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Unleashing the Personality Divide: Resilience in Dog Owners, Neuroticism in Cat Owners

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ABSTRACT

Personality differences have been reported in "dog people" and "cat people" across all Big Five personality traits. Dog ownership has also been associated with reduced loneliness in people living alone during periods of prolonged isolation, which may be suggestive of higher levels of resilience in this population of pet owners. This research extends these findings by investigating the predictive power of dog vs. cat ownership on Big Five personality traits and resilience in an Australian population, after controlling for age and gender. Three hundred and twenty-one participants completed an online survey consisting of questions on demographics, pet ownership, and personality, as well as providing free-hand responses for their choice in pet. As hypothesized, dog ownership was found to positively predict resilience, while cat ownership positively predicted neuroticism. In contrast to our expectations, no other personality differences were found between pet owners. Qualitative insights suggest pet choice is driven simply by "liking" that pet (i.e., being a "dog person" or "cat person"), pet personality factors, lifestyle habits, and living situations. Findings suggest that personality factors might explain why people who choose to own dogs fare better than people who choose not to own dogs during challenging times of social isolation, which may be unrelated to the animal itself.

KEYWORDS

Big Five; cat people; dog people; human–animal interaction; pet owner

There are an estimated 30.4 million pets living in Australian households, the most common being dogs and cats, and 2021 estimates reveal that 69% of households include a family pet, an increase from 61% of households in 2019 (Animal Medicines Australia, 2021). Previous ownership of a pet seems to play a role in current pet ownership, with people more likely to identify as a "cat" or "dog" person if they had owned one in childhood (Kidd & Kidd, 1980), if they currently owned said pet (Perrine & Osbourne, 1998), and also if they reported more positive past experiences with them (Perrine & Osbourne, 1998). Fall et al. (2019) found that there may be genetic factors (i.e., heritability)

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that contribute to dog ownership beyond environmental/experiential influences. Research on personality differences among people who own pets and those who don't have produced inconsistent findings. For example, McConnell et al. (2011) demonstrated that pet owners are more conscientious and extraverted than non-owners, Fraser et al. (2020) found that pet owners demonstrate lower conscientiousness and higher openness than non-pet owners, while Bao and Schreer (2016) and Perrine and Osbourne (1998) found no personality differences between these two groups. These mixed findings might be explained by there being personality differences that are only present in owners of different pet types.

During the COVID-19 pandemic, there was an increase in global interest in pet adoptions (Ho et al., 2021); in Australia, one in five families acquired a new cat or dog (Bennetts et al., 2022), and dog owners were found to be less lonely than non-dog owners (including cat owners) (Oliva & Johnston, 2021). This was initially explained by the fact that dog owners were venturing out of the house to engage in exercise and were socializing with other people doing the same thing (Oliva & Johnston, 2021). However, a follow-up study did not find support for a relationship between dog-walking and levels of loneliness (Lau & Oliva, 2022). The authors then proposed that personality differences, such as resilience, amongst people who chose to own dogs versus those who don't could potentially explain the reduced loneliness observed in dog owners.

Resilience can be considered a personality characteristic that determines the stability of one's healthy functioning in a changed or stressful circumstance (Oshio et al., 2018). It is therefore an important personality characteristic in determining how individuals may fare during periods of prolonged social isolation, such as those experienced during the COVID-19 lockdowns. Resilience is associated with the Big 5 personality traits (Fiske, 1949; Goldberg, 1981; McCrae & Costa, 1987; Norman, 1967), demonstrating positive associations with openness and conscientiousness, and negative associations with neuroticism (Oshio et al., 2018). These personality traits have also previously been shown to differ between people who prefer dogs versus cats (summarized below). By increasing our understanding of personality differences between people who chose to own dogs or cats (or neither), we can also gain a greater understanding of the role pets play in our lives at different times; for example, during periods of social isolation.

Early reports of personality differences among pet lovers, dog lovers, and cat lovers demonstrate differences in traits such as autonomy, dominance, aggression, and nurturance (Kidd & Kidd, 1980). Gender also influenced the findings; for example, male cat lovers demonstrated higher autonomy than the other groups, and female cat lovers demonstrated lower dominance and aggression. Male dog lovers, on the other hand, demonstrated significantly higher dominance and aggression. Cat lovers in general were significantly lower on nurturance than the other groups (Kidd & Kidd, 1980).

Big Five personality differences between individuals who self-identify as "dog people" and "cat people" have also been reported by Gosling et al. (2010), who found that dog people are more extraverted, agreeable, and conscientious, while cat people are more open and neurotic. These differences were observed when both controlling for gender and evaluating them separately within each gender as well.

When looking at people who actually owned dogs and cats (as opposed to identifying as a dog or cat "person"), Bao and Schreer (2016) were able to replicate Gosling et al.'s

(2010) findings relating to neuroticism and conscientiousness, and for neuroticism only when comparing cat and dog "people." Reevy and Delgado (2015) included a category of people who identified as "both" dog and cat people in their analyses and found that the "both" group was significantly higher than dog people on openness, and that both the "both" and "dog people" groups were significantly higher than "cat people" on extraversion and agreeableness. When looking at preferences in owned pets, owners who reported that their cat was their favorite pet scored lower on extraversion, agreeableness, and conscientiousness, and higher on neuroticism, when compared with owners who reported their dog was their favorite pet (Reevy & Delgado, 2015). No differences were found between owners who reported both pets as their favorite.

The Big 5 personality traits have also been associated with pet attachment, with neuroticism and conscientiousness demonstrating positive correlations (de Albuquerque et al., 2023; Reevy & Delgado, 2015). Negative associations between agreeableness, neuroticism, extraversion and an avoidant attachment style have been reported in dog owners (Ståhl et al., 2023), while in a sample of pet owners, negative associations with avoidant attachment were found with extraversion, openness, and conscientiousness (Reevy & Delgado, 2015). With anxious attachment, a positive association was found with neuroticism in dog owners, while both neuroticism and conscientiousness have been associated with anxious attachment in cat owners (Ståhl et al., 2023). Likewise, in a sample of pet owners a positive association between neuroticism and anxious attachment to pets has been reported (Reevy & Delgado, 2015).

Personality differences have also been observed using more narrowly defined traits, with dog people scoring higher on warmth, liveliness, rule consciousness, and social boldness, and cat people scoring higher on general intelligence, abstractedness, and self-reliance (Guastello et al., 2017). Dog people have also been found to score higher than cat people on other personality traits including Social Dominance Orientation and competitiveness, after controlling for gender (Alba & Haslam, 2015). Dog people have also been found to rate themselves higher on masculinity and independence compared with cat people, with no differences on dominance and athleticism (Perrine & Osbourne, 1998).

The above-mentioned personality differences between dog people and cat people are noteworthy, however, participants in Gosling et al.'s (2010), Guastello et al.'s (2017), Alba and Haslam's (2015), and Perrine and Osbourne's (1998) studies were not necessarily owners of the pets they identified with. Participants simply identified as a dog person, cat person, both, or neither, with only dog people and cat people statistically compared. Comparing personality profiles of people who simply prefer a particular pet may not explain findings for how pets have helped their owners during times of isolation as they may not have actually owned one at the time. Further, Bao and Schreer (2016) found fewer personality trait differences when comparing cat people and dog people versus cat owners and dog owners. Conversely, simply owning a pet does not necessarily mean that the pet is liked or that the owner is bonded to it. Hence, the current study took the same approach as Oliva and Johnston (2021) and Lau and Oliva (2022) in forcing owners of both dog and cat species to self-identify as either a dog owner or cat owner by selecting the pet they felt closest to or spent the most time with.

The aim of the current study was to extend the findings of previous literature by looking at personality differences among an Australian population who actually own dogs, cats, or neither and to qualitatively explore people's choices for owning each type of pet or no pet at all. It was hypothesized that dog ownership (versus cat ownership) would positively predict resilience, extraversion, agreeableness, and conscientiousness, and negatively predict neuroticism and openness/intellect, after controlling for age and gender, which have known influences on the Big 5 personality factors and resilience (Donnellan & Lucas, 2008; Gayton & Lovell, 2012; Gök & Koğar, 2021; Lippa, 2010; Reed & Reedman, 2020).

Methods

Ethical approval was granted by the James Cook University Human Research Ethics Committee (ID: H9120) before undertaking this research project.

Participants

A convenience sample of participants was recruited through dog- and cat-related social media pages, e-mail, the researchers' personal networks, and the James Cook University's Research Pool of first-year psychology students. Eligible participants were Australian adults aged 18 years and older (with the exception of James Cook University students who could be younger if functioning as adult learners), identified as the primary owner of a dog or cat or as a non-owner of either, and were proficient in English. A primary owner was defined as the main caregiver for the animal (e.g., spends most time with pet; is mostly responsible for the needs of the pet, etc.). To be classified as a "non-owner," participants must never have owned a pet in the past. An initial 538 responses were captured between June and August, 2023. Three hundred and twenty-eight eligible participants remained after data cleaning (see results) and were included in the study. Their age ranged from 17 to 79 years, with a mean age of 38 years ($SD = 13.25$), and 89.6% were female. The majority of participants had tertiary-level education (27.4% undergraduate and 31.0% postgraduate). The largest group reported only owning dogs (49.7%), followed by cat-only owners (24.7%), and owners of both cats and dogs (22.9%). As per Oliva and Johnston (2021) and Lau and Oliva (2022), participants who owned both species of pet were forced to self-select into "dog owner" or "cat owner" categories based on the animal they were most close to or spent most time with: 60.0% chose dogs.

Materials

The Qualtrics platform was used to house the survey, which included questions relating to demographic information, pet ownership, and personality.

Mini-International Personality Item Pool (Mini-IPIP; Donnellan et al., 2006)

The Big Five personality traits were measured using the Mini-IPIP, a brief 20-item measure introduced by Donnellan et al. (2006) as a short form of the lengthy 50-

item International Personality Item Pool (IPIP) scale (Goldberg, 1999). The Mini-IPIP measures responses on a 5-point Likert scale, where 1 = Very Inaccurate, 2 = Moderately Inaccurate, 3 = Neither Inaccurate nor Accurate, 4 = Moderately Accurate, and 5 = Very Accurate. Some statements are negatively worded and reverse coded appropriately. The measure has demonstrated good test-retest reliability and convergent, discriminant, and criterion-related validity, comparable to other measures of the Big Five personality pool (Donnellan et al., 2006). It has demonstrated consistent and acceptable internal consistencies across five previous studies (α at or well above 0.60). Collectively, these results indicate that it is a psychometrically acceptable, practical, and useful short version of the IPIP. This study demonstrated internal consistencies of $\alpha = 0.79$ extraversion, $\alpha = 0.66$ agreeableness, $\alpha = 0.72$ conscientiousness, $\alpha = 0.72$ neuroticism, and $\alpha = 0.66$ for intellect/imagination (a term used interchangeably in the literature with "openness").

Brief Resilience Scale (BRS; Smith et al., 2008)

Resilience was measured using the BRS, a 6-item scale created to assess the perceived ability to "bounce back" or recover from stress. Examples of items include "I usually come through difficult times with little trouble" and "I have a hard time making it through stressful events." It includes both positively and negatively worded items and a 5-point Likert response scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree). Possible scores range from 1.00–2.99 (low resilience), 3.00–4.30 (normal resilience) to 4.31–5.00 (high resilience). The BRS has internal consistencies between 0.80 and 0.91 and test-retest reliabilities between 0.62 and 0.69 (Smith et al., 2008). It also demonstrates convergent validity with similar measures and divergent validity with dissimilar measures, as well as discriminant predictive validity for measures and outcomes for undergraduate students (see Smith et al., 2008). In the current study the BRS demonstrated good internal consistency ($\alpha = 0.90$).

Procedure

After clicking on the link to start the survey, participants were required to consent to taking part after being provided with an explanatory statement. The first part of the survey related to participant demographics and pet ownership items, including an open-ended question asking dog and cat owners to "Please provide an explanation for your choice of pet"; non-owners were asked "Why have you never owned a pet dog or cat?" The second part of the survey comprised the Mini-IPIP, and the last part of the survey comprised the BRS. Three attention-check questions were included to assess whether respondents were paying careful attention to the survey's content and providing accurate and thoughtful responses. Attention-check questions are designed to maintain quality and integrity of the survey results and identify and filter out respondents who may not be taking the survey seriously, responding randomly, or providing inconsistent answers. If an incorrect response was given to these questions, all data relating to that individual were removed from the dataset. On completion of the survey, participants were thanked for their time and they exited the browser. The average time to complete the survey was 7 min.

Data Analyses

Quantitative

For each of the Big Five personality traits and the resilience factor, a hierarchical multiple regression analysis (MRA) was conducted to determine if pet ownership (cat owner versus dog owner) could predict each trait, after accounting for age and gender. Participants identifying as non-binary ($n = 6$) or those who preferred not to say their gender ($n = 3$) were not included in the hierarchical MRA owing to low representation in the sample size. Non-owners ($n = 8$) were also not included for the same reason.

For all analyses, the normal probability plot of standardized residuals as well as the scatterplot of standardized residuals against standardized predicted values indicated that the assumptions of normality, linearity, and homoscedasticity of residuals were met. There was independence of residuals, as assessed by Durbin–Watson statistics between 1.86 and 2.30. There was no evidence of multicollinearity, as assessed by tolerance values greater than 0.1. No cases were found to be posing undue influence on the models, with values for Cook's distance <1. Gender and age were entered in the first block and pet ownership was added in the second block for each predictor.

Qualitative

A thematic content analysis was conducted on the responses to the question "Please provide an explanation for your choice of pet." The authors independently identified themes on the first 10 responses and through discussion created mutually agreed-upon theme names and definitions that were used to independently code the next block of 10 responses. Coding was subsequently cross-referenced with the theme names, and improvements were made to the definitions where needed. This process continued until an acceptable inter-coder reliability ($r > 0.80$) was achieved. Once reached, a single coder (L.H.) continued coding until all responses were aligned with the chosen themes. Coder J.O reviewed the coding; any inconsistencies were resolved through further analysis and discussion.

Results

Raw data were downloaded from Qualtrics to SPSS Version 27. From the initial 538 responses, 210 participants were removed: 172 missed either one or more answers in the Mini IPIP or BRS scales; 38 failed to correctly respond to the attention-check questions. These participants were removed to maintain the integrity of the dataset. If participants had completed the Mini-IPIP and not the BRS ($n = 8$), they were retained and their data were used in the analyses relating to the Mini-IPIP only. The cleaned dataset had 329 individual participants. Scale ranges, means, and standard deviations for each personality factor can be seen in Table 1 for dog owners, cat owners, and non-owners.

Results of the MRA for each outcome variable are presented below. Unstandardized (B) and standardized (β) regression coefficients and squared semi-partial correlations (sr^2) for age, gender, and pet ownership are presented for statistically significant models only.

Table 1. Scale ranges, means, and standard deviations for each personality factor by pet ownership.

	Dog owners ($n = 204$ resilience, $n = 208$ Big-5)		Cat owners ($n = 108$ resilience, $n = 111$ Big-5)		Non-owners ($n = 8$ resilience, $n = 9$ Big-5)	
	Range	*M* (*SD*)	Range	*M* (*SD*)	Range	*M* (*SD*)
Resilience	1.17–5.00	3.41 (0.83)	1.00–5.00	3.15 (0.86)	1.83–3.83	2.81 (0.64)
Agreeableness	8.00–20.00	16.42 (2.67)	7.00–20.00	16.21 (2.87)	14.00–20.00	16.56 (2.19)
Conscientiousness	5.00–20.00	14.25 (3.48)	5.00–20.00	13.49 (3.41)	7.00–18.00	12.44 (3.40)
Neuroticism	4.00–20.00	11.75 (3.40)	4.00–20.00	12.70 (3.47)	9.00–19.00	13.67 (3.39)
Intellect/imagination	5.00–20.00	14.32 (3.02)	8.00–20.00	14.55 (3.06)	7.00–20.00	13.78 (4.79)
Extraversion	4.00–20.00	11.85 (3.60)	4.00–20.00	11.39 (3.55)	5.00–13.00	9.33 (3.16)

Resilience

At step 1, gender and age accounted for a statistically significant 5.9% of the variance in resilience scores ($R^2 = 0.059$, $F_{(2,\ 301)} = 9.46$, $p < 0.001$). Pet ownership was added to the model at step 2, resulting in a statistically significant improvement ($\Delta R^2 = 0.017$, $p < 0.001$), accounting for a total of 7.6% of the variance in resilience scores ($R^2 = 0.076$, $F_{(3,\ 300)} = 8.20$, $p < 0.001$). As such, Model 2 was deemed to be the "best fit." Unstandardized (*B*) and standardized (β) regression coefficients and squared semi-partial correlations (sr^2) for each predictor variable in Model 1 and Model 2 of the hierarchical MRA are reported in Table 2.

Table 2. Unstandardised (*B*) and standardised (β) regression coefficients and squared semi-partial correlations (sr^2) for each predictor variable in step 1 and step 2 of a hierarchical multiple regression predicting resilience as measured by the Brief Resilience Scale.

	B [95% CI]	β	sr^2
Model 1			
Constant	3.01 [2.27, 3.76]	–	–
Female gender	−0.14 [−0.48, −0.21]	−0.043	0.002
Age	0.015 [0.008, 0.022]***	0.24	0.055
Model 2			
Constant	3.32 [2.53, 4.10]	–	–
Female gender	−0.12 [−0.47, 0.22]	−0.039	0.002
Age	0.015 [0.008, 0.22]***	0.23	0.052
Cat owners	−0.230 [−0.42, −0.035]*	−0.13	0.017

Note: CI = confidence interval.
$n = 304$. *$p < 0.05$, ***$p < 0.001$.

Agreeableness

At the first step, gender and age accounted for a statistically significant 8.4% of the variance in agreeableness scores ($R^2 = 0.084$, $F_{(2,\ 307)} = 14.12\%$, $p < 0.001$). Pet ownership was added to the model at step 2, resulting in a non-significant improvement ($\Delta R^2 = 0.002$, $p = 0.375$), accounting for a total of 8.7% of the variance in agreeableness scores ($R^2 = 0.087$, $F_{(3,\ 306)} = 9.67$, $p < 0.001$). As pet ownership at step 2 did not significantly improve the model, Model 1 was deemed to be the "best fit." Unstandardized (*B*) and standardized (β) regression coefficients and squared semi-partial correlations (sr^2) for each predictor variable in Model 1 of the hierarchical MRA are reported in Table 3.

Table 3. Unstandardised (*B*) and standardised (*β*) regression coefficients and squared semi-partial correlations (sr^2) for each predictor variable in step 1 of a hierarchical multiple regression predicting agreeableness as measured by the Mini-International Personality Item Pool.

	B [95% CI]	*β*	sr^2
Model 1			
Constant	10.59 [8.18, 12.993]	–	–
Female gender	2.99 [1.882, 4.111]***	0.290	0.084
Age	−7.37 [−0.023, 0.023]	0.000	0.000

Note: CI = confidence interval.
$n = 310$. ***$p < 0.001$.

Conscientiousness

At the first step, gender and age accounted for a statistically significant 2.6% of the variance in conscientiousness scores ($R^2 = 0.026$, $F_{(2, 307)} = 4.10$, $p = 0.017$). Pet ownership was added to the model at step 2, resulting in a non-significant improvement ($\Delta R^2 = 0.008$, $p = 0.11$), accounting for a total of 3.4% of the variance in conscientiousness scores ($R^2 = 0.034$, $F_{(3, 306)} = 3.61$, $p = 0.014$). The addition of pet ownership at step 2 did not significantly improve the model, therefore Model 1 was deemed to be the "best fit." Unstandardized (*B*) and standardized (β) regression coefficients and squared semi-partial correlations (sr^2) for each predictor variable in Model 1 of the hierarchical MRA are reported in Table 4.

Table 4. Unstandardised (*B*) and standardised (*β*) regression coefficients and squared semi-partial correlations (sr^2) for each predictor variable in step 1 of a hierarchical multiple regression predicting conscientiousness as measured by the Mini-International Personality Item Pool.

	B [95% CI]	*β*	sr^2
Model 1			
Constant	12.28 [9.17, 15.39]	–	–
Female gender	0.076 [−1.37, 1.52]	0.006	0.000
Age	0.042 [0.013, 0.072]**	0.16	0.026

Note: CI = confidence interval.
$n = 310$. **$p < 0.01$.

Neuroticism

At step 1, gender and age accounted for a statistically significant 12.7% of the variance in neuroticism scores ($R^2 = 0.127$, $F_{(2, 307)} = 22.33$, $p < 0.001$). Pet ownership was added to the model at step 2, resulting in a statistically significant improvement ($\Delta R^2 = 0.011$, $p = 0.04$), accounting for a total of 13.8% of the variance in neuroticism scores ($R^2 = 0.138$, $F_{(3, 306)} = 16.39$, $p < 0.001$). As such, Model 2 was deemed to be the "best fit." Unstandardized (*B*) and standardized (*β*) regression coefficients and squared semi-partial correlations (sr^2) for each predictor variable in Model 1 and Model 2 of the hierarchical MRA are reported in Table 5.

Intellect/Imagination

At step 1, gender and age accounted for a non-significant 0.6% of the variance in openness scores ($R^2 = 0.006$, $F_{(2, 307)} = 0.87$, $p = 0.42$). Pet ownership was added to the model at

Table 5. Unstandardised (*B*) and standardised (*β*) regression coefficients and squared semi-partial correlations (sr^2) for each predictor variable in step 1 and step 2 of a hierarchical multiple regression predicting neuroticism as measured by the Mini-International Personality Item Pool.

	B [95% CI]	*β*	sr^2
Model 1			
Constant	12.31 [9.39, 15.24]	–	–
Female gender	1.54 [0.19, 2.90]	0.12	0.014
Age	–0.085 [–0.112, –0.057]***	0.36	0.10
Model 2			
Constant	11.28 [8.20, 14.36]	–	–
Female gender	1.50 [0.15, 2.85]*	0.12	0.013
Age	–0.083 [–0.11, –0.056]***	–0.32	0.10
Cat owners	0.78 [0.20, 1.53]*	0.11	0.011

Note: CI = confidence interval.
$n = 310$. *$p < 0.05$, ***$p < 0.0001$.

step 2, resulting in non-significant improvement ($\Delta R^2 = 0.001$, $p = 0.57$), accounting for a total of 0.7% of the variance in openness scores ($R^2 = 0.007$, $F_{(3,\ 306)} = 0.69$, $p = 0.56$).

Extraversion

At step 1, gender and age accounted for a non-significant 0.7% of the variance in extraversion scores ($R^2 = 0.007$, $F_{(2,\ 307)} = 1.09$, $p = 0.34$). Pet ownership was added to the model at step 2, but did not significantly improve the model ($\Delta R^2 = 0.002$, $p = 0.41$), accounting for a total of 0.9% of the variance in extraversion scores ($R^2 = 0.009$, $F_{(3,\ 306)} = 0.95$, $p = 0.42$).

Qualitative Findings

Themes identified from the data on why the dog owners and cat owners chose their pet are presented in Table 6. As can be seen, the most common theme amongst dog owners and cat owners was that they simply "liked the pet" (dog owners = 28.8%; cat owners = 27.9%). Some owners reported a fondness for a particular pet without providing specific reasons; for example, "all cats are the best cats." Previous ownership of particular species of pet was also captured by this theme; for example, "always grown up with dogs."

The second most commonly endorsed theme differed between dog owners and cat owners, with dog owners citing affection, interaction, and companionship (26.0%) and cat owners giving lifestyle reasons (22.5%) for their choice of pet. Lifestyle preferences between dog owners and cat owners included high-energy preferences with dogs (e.g., "enjoy taking my dog on walks" and "strong, active") and low energy and easy maintenance with cats (e.g., "easier to look after" and "lower maintenance"). For some owners their lifestyle was influenced by their living situation (e.g., "living in an apartment"), with cat owners more frequently endorsing this theme at a ratio of approximately 4:1. Dog owners who endorsed this theme generally chose a dog as their pet for protection. For other owners their choice was influenced by those in their family, with more than double the percentage of dog owners compared with cat owners choosing this animal as their pet for someone else in their family; for example, "my husband is not really a cat lover so we just have 2 dogs."

Table 6. Results of the thematic content analysis on the reasons participants gave for owning their dog or cat.

Theme	Definition	Examples	Dog owners ($n = 208$)	Cat owners ($n = 111$)
Like pet	Owner simply reports a fondness for particular species without providing specific reasons, or reports a history of ownership of them	"I have always been a dog person" "Cats are my spirit animal"	60 (28.8%)	31 (27.9%)
Affection, interaction, and companionship	Pet choice was influenced by receiving affection through pet interactions	"Cats are very affectionate" "I love the company of dogs"	56 (26.9%)	21 (18.9%)
Personality of pet	Pet choice was influenced by owner-perceived personality traits of each species	"Dogs are happy, loyal and loving" "Cats are personable, independent and quirky"	36 (17.3%)	22 (19.8%)
Lifestyle	Pet choice was influenced by how they could fit in with their owner's lifestyle	"I enjoy taking my dog on walks" "A cat was better for our lifestyle"	34 (16.3%)	25 (22.5%)
Family reasons	Pet was chosen to suit the family or specific members of the family, rather than the individual.	"Family pet that the children could play with" "Partner is allergic to cats"	21 (10.1%)	4 (3.6%)
Living situation	States that the owner's living situation impacted the choice of pet in the household	"Cats can happily live indoors" "I wasn't allowed a dog at my rental"	10 (4.8%)	18 (16.2%)
Cleanliness	States that cleanliness of the pet and/or living situation has impacted the choice of pet.	"Cats are much cleaner than dogs" "Toilet trained"	–	8 (7.2%)
Rescued	Owner reports that their pet choice was a result of rescuing them from their previous situation	"Foster fails" "Rescued a stray cat"	3 (1.4%)	7 (6.3%)

Note: Frequencies were calculated by adding the number of participants who endorsed a theme. Individual participants could endorse more than one theme. Thirty-five dog owners and nine cat owners did not provide an adequate reason for their choice of pet and were therefore not included in the sample size calculation for the theme frequency endorsements.

Pet personality was endorsed at similar frequencies for both dog owners and cat owners. However, personality characteristics that owners preferred differed between species. For example, dog owners reported liking the "loyal," "social," and "loving" nature of dogs, while cat owners preferred their animal's more "independent" nature. There was only one theme which was uniquely endorsed by cat owners, which was "cleanliness," endorsing the idea that "they are much cleaner" and "toilet trained."

Finally, a minority of dog owners and cat owners reported that rather than "choosing" their pet, they "rescued" them from a previous life. There were also an additional 13 unique responses that did not load onto the listed themes (dog owners $n = 6$; cat owners $n = 7$). Of these, three cat owners and two dog owners indicated that they had inherited or obtained their pet from someone else; for example, "he was a gift from the in-laws!" Two dog owners indicated that they chose their dogs owing to them being low allergenic. Other unique responses from cat owners were "pet chose us," "our dog

passed away," and "they don't require a lot of training." From dog owners, unique responses were "do a job" and "their physical features."

There were only nine non-owners in the sample, eight of whom provided a rationale for not owning a pet. Interestingly, the majority were for reasons out of their own control, such as "parents didn't allow" or "not allowed in rental property." Others felt they were "too young" or that it would not be "fair on the dog" given their living situation. One reported "allergies" and another "costly" as the reason for not having a pet. Two reported that they had had pets but never as the primary caregiver.

Discussion

The aim of the research was to increase our understanding of personality differences between dog owners, cat owners, and non-owners. Due to sampling issues, non-owners could not be quantitatively analyzed. However, statistically significant personality differences were found when comparing dog owners with cat owners, after accounting for gender and age: higher resilience in dog owners and higher neuroticism in cat owners.

In line with our hypothesis, dog ownership was associated with higher resilience, after accounting for age and gender. In the current study, dog owners scored, on average, 0.23 points higher on resilience than cat owners (see Table 2). Age effects were also observed: resilience scores were seen to increase by an average of 0.015 with every year of age, which is in line with previous literature (Gayton & Lovell, 2012; Reed & Reedman, 2020). It is important to note that while statistically significant, these effects only account for a very small contribution to the total variance in scores, as observed by the small sr^2 values (see Table 2). The higher resilience observed in dog owners may explain why dog owners were found to be less lonely than non-dog owners during the Australia-wide COVID-19 lockdown (Oliva & Johnston, 2021). These findings could not be explained by pet interaction or dog-walking behaviors (Lau & Oliva, 2022; Oliva & Johnston, 2021) and might suggest that the lower levels of loneliness observed in dog owners was related to the type of personality associated with being someone who owns dogs; that is, a personality characterized by stability in healthy mental functioning during adversity. Alternately, it is possible that the responsibilities and potential challenges associated with owning a dog may build one's resilience overtime.

Also in line with our hypothesis was the finding of higher neuroticism in cat owners, which is consistent with previous findings in cat owners as well as cat "people" (Bao & Schreer, 2016; Gosling et al., 2010). In the current study cat owners scored, on average, 0.78 points higher on this trait than dog owners, after accounting for age and gender (see Table 5). Gender and age effects were also observed, with females scoring an average 1.5 points higher than males, and with neuroticism scores reducing by 0.083 points, on average, with every year of age. This is consistent with previous findings relating to gender (Lippa, 2010) and age (in a British sample; Donnellan & Lucas, 2008). In a German sample, a small, positive association was observed between neuroticism and age, suggesting that culture might moderate the relationship between this personality trait and age (Donnellan & Lucas, 2008). However, owing to its British colonial roots, Australian culture is more similar to British than German culture, so the findings of the current study are not surprising. Again, while statistically significant, these effects only account for

a very small contribution to the total variance in scores, as observed by the small sr^2 values (see Table 5). Furthermore, because of the cross-sectional nature of this research, it is not possible to know if scoring high on the trait neuroticism drives people to own cats or whether cat ownership causes people to become more neurotic over time. For instance, Lafferty (2006) reports a possible link between neuroticism and toxoplasmosis, an infection caused by the *Toxoplasma gondii* parasite, which is sometimes found in cats and can transfer to humans.

In line with Lippa (2010), we found a link between agreeableness and female gender (see Table 3). However, in contrast with Donnellan and Lucas (2008), conscientiousness was also positively associated with age in the current sample (see Table 4); it was highest for those of middle age in Donnellan and Lucas (2008) study, which may be explained by the much larger sample of older adults in their study. Also, in contrast to these studies we did not find any link between the traits of intellect/imagination or extraversion with age or gender, both previously reported to decrease with age and be higher in men, albeit with small effects.

Importantly, we did not replicate previous findings of differences between dog owners/people and cat owners/people on extraversion, conscientiousness, and intellect (Bao & Schreer, 2016; Gosling et al., 2010). This might be related to the distinction between dog/cat "people" and dog/cat "owners." Bao and Schreer (2016) found differences in neuroticism and conscientiousness when comparing cat owners and dog owners, but for neuroticism only when comparing cat "people" and dog "people." We had theorized that the differences would be starker when comparing owners of each species rather than self-identifying pet "people"; however, our analyses may have been confounded by the inclusion of participants who were owners of both. People who considered themselves as "both" were not included in these previous studies, whereas in the current study they were forced to choose a group. We did this to be in line with how participants were forced to self-select into a pet ownership group in Oliva and Johnston (2021) and Lau and Oliva (2022), based on the animal they felt closest to or spent the most time with, which revealed the relationship between dog ownership and reduced loneliness. We believe this reduces confounding data from participants who own a species of pet that they may not be particularly close to or spend a lot of time with. However, it is possible that some people might have owned both species in the past but only currently owned either a dog or cat, without this species necessarily being their preferred one. Differences may also be explained by the use of different measures to quantify personality traits. For instance, while the 20-item Mini-IPIP (Donnellan et al., 2006) was used in the current study, both Gosling et al. (2010) and Bao and Schreer (2016) used a 44-item Big Five Inventory (John et al., 1991, 2008).

The lack of differences between dog owners and cat owners on extraversion, agreeableness, conscientiousness and intellect/imagination in the current study are also interesting when we consider the qualitative findings relating to what owners liked about their pet. For example, several dog owners endorsed the idea that they liked aspects of the dog's personality such as "social," as well as lifestyle aspects such as "active/walking." In contrast, cat owners liked that cats were independent. Based on this, we might expect that dog ownership would positively predict the personality trait extraversion. Previous literature does support compatibility between Big 5 personality traits of owners and

their dogs; for example, owners scoring high on extraversion (as well as "well acquainted others" and "strangers") rating their dogs as more active/excitable (Chopik et al., 2019). However, the largest association with activity/excitability was actually found with agreeableness and openness (Chopik et al., 2019), suggesting the compatibility theory might be more complex than a simple matching of personalities. For example, human–animal relationships might be better suited to those that "compliment" rather than simply "match" one another.

In addition to pet "personalities," qualitative insights from the current study suggest that lifestyle factors influenced participants' choice of pet. These include the energy level of the pet and their exercise requirements, how easy they were to look after, the suitability of their living space, and whether they themselves or someone in their household had allergies to and/or a likeness for that particular species. The findings also suggest that owning a dog and/or cat in the past was an influential factor in owning a dog and/or cat currently. This aligns with past studies that demonstrate that previous ownership of a pet is associated with more positive attitudes toward current ownership of that species (Kidd & Kidd, 1980; Perrine & Osbourne, 1998). This supports a link between environmental influences and pet ownership. However, there is evidence to support genetic influences (i.e., heritability) guiding ownership of a particular species beyond environmental/experiential influences (Fall et al., 2019). Like most phenomena, it is likely to be a bit of both. It is interesting to consider that any genetic influences on ownership may also be linked with personality traits such that both the personality trait and propensity to own a particular animal are inherited together via linked genes. This might be an interesting avenue for future genetic studies to pursue.

Strengths, Limitations, and Future Directions

This study adds to the literature on personality differences between dog people and cat people by limiting the study to only those people who actually own said species and by including a measure of resilience. These findings may explain why Australian dog owners were found to be less lonely during prolonged isolation during the COVID-19 lockdown. A strength of this study was the ability to also capture qualitative data on why people chose the pet they currently have, which revealed important findings about prior experience with said species, their personalities and attributes, as well as lifestyle influences on decision making.

While posing a potential bias, self-selection into the study over social media can also be seen as a positive given that participants are likely to be people who love their pets enough to complete a survey about them, and therefore are less likely to represent people who perhaps live with a pet but did not want to or choose to. Unfortunately, this method of data collection limited the study in that it captured very few non-pet owners, so they could not be incorporated into the quantitative data analysis. Also, we had a large female contingent, which is typical of online surveys but isn't representative of the population. The study is also limited by its cross-sectional nature; therefore, it is not possible to know which comes first, the owner's personality or the pet. Future longitudinal studies that capture personality both before and after pet acquisition would be advantageous in elucidating this.

Conclusion

In conclusion, this study revealed important personality differences between Australian dog owners and cat owners, with dog owners demonstrating higher levels of resilience and cat owners demonstrating higher levels of neuroticism, after controlling for age and gender. These findings support the notion that the type of people that enjoy owning dogs are also the type of people that can "bounce back" from stressful situations more easily. Conversely, the type of people that like to own cats may be more susceptible to the negative impacts of stress. Taken together with previous findings that dog owners are less lonely during periods of prolonged isolation, but without evidence that this is due to pet interactions or to dog-walking behaviors (Lau & Oliva, 2022; Oliva & Johnston, 2021), there is no strong evidence to support acquiring a pet to assist with dealing with social isolation or loneliness. It appears that owner personality, in particular levels of resilience, are likely to be more important. The decision to acquire a pet at any time should always be well thought out, with a commitment to care for the animal for the duration of its lifetime and with the animal's welfare at the forefront of the decision.

Disclosure Statement

No potential conflict of interest was reported by the authors.

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