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The Deep Affectional Bond Between Humans and Their Animal Companions: The Role of Experiences With Parents in Childhood and Current Parental Status

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ABSTRACT

The close relationships humans experience with others are associated with the type of emotional bond they have with animal companions (pets). The elevated and complex status of animal companionship within the home environment has been examined in relation to individual differences in personality in humans and animal companions, and the health and wellbeing of family members. There is a more limited understanding of distal (humans' experience of style of parental bonding in childhood; care, overprotection) and proximal (parental status of the animal companion owner; parent, nonparent) factors on that relationship. This study addressed the gap by recruiting 517 current owners of cats and dogs. They reported their human–human and human–pet insecure attachment orientation (anxious, avoidance) and experiences of parenting through a survey. As predicted, the findings indicated significant positive associations between human–human and human–pet social and emotional expectations of close relationships. Parenting style (overprotection) and parental status both predicted a significant proportion of the variance in human–pet anxious traits. This was not the case for the human–pet avoidance relationship orientation. The proximal and distal factors did not interact significantly with human–human anxious attachment. Therefore, it can be inferred from the main predictor outcomes that it is likely that pet owners who experience affectionate constraints in their relationship with their own parents and/or who do not have children will exhibit the characteristics of a more emotionally dependent relationship with a companion animal. This could have important implications for the way in which they protect their animal companion and experience their loss.

KEYWORDS

Attachment; human–animal interaction; parental status; parenting style; pet parenting

Human–animal interactions within households are increasingly common in the UK, and they were amplified further during the COVID-19 pandemic (PAW Report, 2023). Quotes in the popular media – for example, "Today, plants are the new pets. Pets are the new kids. Kids

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are like exotic creatures: you have to be crazy or rich to have them" (Alux, 2021) – provide not only amusement but often resonate with individuals who are making choices to have fewer children, have them later, or forgo parenthood altogether (Barraso et al., 2020). This is partially reflected in the halving of the global fertility rate at the same time as a notable rise in animal companion ownership (Roser, 2017). However, the reported increase in animal companion ownership is not restricted to younger demographics: older age groups are choosing to have pets for companionship and health benefits (Hussein et al., 2021). Such trends can be indicative of the variation in people's perspectives of what constitutes a family and how they form meaningful connections with others. Consequently, animal companions can become more central to the lives of their owners, especially when they do not have children or their children are fully grown (Turner, 2006). This has sparked a burgeoning interest in exploring the role of distal and proximal factors on the attachment relationship between humans and their animals in more detail.

Adult Human–Human Attachments

Attachment provides a framework for understanding the social and emotional expectations that occur when adults form affectional bonds with others, which are driven by early caregiving experiences or more current and ongoing attachment relations (Fraley & Roisman, 2019; Girme et al., 2018). The support that humans need when they are feeling troubled is generally described according to: (1) proximity maintenance (i.e., closeness to attachment figure); (2) safe haven (i.e., comfort and reassurance); (3) exploration (i.e., secure base for self-development); and (4) separation distress (i.e., unavailability of attachment figure) (Bowlby, 1988). The sensitivity with which caregivers respond to their needs in childhood forms the basis of an attachment model. This is then internalized and guides interpersonal goals in later relationships (see Shaver & Mikulincer, 2007 for a review). People's desire to maintain proximity to a stable "secure base" for emotional support is lifelong (Buote et al., 2009). The nature of attachment-related behaviors and their continuity from early childhood can be influenced by age, cognitive development, and social experience (Fraley & Roisman, 2019).

Individual differences in the beliefs adults have of others are interpreted through attachment-related orientations (Ainsworth et al., 2015). Secure attachment occurs through the formation of trusting, lasting relationships and a willingness to confide in others for support. This is contrasted with insecure attachment, which can be measured across two independent dimensions: *avoidance* (e.g., belief that support will not be there when needed) and *anxiety* (e.g., worry about being abandoned) (Hazan & Shaver, 1994). To regulate affect in close relationships, attachment-related avoidance relies on deactivating strategies to avoid distress caused by the unavailability of the attachment figure (e.g., less willing to invest emotion). While attachment-related anxiety is likely to invoke hyperactivating strategies that increase over-dependence on the relationship until a sense of security is attained (e.g., persistently ask for support when distressed) (Fraley & Roisman, 2019).

Negative outcomes of attachment insecurity can result in psychological symptoms (i.e., depression and anxiety), relationship satisfaction, becoming supportive/engaged parents, and the ability to adapt to stressful life events (Fraley & Roisman, 2019; Girme et al., 2018; Körük et al., 2016). Although romantic partners may become an adult's principal

attachment figure, there are other sources of support (Hazan & Shaver, 1994). Therefore, the attachment relationship has been extended to include objects, places, God, leaders in organizations, and social media (Bowlby, 1988; Schwaiger et al., 2022; Wyse, 2014; Yang et al., 2022). The human–pet bond falls within the hierarchical structure of the attachment paradigm as it not only meets the preferences humans have for those who provide a safe-haven, secure base, and comfort when they are feeling stressed and lonely (McConnell et al., 2011) but it also is known to trigger feelings of distress and the grief process when an animal companion is lost (Zilcha-Mano et al., 2012).

Attachment and Human–Pet Relationships

Animal companions can be distinguished from other animals by the way they are raised (e.g., given names like children; live in homes) and the value they are held in (e.g., belong as part of the family) (Sanders, 1999). In the UK, 29% of adults own a dog and 24% a cat, which contrasts with 2% who own a rabbit, the next most popular species (PAW Report, 2023). This can be accounted for by their child-like qualities, which make them appealing and valued for the emotional support they provide (Arluke & Sanders, 2008; Blouin, 2012). Owners of cats and dogs are reported to display more protective instincts toward them than other animals, resembling closely the relationship between a parent and a child (Bouma et al., 2021; Nagasawa et al., 2015). This has led to the adaptation of measures to empirically test human–pet attachment (e.g., Pet Attachment Scale [PAS], Albert & Bulcroft, 1988; Zilcha-Mano et al., 2011).

Some findings indicate that the bond can be stronger than the one individuals have with other family members (Albert & Bulcroft, 1988; Blouin, 2012; Cohen, 2002), and the effects of which are moderated by anxious – and avoidance-related attachment. Increased insecure attachment results in fewer benefits and positive expectations (i.e., avoidance attachment) and is associated with seeking reassurance and closeness (i.e., anxious attachment) in the human–pet relationship (Zilcha-Mano et al., 2011).

Despite ownership rates of dogs and cats being comparable (PAW Report, 2023), Green et al. (2018) found that attachment relationships with dogs are regarded as more positive. People who reported lower attachment anxiety were more likely to adopt a dog than a cat from a rescue center. This could be because high attachment anxiety was associated with concerns about pets requiring more attention (Green et al., 2018).

The complexity of the findings across studies (Blouin, 2013; Green et al., 2018; Zilcha-Mano et al., 2011) suggests that there will be other influences that predict the orientation of the human–pet relationship that are rooted in the past and current attachment development of their owners.

Distal and Proximal Factors in Human–Pet Attachment

Parenting Style

In combination, attachment orientation and parenting style determine psychosocial functioning (Körük et al., 2016). Parenting style is represented by two main dimensions (i.e., care and protection) and is indicative of patterns of behaviors that parents exhibit toward their children (Körük et al., 2016; Parker et al., 1979). Optimal parenting and

safeguarding against psychological and interpersonal problems are aligned with high care (i.e., high warmth, empathy, and closeness) and low protection (i.e., promotion of independence and autonomy) (Santoro et al., 2021). Parents who are insensitive and overly intrusive can cause insecure behaviors during periods of stress and anxiety (Körük et al., 2016). The stability of early experiences as a model of future behaviors (Bowlby, 1988) suggests that adults will develop similar parenting styles to those of their parents (Mikulincer et al., 2002). The subtle shift in the importance of the interpersonal role animal companions play in the home is reflected in the nuanced language associated with pet owners (e.g., pet parenting) (Owens & Grauerholz, 2019). Consequently, it is reasonable to expect that the style of parenting experienced in childhood is linked to the approach animal companion owners take to looking after them.

However, within-person variation in secure attachments can fluctuate in specific relationships (e.g., intimate partner). The greater the fluctuation, the more likely there is to be a decline in the relationship (Girme et al., 2018). Given the evidence presented so far relating to the relative importance of the human–pet relationship (Blouin, 2013), it is possible that it can inform the stability of the human–human attachment orientation over time. In fact, it is thought that it can play a compensatory role in insecure attachment relationships from an early stage of development, especially in women (Barlow et al., 2012). Therefore, although considered important, the degree of association between a distal factor, such as early caregiving experiences and later attachment style, has been found to be consistently weak and inconsistent across different human–human attachment orientations (Fraley & Roisman, 2019). An important proximal factor that could moderate the relationship between different interpersonal experiences in adulthood is the parental status of the pet owner.

Parental Status

For some, the warmth, love, and acceptance that people feel toward their animal companions has elevated their status to that of children (Quinn, 2005), with a dog regularly referred to as a "fur baby" (Greenebaum, 2004; Turner, 2006). Nonparents across different cultures are more likely to invest in direct care of companion animals in ways that mirror adult–child parenting practices (Volsche et al., 2022; Zilcha-Mano et al., 2011). Of note, in a study by Volsche (2018), childfree pet parents were aware of the difference between raising an animal companion and raising a child. Nonetheless, through using the language of parenting (e.g., "parent," "child," "kids"), they emphasized the comparable status of their animal companions. In contrast, Blouin (2013) found that people with children had a lower level of attachment and regard for animal companions.

Parents may include companion animals as part of the family, but the overall investment of care remains on the children (Herzog, 2021). Developing close social and emotional relationships with surrogate "children" can be explained by evolutionary processes, whereby early humans demonstrated adaptive strategies to collectively bring up offspring in a community (i.e., alloparenting) (Kenkel et al., 2017). With the slowing down of the birth rate, alloparenting animals provide a way for individuals to fulfill their evolved need to nurture (Volsche et al., 2022). Alternatively, pet parenting is a way to practice future human parenting, suggesting a role for animals in providing parental training rather than being a replacement for children (Owens & Grauerholz, 2019).

The Present Research

Despite there being a link between human–human and human–pet attachment orientations, little is known about the effect of parenting experiences on interpersonal relationships between humans and companion animals (Owens & Grauerholz, 2019). The reported increase in animal companion ownership, coupled with the likelihood that animal companions are related to in a similar way to parents and their children (Blouin, 2013; Green et al., 2018), has led to an increase in the importance of exploring how far parenting styles encountered in childhood and later parental status explain individual differences in human–pet attachment styles. Therefore, based on previous research (Blouin, 2013; Girme et al., 2018; Greenebaum, 2004; Herzog, 2021; Körük et al., 2016; Mikulincer et al., 2002; Santoro et al., 2021; Turner, 2006; Volsche et al., 2022; Zilcha-Mano et al., 2011), the current study investigated the following hypotheses:

Hypothesis 1 (H1). There will be a significant positive relationship between anxious and avoidance human–human attachment and insecure human–pet attachment styles.

Hypothesis 2 (H2). Lower levels of care reported from parents in childhood will be significantly associated with higher levels of insecure human–pet attachment in adulthood (H2a). In contrast, high levels of overprotection will be significantly linked to increased insecure attachment to a current animal companion (H2b).

Hypothesis 3 (H3). Parental status will significantly predict variance within insecure human–pet attachment styles: nonparents in comparison with parents will be more likely to report higher levels of anxious and avoidance attachment to companion animals.

Hypothesis 4 (H4). The effect of the type of human–human attachment relationship on human–pet attachment relationships will vary significantly depending on the proximal and distal factors measured.

Methods

The research was carried out in accordance with the university's ethical guidelines for investigations involving human participants (Liverpool Hope University Ethics Protocol Number: 24032023-001).

Participants

The study recruited 532 participants via social media (Facebook and Instagram), requiring them to be adults who had an animal companion. They did not need to be in a current relationship. Animal ownership comprised predominantly cats and dogs, and participants were asked to think of the animal companion they were attached to most if they had multiple animals in the household. As there were relatively few other pet types in the sample ($n = 15$), we only analyzed the 517 responses from participants who owned either a cat (39%) or a dog (61%). Participants varied in how long they had owned their pet (9% under 1 year, 50% 1–6 years, 42% for more than 6 years), and how it was acquired (51% bought, 49% adopted [includes inherited, rescued]). The latter was explored as it has been suggested that how pets are acquired is associated with the likelihood of

relinquishment and can, to some extent, be linked to the degree of attachment the owner has with their animal companion (Montoya et al., 2017).

The participants were aged from 18 to 86 years ($M = 43$ years, $SD = 13.70$; 92% women, 7% men, 1% nonbinary). The respondents were distributed across the age bands as follows: 18–29 years, 19%; 30–39 years, 23%; 40–49 years, 19%; 50–59 years, 26%; 60–69 years, 11%; 70+ years, 2%. Ninety-one percent of pet owners reported the parenting style they experienced from their mother (they were asked to respond to the most important caregiver in their childhood); 46% of whom reported being child-free, and a further 54% reported being parents (24% with at least one child under 18; 30% with children over 18).

Materials and Procedure

Data collection took place between March and April 2023. The survey was conducted online, where participant consent was collected. It included measures of human–human attachment style, human–pet attachment style, and parenting style.

Human–Human Attachment Style

Participants completed the Experiences in Close Relationships Questionnaire-Revised (ECR-R) (Fraley et al., 2000). This includes two main subscales of interpersonal insecurity: attachment-related avoidance ($\alpha = 0.94$) and attachment-related anxiety ($\alpha = 0.93$). The participants were required to respond to 36 statements (e.g., "I often worry that this person doesn't really love me") on a 7-point rating scale (1 = strongly disagree, 7 = strongly agree) about how they *generally* experience emotional relationships, rather than how they specifically felt in their current relationship. Test–retest reliability is high: $r = 0.95$, avoidance attachment; $r = 0.93$, anxiety attachment (see also Sibley & Liu, 2004; and Sibley et al., 2005, for detailed analysis of factor structure and short-term temporal stability of the scale).

Human–Pet Attachment Style

To measure human–pet attachment experiences, the Pet Attachment Questionnaire (PAQ) (Zilcha-Mano et al., 2011) was completed. It consists of a two-dimensional scale measuring the degree of animal companion attachment-related avoidance ($\alpha = 0.87$) and animal companion attachment-related anxiety ($\alpha = 0.86$). The participants were required to respond to 26 statements (e.g., "Signs of affection from my pet bolster my self-worth") rated on a 7-point scale (1 = strongly disagree, 7 = strongly agree). Test–retest reliability is high to moderate: $r = 0.80$, pet avoidance attachment; $r = 0.75$, pet anxious attachment.

Parenting Style

Participants completed the Parental Bonding Instrument (PBI) (Parker et al., 1979). The scale includes two subscales: parental care ($\alpha = 0.95$) and parental overprotection ($\alpha = 0.89$). Participants responded to 25 statements (e.g., "Tried to control everything I did") on a 4-point rating scale (1 = very like, 4 = very unlike) to retrospectively indicate their perceptions of the attitudes and behaviors of a specified caregiver during childhood (i.e., the

caregiver they felt most attached to; 91.3% reported this to be their mother). Wilhelm et al. (2005) reported that PBI scores were stable across 20 years, with retest coefficients in the range of $r = 0.64–0.83$ for parental care and $r = 0.59–0.78$ for parental overprotection.

Data Analyses

Correlation analyses were conducted to establish the pattern of relationships between human–human attachment orientations, parenting style, parental status, and human–pet attachment styles. Two hierarchical regression analyses examined the independent contribution made by the predictor variables to individual differences in the criterion variables (1) human–pet anxious and (2) human–pet avoidance attachment orientations in step 1. Step 2 of the hierarchical regression models is intended to capture the interaction effects of the distal and proximal parenting experience on the human–human and human–pet attachment orientation relationship.

Results

Preliminary Analyses

The descriptive analyses for the main variables of interest are summarized in Table 1. The skewness statistics were within the acceptable range for all factors (−2 to +2) except for human–pet avoidance (skewness = 2.20) (Byrne, 2010).

Further analyses were conducted to ascertain whether there were significant differences between the type of companion animal, how the companion animal was acquired, and how long the participants had owned the animal on the criterion and predictor variables. Independent samples *t*-tests revealed that the significant differences lay between human–pet anxious attachment and the type of pet owned ($t_{(513)} = -2.19$, $p = 0.03$, $g = 0.20$; dog $M = 32.80$, $SD = 9.77$, cat $M = 34.82$, $SD = 10.78$), care ($t_{(514)} = 2.11$, $p = 0.03$, $g = -0.19$; dog $M = 23.17$, $SD = 9.98$, cat $M = 25.06$, $SD = 9.88$), and overprotection ($t_{(507)} = -2.36$, $p = 0.02$, $g = 0.21$; dog $M = 12.64$, $SD = 8.25$, cat $M = 14.46$, $SD = 8.77$). For pet acquisition, independent *t*-tests compared those who either bought or adopted a pet. The findings indicated further significant differences for human–human anxious ($t_{(510)} = 2.01$, $p = 0.04$, $g = 0.18$; bought $M = 2.54$, $SD = 1.24$, adopted $M = 2.34$, $SD = 1.09$). For

Table 1. Descriptive statistics for variables included in the regression (human and pet attachment orientations and parenting style questionnaires).

Measures	Mean (*SD*)	Min–Max
Human–human attachment		
Anxious	2.44 (1.17)	1–6
Avoidance	2.17 (0.93)	1–6
Human–pet attachment		
Anxious	33.60 (10.21)	13–77
Avoidance	19.55 (6.57)	13–68
Parenting styles		
Care	23.91 (9.97)	0–36
Overprotection	13.35 (8.50)	0–37

length of ownership, a series of one-way ANOVAs found that there were significant differences for human–pet anxious ($F_{(2, 514)} = 4.56$, $p = 0.01$, $\eta^2 = 0.02$; < 1 year $M = 33.66$, $SD = 9.53$, 1–6 years $M = 34.88$, $SD = 11.29$, > 6 years $M = 32.05$, $SD = 8.71$), care ($F_{(2, 515)} = 4.75$, $p = 0.009$, $\eta^2 = 0.02$; < 1 year $M = 20.77$, $SD = 11.84$, 1–6 years $M = 23.56$, $SD = 9.96$, > 6 years $M = 25.41$, $SD = 9.39$), and overprotection ($F_{(2, 508)} = 5.56$, $p = 0.004$, $\eta^2 = 0.02$; < 1 year $M = 13.43$, $SD = 8.59$, 1–6 years $M = 14.54$, $SD = 8.81$, > 6 years $M = 11.93$, $SD = 7.90$).

As age may also be a consideration in the categorization of the participants into a group based on parental status (parent, nonparent) (Fraley & Roisman, 2019), this was investigated using an independent samples *t*-test. It was found that nonparents were significantly younger than parents ($t_{(509)} = 11.07$, $p < 0.001$, $g = 0.98$; nonparent $M = 37$ years, $SD = 12.65$, parent $M = 49$ years, $SD = 11.94$). Therefore, the type of pet, whether it was bought or adopted, the length of time the pet had been owned, and the age of the participant were controlled for in the regression analyses.

Correlation Analyses

Within-domain correlational analyses (Table 2) showed a significant positive relationship between the human–human attachment orientation measures (anxious and avoidance) ($r = 0.57$, $p < 0.001$) and none between the human–pet attachment measures ($p > 0.05$). The parenting style measures of care and overprotection were significantly negatively correlated ($r = -0.53$, $p < 0.001$). Further analyses revealed that how comfortable the respondents felt in being close to other people was generalized to animal interpersonal relationships ($r = 0.10$, $p < 0.05$ between human–pet avoidance and both human insecure attachment orientations; $r = 0.15$, $p < 0.001$ and $r = 0.36$, $p < 0.001$ between human–pet anxious and human–human avoidance and human–human anxious attachment, respectively). The more worry and concern animal companion owners had regarding the feelings of others toward them, the more reassurance they needed from their animal companion that the affection was mutual.

There were significant positive across-domain relationships observed between human–human attachment traits and overprotection parenting style (human–human anxious, $r = 0.22$, $p < 0.001$; human–human avoidance, $r = 0.14$, $p < 0.01$) and human–pet insecure characteristics and overprotection style (human–pet anxious, $r = 0.23$, $p < 0.001$; human–pet avoidance, $p > 0.05$). For care parenting style, there was a significant

Table 2. Bivariate correlations for human and pet attachment orientations, parenting styles, and parental status included in the regression model.

Measures	1	2	3	4	5	6
1. Human anxious						
2. Human avoidance	0.57***					
3. Pet anxious	0.36***	0.15***				
4. Pet avoidance	0.10*	0.10*	−0.06			
5. Care	−0.18***	−0.19***	−0.12**	−0.01		
6. Overprotection	0.22***	0.14**	−0.23***	0.01	−0.53***	
7. Parental status	−0.20***	−0.08*	−0.26***	−0.01	0.03	−0.12**

*$p < 0.05$.
**$p < 0.01$.
***$p < 0.001$.

negative relationship between both human–human insecure attachments (anxious, $r = -0.18$, $p < 0.001$; avoidance, $r = -0.19$, $p < 0.001$) and human–pet insecure relationship style (anxious, $r = -0.12$, $p < 0.01$; avoidance, $p > 0.05$).

Animal companion owners who considered their caregivers to be supportive and less controlling were less likely to be concerned about their animal companion's emotional availability. Parental status (parent vs. nonparent) correlated significantly and negatively with both human–human anxious ($r = -0.17$, $p < 0.001$; avoidance, $p > 0.05$), human–pet anxious ($r = -0.26$, $p < 0.001$; avoidance, $p > 0.05$), and overprotection scores ($r = -0.12$, $p < 0.01$). Therefore, participants who did not have children were more worried about what they would do if something happened to their animal companion and indicated feelings of despondency when the affection they received was not available. Significant correlations ranged from very weak to moderately strong.

Regression Analyses

Two hierarchical regression analyses were conducted to assess the relationship between the predictor variables of human–human anxious attachment orientation styles (anxious, avoidance), parenting styles (care, overprotection), parenting status (parent, nonparent), and pet ownership (cat, dog), with (1) human–pet anxious attachment and (2) human–pet avoidance orientation as the criterion variables. Multicollinearity was checked separately for the predictor variables in step 1 of the regression models. The assumption of tolerance was met for all of them (VIF < 5).

Hierarchical Regression Model – Human–Pet Anxious Attachment

In step 1 of the model, the control variables (pet type, pet acquisition, length of ownership, participant age) were entered into the equation before the independent contribution of human–human anxious and avoidance attachments were assessed next. Then, parenting styles (care and overprotection) were entered, and finally, we considered the relative effect of parental status. Table 3 includes the beta weights and change in R^2. Overall, the model accounted for 19.6% of the variance in the degree of anxious attachment the participant felt toward an animal companion (adjusted $R^2 = 0.181$, $p < 0.001$). The beta values for human–human anxious (H1), overprotection (H2b), and parental status (H3) were significant. Finally, in step 2 of the model using centered variables, no significant interaction was found between the predictor variables human–human anxious and overprotection, human anxious and parental status, and overprotection and parental status, and the criterion variable human–pet anxious attachment style (H4) (Table 3).

Hierarchical Regression Model – Human–Pet Avoidance Attachment

In step 1, data were entered into the model in accordance with the first regression analysis. Overall, the model explained 3% of the individual differences in the extent to which participants reported an avoidance attachment style toward their companion animal (adjusted $R^2 = 0.017$, $p = 0.04$). On closer examination of the beta values, age of participants entered as a control variable was the only independent predictor of human–pet avoidance attachment orientation (B (β) $= -0.06$ (0.03), SE $B = -0.12$, $p = 0.025$). The

Table 3. Model coefficients predicting human–pet anxious attachment orientation.

		Step 1 $R^2 = 19.60$		Step 2 $R^2 = 0.20$	
		$F_{(9,\ 480)} = 12.99$, $p < 0.001$		$F_{(14,\ 475)} = 8.70$, $p < 0.001$	
	Predictor variables	*B (β)*	*SE B*	*B (β)*	*SE B*
1	Pet type	−0.50 (1.00)	−0.02	−0.55 (1.00)	−0.03
	Pet acquisition	0.53 (0.97)	0.03	0.54 (0.97)	0.03
	Length of ownership	−0.55 (0.70)	−0.03	−0.60 (0.71)	−0.04
	Participant age	0.01 (0.04)	0.01	0.01 (0.04)	0.01
2	Human–human anxious	2.89 (0.47)***	0.33	2.21 (0.59)***	0.25
	Human–human avoidance	−0.49 (0.56)	−0.04	−0.50 (0.08)	−0.04
3	Care	−0.01 (0.05)	−0.01	0.05 (0.08)	0.05
	Overprotection	0.15 (0.06)**	0.13	0.21 (0.09)*	0.17
4	Parental status	−3.59 (0.94)***	−0.18	−3.64 (0.95)***	−0.18
5	Human anxious*Care			−0.02 (0.04)	−0.02
	Human anxious*Overprotection			0.02 (0.45)	0.19
	Human anxious*Parental status			1.27 (0.75)	0.10
	Parental status*Care			−0.11 (0.10)	−0.08
	Parental status*Overprotection			−0.10 (0.12)	−0.06

Note: Parental status (0 = Nonparents; 1 = Parents); *B*, unstandardized regression coefficient; *β*, standardized regression coefficient; *SE*, standard error.
*$p < 0.05$.
**$p < 0.01$.
***$p < 0.001$.

older participants were more likely to report higher levels of human–pet avoidance attachment. No further analyses were performed.

Discussion

The purpose of the current research was to investigate the relationships between childhood experiences with caregivers and experience of being a parent, and the positive link between human–human and human–pet secure attachment orientation (anxious, avoidance) found in previous research (Green et al., 2018; Zilcha-Mano et al., 2011) and corroborated in our findings. After controlling for type of pet, how the pet was acquired, length of pet ownership, and participant age, human–human anxious attachment, overprotection, and parental status accounted for a significant proportion of the variance in the extent of human–pet anxious attachment traits experienced by the animal companion owner. Unexpectedly then, the interaction between human–human anxious attachment and overprotection did not predict human–pet anxious attachment (Fraley & Roisman, 2019). This was also the case for the interactions between human–anxious attachment and parental status, and overprotection and parental status. Therefore, the novel finding of interest from the current research was the relative importance of the independent associations of early childhood experiences of parenting and whether the owner had a child(ren) or not in predicting the extent of anxious attachment characteristics owners manifested toward their animal companions. Lower levels of anxiety expressed toward a cat or dog lessened the worry and concern they had for them, the amount of distress caused when they showed limited interest in them, and reduced the concomitant relationship with their own sense of value and worth when their animal companion showed them affection (Blouin, 2013; Körük et al., 2016).

These results provide insights to support our predictions. Although weak to moderate correlations are generally reported in the literature, the area of interpersonal relationship development is dominated by the view that expectations of the sensitivity to love and attention that humans can receive from others when they are encountering distress in adulthood are derived from early experiences of parenting (Fraley & Roisman, 2019). The findings from the dimensions of parents' behavior toward their children proposed by Parker et al. (1979) used in this study extend an understanding of the importance of the cumulative impact of those early experiences not only on later human–human attachment orientation but also on the human–pet attachment relationship. Participants who reported experiencing more independence and autonomy (i.e., low protection) when they were growing up reported less anxiety in the relationship with their animals. This effect can be understood within the tenets of the safe base for exploration and self-development enabled by sensitive parenting and the reduction of separation distress that mitigates the risk of development of the characteristics of insecure attachment types (Bowlby, 1988; Fraley & Roisman, 2019; Girme et al., 2018). Once developed, the impact on the animal companion can be substantial. Future research should include an updated version of the Parenting Bonding Instrument (Murphy et al., 1997). This measure isolates two dimensions of autonomy within the overprotection scale – denial of psychological autonomy and encouragement of behavioral freedom – which would undoubtedly allow for a more informed understanding of the relationship with attachment orientations.

While the *care* dimension of parenting style was significantly associated with later human–pet anxious attachment, it did not account for independent variance. The items from a retrospective scale to distinguish *care* parenting style reflect aspects of closeness that are better related to human–human attachment relationships (e.g., "appeared to understand my problems and worries"; "enjoyed talking things over with me"; "did not talk to me very much") (Parker et al., 1979). Therefore, survey items or observations that are indicative of nonverbal behavioral manifestations of early caregiving experiences may provide a more valid assessment.

Furthermore, the weak to moderate associations observed could reflect limits in the benefits of the human–pet attachment relationship in supporting a return to feelings of equilibrium generated by hyperactivating strategies (Fraley & Roisman, 2019) and the channeling of experiences of controlling parental behavior (e.g., babying the animal companion and/or generally being overprotective) in managing situations (Szepsenwol & Simpson, 2019). Occurring due to a lack of social and emotional capacity of animal companions to provide reassurances needed in gesture and word to protect against the challenges of life events (e.g., stress, changes in personal circumstances). This is partially supported by the results where the degree of overprotection that could be associated with human–pet anxious attachment is not captured with an interaction with human–human anxious attachment. Thus, continuing to leave the animal companion owner in distress and fearful about the future.

The current research draws attention to a nuanced understanding of the vulnerability of people who do not have children in their feelings toward their animal companion (Volsche, 2021). For them, the care of a companion animal appears to mirror that provided

to infants by parents in the UK; for example, sharing close sleeping arrangements with their cat or dog and high affective responsiveness (Volsche, 2021; Volsche et al., 2023).

Previous research suggests that female animal companion owners tend to be more attached to their animals in comparison with male owners (Su et al., 2018). On average, females assume primary responsibility for caregiving, which has been further substantiated with evidence from the COVID-19 pandemic (Arkow, 2020; Power, 2020). Even if women are not parents, they tend to have more experience of caring for children than men (Dudin et al., 2022). Critically, although the interpersonal relationship with animal companions may be less than optimum in some aspects of the dynamic, the high emotional commitment to animal companions invested by nonparents, especially women, can result in increased psychological distress and wellbeing concerns when they are no longer there, which may, to some degree, go unnoticed. Thereby, suggesting that when they report the prolonged impact of grief on the loss of an animal companion, this is acknowledged by others and therapeutic settings (see Kogan & Erdman, 2020 for further discussion).

Limitations

The sample was skewed toward lower scores in human–pet avoidance attachment in participants who were parents. Generally, they were less likely to have feelings of abandonment toward their animal companions (Zilcha-Mano et al., 2011). One explanation for a more limited variability in scores lies in social desirability and/or the recruitment strategy for participants. The latter aimed to attract animal companion owners from related online groups where there may be a greater reluctance to report putting animals into the care of others, including animal rescue shelters, which could be an unintended outcome of human–pet avoidance attachment. This is an important point that could be addressed in the future.

Common with previous studies, most participants were women, a variable found to be associated with both companion animal attachment and wellbeing (Ellis et al., 2024). Since pets are increasingly part of family life, whether owners are parents or not, it would be important to hear more about how they feature in the lives of men. It is also known that men are more likely to mask their emotional attachment to animal companions, partially supporting our sample's participant sex bias and suggesting the need for additional research into the influence of masculinity (Blazina & Kogan, 2019). Taking this into account, a fuller understanding can be gained about the potential social and emotional benefits of pet ownership for them. To do this, there may need to be less focus on "care"-giving and more development of ideas about other aspects of the human–pet dynamic that influence the relationship quality that men experience with their pets (e.g., status). It is also recognized that the strength of the owner's bond with the pet and the perception of their relationship (primary caregiver, family companion) will also influence human–pet attachment style and how the pet is cared for within the home. Finally, despite the established universal nature of attachment (Fraley & Roisman, 2019), it is recognized that there are different behavioral manifestations across cultures, especially where there is prolificacy and availability of more exotic animals, which, along with the impact of social-economic status, are relatively unexplored.

Conclusion

Overall, this study shows that early and later experiences of parenting can have far-reaching consequences, including the quality of relationships with companion animals. However, there was little evidence of their mediating role in the relationship between human–human and human–pet attachment orientation. Clearly, there are important links for how we support people to enjoy optimal "parenting" and relationship quality with their pets, which no doubt will have an impact on the pet itself.

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Data Availability Statement

The data set can be found online: https://doi.org/10.17605/OSF.IO/KEMZQ.

Disclosure Statement

No potential conflict of interest was reported by the authors.

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