you close to where you are working" / "he's sort of company in the garden if you are on you own- sort of working around the place and he's a presence"

2. Data extracts coded extract coded for *One of the family:*

   "…I just think that she is a lovely addition to the household / she's just like part of the family, yeah, we interact with her as we would a member of the family" / "she is part of the family. She always comes into consideration"/ "all animals are part of the family"

3. Data extracts coded for: *Bed is a site of closeness and compromise*

   "…we've always allowed cats on the bed…..he would share your pillow and lie along the length of your body and in the crook of your arm ….he was a bit special and probably the only cat that has been allowed in the bed"/ "he sort of stays two thirds of the way down the bed"/ "when I go to bed he comes to bed"/ " I succumbed and let them all on the bed where they normally stayed all night"/ " he got away with sleeping snuggled up the end of our bed at night"/ "he's allowed to go anywhere except under the blankets" / " I have them in bed but my husband doesn't want them in bed so every time he is away they come in the bed"

4. Data extracts coded for: *Boundaries are contested*

   "…not allowed in the kitchen….dining room table…pushed off and growled at but what they do when we are not around whose to know"/ "ruined our carpet…. And I rubbed her nose in it"/ "determined and won't take no for an answer"/ "she gets up on the bench and will sneak something off the plate"/ "banned from the

lounge because he had a habit of clawing the furniture"/ we used to keep them off the table"

5. Data extracts coded for : *Gendered identity*

   "…how much can you tolerate... playing with his boundaries"/ "you can do quite rough treatment with him and he'll tolerate it"/

   "you are a handsome boy…. I said to him to grow up and get strong"/ "she's a real sweetie"/ "she was very beautiful"/ "he is a brave defender"/ "he's a good looking cat"/ " she's a bit smaller though she's a bit overweight"/"fighting over my shirt"/ "he's a big boy"

6. Data extracts coded for: *Reciprocity*

   "...they get treats they get fed they get flea treatment if they are sick they get taken to the vet…they've got a good life"/ "trusts us to do the right thing"/ " giving my attention and who I'm giving attention to"/ "dependent on you and you get back their attention in return"/ he's just the family pet…so he can expect to be properly looked after"/bit of a cuddle to compensate him for not being much opportunity to go through the house"

7. Data extracts coded for: *Censorship of "cat person" identity*

   "…I think that people would probably think it's a bit weird that I spend every evening brushing a cat"/ "I think we are a bit stupid with the cat" / "there's nothing particularly nutty we do"/ I've always been a cat person…I might sound really over the top"/ talk…just quietly because I don't want the neighbours to think I'm nutty"

8. Data extracts coded for: *Rolling over a cue for attention and tummy tickles/ signifies trust*

   "…do the big flop…often flop down and roll over and they will want you to tickle on their tummy"/ "roll over for tummy tickles"/it's like here I am plonk… on the floor or wherever…at least

pay me some attention"/ "whenever they see me they will roll over…have a little tummy scratch"

9. Data extracts coded for: *Communicating with cat language*
   "…it's all about pitch"/ "I could call him Bulldozer on that pitch and he's there"/ "my high cat voice… this is something I don't use with other people around"/ "mimic their pitch and tone … I decided to do that and … they start to talk back"/ "they just meow and I meow back to them"/ " more of a tone of voice"

10. Data extracts coded for: *Pecking order in household*
   "…all my animals are equal.. so it's 'husband' and probably me because I do the feeding … and then inside and then outside pets"/ "below a child I guess but she is still a family member"/ "for me 'Pango' is number one"/ "probably number two after wife and ahead of me"/ "for me personally he's very high… well I'd have to say everyone's equal but he's certainly not the bottom rung"

11. Data extracts coded for: *Like a child*
   "...probably like a child …yeah like a young child"/ a mixture between companions and children"/ "I'm their mum"/ "I would be their mother so they are like my children" / yeah basically they are like my children at times"

12. Data extracts coded for: *Responsibility taken seriously*
   "... take responsibility of it pretty seriously and see that it is looked after properly"/ " it's just part of an animal owner and part of being a responsible pet owner really"/ "owner had to take responsibility …that their needs are met"/ " you've got to look out for it … got the responsibility of a dependent animal"

13. Data extracts coded for*: Purr a signifier of contentment/ love / want to be with you*

"…Purring is a big thing with me it just shows that they are content in this particular environment"/ " I find the purr really soothing"/ " around me he'll purr and purr and purr"/ "lots of purring, we call it happy paws when they knead … you know they are happy"

14. Data extracts coded for: *Relaxing to be around*

"…quite soothing when everything else is going bad "/ "spend more time relaxing, interacting"/ " I get unconditional love … they listen, they are non-judgemental, you can just be yourself, you don't have to be a thing around them, they don't mind you being grumpy"

15. Data extracts coded for: *A connector*

"…a talking point, a pleasant presence around the place"/ "get on with people wherever he is"/ "likes to be part of everything yeah and everybody else's in the neighbourhood as well"/ "spend more time talking to other family members"/ "connects you with wild life"/ "the first thing I do is reconnect with my animals ...they are just happy to see me they don't care"

16. Data extracts coded: for *Playing games together*

"…tears off into my bedroom… grab him and pick him up.. a bit of a tussle"/ "likes games, chasing things, she likes rough and tumble, a bit of a fight"/ " little toy that I drag around and he plays chase around the house a bit"/ " she'll instantly know it's time for a game… grab her tail… pick her up… pat her fairly roughly… start running and they play chase"/ " comes with you to play on the hay bales"/ " loves playing hide and seek which has different rules to playing chase"

17. Data extracts for: *Focus for cuddles and closeness*

"…as time has gone on he has become more affectionate"/ " a bonding session yes… he sits on my knees and I tickle him around the throat"/ " fight as to who gets to sit on my chest while I try and read.. depending on which one wins we have a little cuddle"/ " stroke or a cuddle as I am walking past him"/ " when I am sick he'll

jump on the bed and be close to me" " any person that's going to come around to our place is someone who is going to give him a cuddle"

18. Data extracts for: *Source of love*

"…explained to her that I loved my cat"/ "we love her … we have strong feelings for her… brought that loving feeling into the house"/ "when I'm lacking love… I glean it from my cat"/ "he's a lovely cat"

19. Data extracts for: *Exclusive relationship*

"…apprehensive about other people"/ "likes a very quiet house like me"/ "scared of other people"/ "he is not interested in communicating"/ "like to be taken outside and just for me to just be outside with her while she just sits"

20. Data extracts for*: Makes me feel happy and satisfied*

"…it's pleasurable you know… give you some amusement"/ "something to care for.. I like caring for animals"/ "you are not on your own particularly if you are out in the garden … at least you've got the cat hanging around"/ " somebody else to think about besides myself"/ " made him dependent on me"/ " light hearted it's refreshing and kind of lifts your spirits a bit when he's around"

21. Data extracts coded for*: Grooming as shared enjoyment/ trust*

"…combing with their brush which they quite enjoy"/ "brush her hair… very good about her toenails too… she is very tolerant… very trusting"/ "difficult to groom him but he is very tolerant of that"/ "she loves being brushed"

22. Data extracts coded for: *Cost of care is a signifier of commitment/ the importance of my cat*

"…bit expensive but if you have a cat that's dependent on you then you have to make sure that they are well cared for"/ " pet

ownership… some ongoing costs"/ "top class cattery that sometimes costs more than us if we go camping"/ "needed to go to the vets… just do it… we're all pretty committed to her"

23. Data extracts coded for: *Uncomfortable position on hunting instinct*

"…still manages to get mice and birds… lizards… which is a shame"/ "bit of a hunter…animals killed by accident"/ "the boys … not sure how good a hunters they are"/ " a bit sad … find it a bit disturbing but I also know it's their nature"

24. Data extracts coded for: *Anthropomorphise my cat*

"…we'll say hello… which is her saying hello"/ " feed me at the correct time the food I want or… scratch me"/ " he seems to think that is OK"/ "I need feeding.. I want a pat"/ " it suddenly occurs to her – oh if I could get in under there and have a look"/ "I've been out all night doing what cats love to do so I want food"/ "she considers herself quite some gardener"/ "wondering where's he going this time, what trouble is he getting me into this time"/ "stretch his paw out to say don't go away"/ "flick his tail so you know this isn't on and then he will march out"/ "Spike gets jealous"/ "I think he actually misses us"

25. Data extracts coded for: *Share routines with my cat*

"…he calls me in the morning cause he knows it's alarm time"/ "won't use the cat door in the morning so you have to open the door for him"/ "the cats will be waiting for me… follow me… having a little chat"/ "fed before I have a shower"/ "watching television he is usually sitting beside me… got his own position"/ "follow me to the bathroom and help in the morning ablutions"

26. Data extracts coded for: *Warmth of welcome home rituals*

"…I love to come home … knows the car… follows me around the garden"/ " wait for me… run to my chair as soon as he hears me… sitting ready and waiting" / "… rubs himself against legs .. very

welcoming"/ "he overshoots things in his eagerness to greet you and say hello"/ "prick up an ear and appear very rapidly once you came home"/ "greet me as soon as he hears the car"

27. Data extracts coded for: *Pleasing my cat*

"…I have a collection of bones dried out in the oven… Charlie likes to have at least one bone in his dish. Sometimes he will put two in"/ "if I wanted to strip the bed … I would have waited if the cat was lying there in the sun"/ " sitting at the back door practising his belief that if you stare at a door long enough it will open .. Proves to be the case"/ "Sugar prefers her water from the bath tap… she will meow for that at least twice a day… until we give it to her … coming out at a certain pressure"

28. Extracts coded for: *Significance in the name*

"…his name is Cosmo but just as often called Boy Boy"/ " looked on the internet and chosen names she liked and I think Lux was one of them"/ "known as Mac Cat which fits quite well … we have a vet who has a number plate Mac Vet"/ " I had a cousin called Lily and I always liked that name and yeah everyone agreed"/ " his name is Charles Windsor… because he had very big ears like Prince Charles"/ " his name is Marilyn because we thought he was a girl and then we found he was a boy so we thought Marilyn Manson"/ " I say Millie Millie…it just seemed to suit her… she is a bit of a Millie… I call her Millicent if she is being a bit naughty"

29. Extracts coded for: *Pride in agility*

"…actually aim right, it's about a metre to get his jump right"/ "he's in full training at the moment… I can throw him … I will lift him up … to test his boundaries"/ "hold him upside down"/ "…she's very athletic"

30. Extracts coded for: *Conversation*

"…Charlie what have you been doing today"/ " typical conversation – nonsensical really"/ " I'd be saying hello and he'd be purring all the time"/ " Hello Fluffers how are you going?"/ "I talk to my cat regularly"

Appendix E

Potential Themes with sub-themes

Companionship

Attachment and Confidante

Connector

Source of affection and attention

One of the Family

Significant member of the household

High in household hierarchy

Regulation of household space reflects position of cat

Considered Like a Child

Conversation nonsensical: baby talk

Purr constructed as contentment

Meow as demand for food and attention

Interdependence

Commitment: care given – companionship received

Feeling of responsibility

Enhanced purpose in life

Identity

Male and female attributes highlighted

Censorship and deprecation

Gendered characteristics emphasise physicality, temperament and appearance

Appendix F

Final Themes and Sub-themes

Over-arching theme of Identity

Gendered characteristics highlight: physicality, temperament and appearance

Individual and social identities affirmed through: communication, companionship, inclusiveness and interdependence.

Self-censorship

Communication

Talking with the cat

Connectedness

Meow interpreted

Purr interpreted

Companionship

A good companion

Attachment

Confidante

Focus and source of relaxation and affection

Inclusiveness

One of the family

Defining spaces

Interdependence

Commitment: care given – companionship received

Feeling of responsibility

Enhanced purpose in life