

# A Longitudinal Test of the Belief that Companion Animal Ownership Can Help Reduce Loneliness

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**ABSTRACT** The widely held belief that companion animal ownership can help to reduce loneliness was tested using a quasi-experimental longitudinal design. Over a six-month period, 59 participants completed the UCLA-Loneliness Scale when they were seeking to acquire a companion animal. Participants' loneliness was measured again six-months after their initial recruitment, by which time 35 of the 59 participants had acquired a new companion animal. There was no evidence that companion animal acquisition helped to reduce levels of loneliness, irrespective of whether participants already owned a companion animal at the time of seeking to acquire a new companion animal, or the type of companion animal that was acquired. There was no evidence that participants who ultimately acquired a new companion animal differed from participants who did not, suggesting that the findings were not a consequence of a self-selection bias. The perseverance and apparent strength of the belief that companion animal ownership can alleviate loneliness is discussed in relation to the current findings.

**Keywords:** acquisition, alleviate, companion animal, loneliness, pet



Loneliness comprises a complex set of negative feelings that result from unfulfilled intimate and social aspirations. Peplau and Perlman (1982) proposed that loneliness occurs when people perceive a discrepancy between their actual and desired levels of interpersonal contact. Weiss (1973) argued there are two distinct types of loneliness—emotional and social. Emotional loneliness was argued to be due to the lack of a close, intimate attachment to a particular person. Thus, someone with a fulfilling social life could nevertheless experience a feeling of “emotional” loneliness through the lack of a romantic partner. Social loneliness was argued to result from a perceived absence of friends, relatives, or other form of general social network. This means that a person in a

happy and fulfilling romantic relationship might still experience high levels of "social" loneliness due to a perceived lack of friends.

The experience of loneliness has been described as painful, frightening, and creating a sense of paralyzing hopelessness and unalterable futility (Fromm-Reichmann 1990). Lonely people often feel worthless, incompetent and unlovable (Peplau, Miceli and Morasch 1982). Given that 89% of people reported that their relationships with other people made their lives meaningful (Klinger 1977), it is a cause for concern that 42% of people reported feeling lonely either sometimes or often (Lindgren, Svardsudd and Tibblin 1994) and that almost everybody will experience intense loneliness at some time in their lives (Peplau and Perlman 1982).

In addition to the clearly negative phenomenology, it has been argued that loneliness has a deleterious effect on health. Lynch (1977) found that lonely people are more likely to have heart attacks. Bloom, Asher and White (1978) suggested that loneliness may be predictive of sleep disruption, anxiety, headaches and ulcers, and that people experiencing such disturbances are more likely to have more driving accidents, higher suicide rates and alcohol problems. In a review of 81 prospective studies of social relationships and health, House, Landis and Umberson (1988) concluded "...that social relationships, or the lack thereof, constitute a major risk factor for health—rivalling that of well-established health risk factors such as cigarette smoking, blood pressure, blood lipids, obesity, and physical activity" (p. 541).

Given the prevalence, phenomenology, and potential health consequences of loneliness, any means by which loneliness may be reduced is well worth the attention of health professionals. It has been suggested that companion animal ownership can help to reduce loneliness (Levinson 1978; Blue 1986; Heath and McKenry 1989; Kehoe 1990; Carmack 1991; Sable 1995; Hart, Zasloff and Benfatto 1996; Kiel 1998; Hennings 1999; Banks and Banks 2002). The belief also appears to be widely held amongst the general population. For example, 101 of 103 psychology sophomores tested expressed the belief that companion animal ownership can help to alleviate loneliness (Gilbey 2003). Similarly, people commonly acquire companion animals to provide companionship (Endenburg, Hart and Bouw 1994) and suggest companion animal acquisition for those whom they believe to be lonely (Zasloff and Kidd 1994). The belief about the beneficial role of companion animals in relation to human loneliness extends to both literature (e.g., "Travels with Charley: In search of America," Steinbeck 1962) and film (e.g., "My Dog Skip," Kosove and Russell 2000).

Prior to the present study, three empirical studies have argued that companion animals have a beneficial role in the alleviation of loneliness. First, Goldmeier (1986) explored the effect of companion animal ownership and general health in a sample of elderly women. Of the participants who lived alone, companion animal owners reported significantly less loneliness than non-companion animal owners, as measured by a 3-item dichotomously scored sub-scale, out of a total of six sub-scales, from a 22-item measure of morale, the Philadelphia Geriatric Center Morale Scale (Lawton 1972). This was interpreted by Goldmeier as showing, "...pets only attenuate the sense of loneliness that may be felt from a lack of human companionship" (p. 203); that is, companion animals help to reduce loneliness. Second, Zasloff and Kidd (1994) reported that women living entirely alone were significantly lonelier, as measured by the revised UCLA Loneliness Scale (UCLA-LS; Russell, Peplau and Cutrona 1980), than people living alone with companion animals, with people and companion animals, and with people but no companion animals. From this, the authors concluded that, "...having a pet can help to diminish feelings of loneliness, particularly for women living alone..." (p. 747). Third, Roberts et al. (1996) reported the results of a pilot study where the effect of cat or dog ownership on loneliness (the loneliness measure was not reported) was investigated amongst elderly participants living in their own homes. Companion animal owners were found to be significantly less lonely than non-companion animal owners, which, it was argued, demonstrated, "...that pet ownership may be beneficial to elderly people living in their own homes with respect to reported loneliness..." (p. 64).

Although these three studies reported that companion animal owners were less lonely than non-companion animal owners, the interpretation that companion animal ownership actually causes

lower levels of loneliness is somewhat harder to defend. Whilst companion animal ownership may help to alleviate loneliness, this conclusion does not logically follow from the observation that companion animal owners are less lonely than non-companion animal owners. For example, people who live alone may be overly represented amongst non-companion animal owners because caring for an animal may be harder for those without readily available social support.

There are, however, at least three plausible reasons why companion animal ownership might be expected to help alleviate loneliness. First, companion animals appear to fulfil many of the relational functions that humans afford, in particular the provision of companionship (Melson, Schwarz and Beck 1997; McNicholas and Collis 2001). Second, the presence of a companion animal may make its owner seem more approachable to other people (Lockwood 1983). Third, companion animals appear to increase the number of person-to-person encounters that people experience (McNicholas and Collis 2000). The first reason in effect provides a non-human alternative to the alleviation of loneliness; the latter two reasons may conceivably lead to an increase in the number of human acquaintances, friends and intimate relationships a person may have, which in turn might be expected to facilitate reduced feelings of loneliness. In addition, if it were found that companion animals help to alleviate loneliness, then this would offer a plausible explanatory mechanism for the reported health benefits of companion animal ownership; a link so far noticeable by its absence (McNicholas and Collis 1998).

Contrarily, although not explicitly investigating the role of companion animals in reducing loneliness, Gilbey, McNicholas and Collis (2006) found no evidence that separation from a companion animal was associated with an increase in loneliness among students; a group Cutrona (1982) argues is already at high risk of loneliness. If companion animals help to reduce loneliness, then it might reasonably be expected that companion animal separation would lead to increased levels of loneliness.

Although it is generally believed that companion animal ownership can help to alleviate loneliness, in reality this belief has yet to undergo rigorous testing. Without experimental evidence to support such a theory, recommending companion animal ownership for lonely people may create false hope, and if feelings of loneliness fail to diminish, this may deter these people from pursuing other possibly more effective means of reducing loneliness. In addition, there may also be substantial monetary costs involved in responsible companion animal ownership, and from an animal welfare perspective, for a companion animal to be returned to a re-homing centre is likely to be an unsettling experience for the animal, potentially making it less likely to be re-homed and ultimately more likely to be euthanized. The current study therefore sought to test whether companion animal ownership helps to reduce loneliness by implementing a longitudinal exploration of companion animal acquisition and loneliness.

As is often the case, there were practical constraints governing how this study could be implemented. Specifically, as it was clearly unfeasible to recruit a probability sample and randomly allocate companion animals to one group whilst withholding companion animals from the other (a true experimental design), of necessity a quasi-experimental longitudinal design (allocation to conditions was on a self-selection basis) and non-random sampling methods were used. Thus, a convenience sample of participants, all of whom were actively seeking to acquire a companion animal was recruited and a baseline measure of loneliness was obtained. This was designated as Time 1. Six months after having completed the baseline measure, participants' loneliness was again measured. This was designated as Time 2, by which time it was anticipated that approximately half of the sample would have acquired a companion animal, whilst the other half would still be seeking a companion animal or had changed their minds. The difference between Time 1 and Time 2 for participants who did and did not acquire a companion animal could then be compared. If the loneliness of participants who acquired a new companion animal increased less, or decreased more, than the loneliness of participants who did not acquire a companion animal, then this would provide clear evidence that companion animal ownership helps to reduce loneliness.

Four potential issues of concern were identified in the basic design of the current study. First, some participants seeking to acquire a new companion animal would inevitably already own companion animals and potential benefits may accrue only or primarily to those seeking to acquire their first companion animal. To explore this possibility, existing companion animal ownership at Time 1 (yes/no) was included as a between-subjects factor. Second, participants who replied at Time 2 may have somehow differed from the participants who did not reply at Time 2. For example, if predominantly non-lonely participants replied at Time 2, then this could potentially confound any observed changes between Time 1 and time 2. Third, the participants who did not acquire a companion animal by Time 2 may somehow have differed at Time 1 from the participants who did acquire a companion animal at Time 2. For example, if lonely participants at Time 1 were over-represented amongst those who ultimately acquired companion animals, then again this could potentially confound any observed changes between Time 1 and Time 2. Fourth, participants' reasons for companion animal acquisition at Time 1 may be unevenly distributed amongst the two groups at Time 2. To control for this possibility, the extent to which participants reported they were seeking companionship from a companion animal was entered as a covariate in the main analysis.

## Methods

### *Participants*

A convenience sample of 151 participants was recruited. This comprised people who reported they were actively seeking to acquire a new companion animal at an animal re-homing centre situated in the English Midlands. Participants were 108 females, 42 males, and one who failed to report their gender. The mean age was 36.7 years and the range of ages was 16 to 78 years ( $SD = 12.35$ ). Ninety-two participants already owned a companion animal, and 59 did not yet own a companion animal.

### *Materials*

At Time 1, participants were asked their age, gender, current companion animal ownership status, and their address for future contact. Following this, participants were asked to complete the revised UCLA-Loneliness Scale (Russell, Peplau and Cutrona 1980). To complete this scale, participants indicate how often they felt the way described in each of 20 items (e.g., I feel isolated from others) using a 4-point Likert scale (never, rarely, sometimes, always). Ten items measure loneliness and ten, which require reverse scoring, measure the absence of loneliness. Thus, the range of possible scores is 20 to 80, with higher scores indicating higher levels of loneliness. Russell (1978) reported mean UCLA-LS scores of 38.6 for college students (males and females combined), 47.7 for divorced adults, and 56.8 for adult participants at a social skills workshop. Russell, Peplau and Cutrona (1980) quote an internal reliability coefficient of 0.94, convergent validity with measures of depression ( $r$  values of approximately 0.50) and amount of time spent alone ( $r = 0.41$ ), and divergent validity whereby negative correlations were obtained with each participant's number of close friends ( $r = -0.44$ ). Participants were also asked whether they were seeking to acquire a companion animal for companionship, which was scored using a 4-point Likert scale (not at all true, a little true, quite true, completely true).

### *Procedure*

All visitors to the animal re-homing centre who appeared to be 18 years or older, and who were looking at animals to be re-homed, were asked if they were actively seeking to acquire a companion animal. Potential participants who stated they were actively seeking to acquire a companion animal and who agreed to participate were given a questionnaire to complete at home. A pre-paid and addressed envelope was supplied for returning the questionnaire once completed.

Recruitment of participants took place on weekend afternoons over a period of seven months beginning in February 2002. Six months after returning the Time 1 questionnaire, participants were sent a follow-up questionnaire with a pre-paid and addressed envelope for its return.

## Results

Of 825 questionnaires distributed at Time 1, 151 (18.3%) were returned. Of these, 59 (39%) participants completed a follow-up questionnaire at Time 2. A summary of the 59 participants who replied at both Time 1 and Time 2 is shown in Table 1.

**Table 1.** Summary of the 59 participants entered in the longitudinal analysis.

	Was a New Companion Animal Acquired by Time 2?	
	Yes	No
<b>Gender</b>		
Female	23	20
Male	11	4
Not specified	1	-
<b>Pet Ownership at Time 1</b>		
Already owned companion animal	18	13
Did not already own a companion animal	17	11
<b>Age</b>		
Mean age (years)	39.8	39.1
<b>Seeking a Companion Animal to Provide Companionship</b>		
Yes ( <i>Quite true - Completely true</i> )	30	21
No ( <i>Not at all true - A little true</i> )	5	3
<b>Lived Alone at Time 1</b>		
Alone	5	5
With others	30	19
<b>Type of Companion Animal Acquired</b>		
Dog	16	
Cat	15	
Rabbit	3	
Ferret	1	

Exploratory tests of the data using chi-square analyses indicated: no difference in the proportion of males to females between participants who did or did not acquire a new companion animal by Time 2 ( $\chi^2 = 1.81$ ,  $df = 1$ ,  $n = 58$ ,  $p = 0.18$ ); no difference in the proportion of people who already owned a companion animal at Time 1 between participants who did or did not acquire a new companion animal by Time 2 ( $\chi^2 = 0.04$ ,  $df = 1$ ,  $n = 59$ ,  $p = 0.84$ ); and no difference in the proportion of people who lived alone at Time 1 between participants who did or did not acquire a new companion animal by Time 2 ( $\chi^2 = 0.43$ ,  $df = 1$ ,  $n = 59$ ,  $p = 0.38$ ).

A three-way, mixed-model analysis of covariance (ANCOVA) was used to analyze UCLA-LS scores longitudinally. The within-subjects factor "Time" had two levels: Time 1, when the participant was initially looking for a companion animal; and Time 2, six months after having completed the Time 1 questionnaire. The between-subjects factors were "new companion animal" (*whether a new companion animal had been acquired by Time 2: yes/no*), and "existing companion animal" (*whether participants already owned a companion animal at Time 1: yes/no*). Participants' answers regarding whether they were acquiring a companion animal for companionship reasons were entered as a

continuous covariate. The tests that would explore whether companion animal acquisition affects loneliness were the two-way interaction of the within-subjects factor "Time" and the between-subjects factor "new companion animal." The three-way interaction between the within-subjects factor "Time," the between-subjects factor "new companion animal" and the between-subjects factor "existing companion animal," would determine whether the previous test held true only for the first companion animal acquired. The main effect of "existing companion animal" would test whether companion animal owners were less lonely than non-companion animal owners.

The ANCOVA provided no evidence of an overall change in loneliness from Time 1 to Time 2 ( $F_{(1,54)} = 0.11, p = 0.75$ ); no evidence of a difference in loneliness due to whether participants owned a companion animal at Time 1 ( $F_{(1,54)} = 0.07, p = 0.79$ ); no evidence of an interaction between the within-subjects factor of "Time" and companion animal acquisition ( $F_{(1,54)} = 1.41, p = 0.24$ ); no evidence of an interaction between time, companion animal acquisition, and whether or not a companion animal was already owned at Time 1 ( $F_{(1,54)} = 3.24, p = 0.08$ ); and no evidence of an effect of the covariate, the extent to which a companion animal was being acquired for companionship ( $F_{(1,54)} = 0.11, p = 0.74$ ). UCLA-LS mean scores at Time 1 and Time 2 for companion animal owners and non-companion animal owners who did or did not acquire a new companion animal by Time 2 are shown in Table 2.

**Table 2.** UCLA-LS mean scores at Time 1 and Time 2 for companion animal owners and non-companion animal owners who did or did not acquire a new companion animal by Time 2 (*SD* in parentheses).

Was a Companion Animal Owned at Time 1?	Was a New Companion Animal Acquired by Time 2?	Time 1	Time 2	<i>n</i>
Yes	Yes	39.43 (12.78)	40.42 (11.53)	18
Yes	No	34.54 (10.32)	36.47 (11.07)	13
No	Yes	35.78 (9.76)	38.41 (10.75)	17
No	No	37.88 (9.76)	35.91 (7.83)	11

To explore whether the baseline level of loneliness at Time 1 affected the change between Time 1 and Time 2 loneliness scores of participants who acquired a companion animal by Time 2, a median split was performed based on Time 1 UCLA-LS scores: those scoring below the median score were deemed low loneliness; those scoring above the median score were deemed high loneliness. Using Time 1–Time 2 difference scores as the dependent variable, analysis of variance provided no evidence that having high or low UCLA-LS Time 1 scores affected Time 1–Time 2 difference scores of those who ultimately acquired a new companion animal, ( $F_{(1,34)} = 1.06, p = 0.31$ ).

Using Time 1–Time 2 difference scores, an ancillary analysis provided no evidence of a difference in loneliness between participants ( $n = 15$ ) who acquired cats and participants ( $n = 16$ ) who acquired dogs, ( $F_{(1,30)} = 1.76, p = 0.20$ ).

Finally, two further analyses explored whether participant self-selection biases influenced the sample entered in the longitudinal analysis. In each case, the dependent variable was the Time 1 UCLA-LS scores. First, the 59 participants who replied at Time 2 were compared with the 92 who did not reply at Time 2. A two-way between-subjects ANOVA provided no evidence of differences in loneliness scores at Time 1 between participants who did or did not reply at Time 2, ( $F_{(1,147)} = 0.13, p = 0.72$ ); no evidence of differences due to existing companion animal ownership, ( $F_{(1,147)} = 0.21, p = 0.65$ ); and no evidence of an interaction between the two factors, ( $F_{(1,147)} = 0.58, p = 0.45$ ). Second, the 35 participants who acquired a companion animal by Time 2 were compared with the 24 participants who had not acquired a companion animal by Time 2. Two-way, between-subjects ANOVAs provided no evidence of differences at Time 1 between participants who did or did not acquire a new companion animal by Time 2, ( $F_{(1,55)} = 0.23, p = 0.64$ ); no evidence of differences due

to existing companion animal ownership, ( $F_{(1,55)} = 0.003, p = 0.96$ ); and no evidence of an interaction between the two factors, ( $F_{(1,55)} = 1.44, p = 0.24$ ).

## Discussion

The current study found no evidence to support the popular belief that companion animal acquisition helps to alleviate loneliness, irrespective of whether participants already owned companion animals, the type of companion animal acquired (cat or dog), or the participants' baseline level of loneliness. Nor was there evidence to support earlier findings that companion animal owners are less lonely than non-companion animal owners (Goldmeier 1986; Zasloff and Kidd 1994; Roberts et al. 1996).

In addition, there was no evidence of a difference in Time 1 UCLA-LS scores between participants who did or did not reply at Time 2 or between those who did or did not acquire a companion animal by Time 2. The extent to which participants acquired a companion animal for companionship did not significantly affect the findings.

It was observed that the largest absolute Time 1–Time 2 difference was among participants who did not own a companion animal at Time 1, but who acquired one before Time 2. This is precisely the group that might be expected to show a reduction if companion animal ownership helped to alleviate loneliness. However, against expectation there was a tendency of increased loneliness in this group.

In contrast to the findings reported here, the reasons why companion animal ownership might be expected to alleviate loneliness remain somewhat compelling. It is necessary, therefore, to somehow attempt to reconcile the current findings with the popularly held belief.

First, it is possible that companion animal acquisition did affect loneliness, but not in a way detected by the UCLA-LS. The possibility that other loneliness measures could detect differences that the UCLA-LS did not could be explored in future research. One potential alternative is DiTommaso and Spinner's (1993) Social and Emotional Loneliness Scale for Adults, which measures three dimensions: social, emotional, and family loneliness. Although such an approach may be of interest, as there is no theoretical justification why scales measuring sub-scales of global loneliness should reveal differences that a global scale did not, it is suggested that such a strategy is unlikely to be successful. For example, Gilbey (2003) found no evidence that Medcof and Wegener's (1992) "Need for nurturance" would differentiate between companion animal owners and non-owners.

Second, an alternative yet to be explored is that the reason some people seek to acquire pets is because they experience a particular type of loneliness in which they feel they do not have as much contact with animals as they would consider ideal. In other words, companion animal loneliness could be a distinct sub-type of global loneliness, in a similar way to which social and romantic loneliness are sub-types of global loneliness. If this supposition is correct, then the UCLA-LS should not be expected to detect any change in loneliness associated with companion animal acquisition.

Third, it is possible that companion animal acquisition does not alleviate loneliness, but somehow confers benefits that lead people to believe that they are less lonely. For example, companion animal ownership might add structure to a person's life leaving less time to introspect on feelings of loneliness. Accordingly, a decrease in negative affect may occur which may mistakenly be attributed to a decrease in loneliness, and thus explaining the popular belief.

Fourth, Servais (1999) suggested a simple explanation for why the belief that companion animal ownership can help to alleviate loneliness might exist even though empirical evidence suggests it is false. It could be that people are victims of self-illusions: they see more than what really happens. For example, the perseverance of the belief may rely, at least in part, upon a faulty, albeit plausible, syllogism: if companion animals provide companionship similar to that of humans (Melson, Schwarz and Beck 1997; McNicholas and Collis 2001) and human company alleviates loneliness (Peplau and Perlman 1982), then companion animal ownership must also alleviate loneliness.

Finally, although the present research found no evidence that companion animal ownership helps to alleviate loneliness, it is possible that an effect does occur, but only amongst specific

sub-groups of the population so that, when tested amongst the wider population, any effect of companion animal acquisition becomes diluted to such an extent that it can no longer be detected. We suggest that those at higher risk of loneliness, such as those living alone or who are housebound may stand to benefit the most from the companionship and social facilitation an animal can provide. Given earlier findings (Goldmeier 1986; Zasloff and Kidd 1994; Roberts et al. 1996) it is suggested this may be the most fruitful line of future research.

A possible limitation of the present study is that between Time 1 and Time 2 the participants who did not acquire a new companion animal may instead have performed some unknown behavior that had an effect similar to companion animal acquisition. For example, they may have found a new pastime or hobby that had a similar effect to companion animal acquisition and which fulfilled the previous desire for a companion animal. If this had occurred, any effect attributable to companion animal acquisition may have gone undetected.

Two possible directions for future research are suggested. First, research could focus on specific sub-groups of the population thought to be at high risk of loneliness (e.g., geographically isolated, recently bereaved, terminally ill). Where the degree of loneliness to be alleviated is great, the impact of companion animal ownership might become readily apparent. Such research may yet support the belief that companion animal ownership can help to reduce loneliness. Second, the measurement of loneliness might be approached from a broader context (e.g., a discursive or narrative approach), as it is possible that a quantitative measurement of loneliness, such as the UCLAS-LS, fails to detect qualitative changes that truly do occur.

In conclusion, the findings of the study reported here failed to find evidence to support the belief that companion animal ownership helps to reduce loneliness among a mainstream sample. Accordingly, it is suggested that some caution should be shown when considering or recommending companion animal ownership if the primary reason is to alleviate loneliness.

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