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Attachment styles, continuing bonds, and grief following companion animal death

Amy D. Lykins[a], Paul D. McGreevy[b], Bindi Bennett[c], Nicola K. Paul[d], and Nick Gotsis[a]

[a]School of Psychology, University of New England, Armidale, Australia; [b]School of Environmental and Rural Sciences, University of New England, Armidale, Australia; [c]National Centre for Reconciliation, Truth and Justice, Federation University, Ballarat, Australia; [d]UNE Business School, University of New England, Armidale, Australia

ABSTRACT

The death of a companion animal can cause severe grief, yet previous research investigating factors predicting grief has been hampered by limitations. We explored how attachment styles, continuing bonds, and time since loss interacted to predict grief severity in a large sample of individuals grieving the loss of a variety of companion animals. Participants ($n = 496$) aged between18 and 79 years ($M_{age} = 41.60$, $SD = 13.62$) who had lost a companion animal in the previous three years completed a continuing bonds questionnaire, and animal-oriented assessments of grief and attachment styles online. After controlling for time since loss, higher attachment anxiety predicted more severe grief, a relationship partially moderated by continuing bonds, whereas attachment avoidance predicted less severe grief irrespective of continuing bonds. We recommend reconsideration of the non-human animal exclusion in prolonged grief disorder, and suggest that bereavement supports embrace targeted approaches that consider attachment styles.

For many people, the death of a companion animal prompts grief that is comparable in intensity and severity to the grief that follows the death of a human family member (Lee, 2020). As with the loss of a human, many people report reactions such as shock, numbness, disbelief, anger, guilt, loneliness, rumination, anxiety, and depression (Archer & Winchester, 1994). Given the shorter lifespan of most non-human animals relative to humans, the death of a companion animal and consequent experience of grief are likely to be unavoidable (Lavorgna & Hutton, 2019). Understanding what factors significantly contribute to grief severity/intensity following the death of a companion animal, and perhaps more importantly, how these variables interact to drive grief severity, is crucial to developing support strategies for bereaved companion animal owners/humans. The current study aimed to investigate these factors and their interactions, and to draft recommendations for support provision guided by the results.

Originally developed to conceptualize human infants' relationships to their primary caregivers, Bowlby's (1969/1982) attachment theory more recently has been examined in the context of people's relationships with their companion animals. Rather than simply considering the strength of attachment to another, Bowlby's theory outlines different *styles* of attachment: secure, where the individual assumes that the attachment figure will be available and responsive when needed, and insecure, where the individual assumes that the attachment figure will be unresponsive or inconsistently available when needed. Insecure attachment has been further delineated into two orthogonal continuous dimensions: *attachment anxiety* and *attachment avoidance* (Fraley & Hudson, 2017).

Attachment *anxiety* refers to a person's degree of security, i.e., the strength of their assumption that their attachment figures will be available and responsive. On this axis, higher insecurity will lead to higher anxiety, and vice versa. On the second axis is attachment *avoidance*, which refers to the degree to which a person is comfortable being vulnerable and relying on their attachment figure; less comfort results in higher avoidance. A person with a secure attachment style

CONTACT Amy D. Lykins alykins@une.edu.au School of Psychology, University of New England, Armidale 2351, NSW Australia.
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will be low in both attachment anxiety and avoidance, whereas a person with an insecure attachment style will show elevations on one or both dimensions (Fraley & Hudson, 2017). Importantly, research has shown that human and animal-oriented attachment patterns are comparable (Zilcha-Mano et al., 2011), suggesting that attachment theory can provide a useful framework for exploring how relationships with companion animals contribute to human psychological functioning, including grief when the animal dies.

With respect to the death of a companion animal, people with high attachment anxiety may believe that they cannot cope without their attachment figure (i.e., the deceased animal), and consequently are less likely to let go and more likely to experience prolonged grief (i.e., grief that lasts more than 12 months; Field & Sundin, 2001). Several studies have borne this out, revealing that animal-oriented attachment anxiety is a significant predictor of heightened grief symptoms, including distress and rumination (Brown & Symons, 2016; Field et al., 2009; King & Werner, 2011; Zilcha-Mano et al., 2011).

Conversely, people whose attachment style is highly avoidant may resist grief and struggle to reconcile their mental representation of the attachment figure with the reality of the loss (Field & Sundin, 2001). Research examining the impact of attachment avoidance on animal-oriented grief has produced mixed results. Consistent with predictions, Zilcha-Mano et al. (2011) found that people scoring higher on attachment avoidance reported less distress following the death of a cat or dog, suggesting that these individuals deactivated their grief reactions and, at least initially, remained relatively indifferent to their animal's death. However, several studies have reported attachment avoidance to be positively associated with grief following the death of a companion animal (Field et al., 2009; King & Werner, 2011; Orsini, 2006). Further research to disambiguate these inconsistent results, particularly studies that extend the time since the animal's death, is warranted.

Many bereaved companion animal owners maintain their attachment in the form of a *continuing bond* with their deceased animal (Packman, Carmack *et al.*, 2011), perpetuating the mental relationship despite permanent physical separation (Field et al., 2009; Packman, Field & Filanosky, 2010). These continuing bonds often manifest in behaviors such as reminiscing, memorializing, and keeping special possessions, as well as having experiences such as hearing or feeling the presence of the deceased companion animal (Habarth et al., 2017).

Emerging research has demonstrated that a continuing bond with a deceased companion animal may be useful in grief adjustment. Studies have shown that bereaved humans who engage in activities that reflect continuing bonds with deceased companion animals can experience clinical benefits, including less severe grief than those who do not (Packman et al., 2014). There is also evidence that a continuing bond with a deceased companion animal may be associated with positive personal transformation and reassessment of life and priorities (Bussolari et al., 2021), and some bereaved individuals use these bonds as a way of coping with and finding meaning from their loss (Habarth et al., 2017). Taken together, these results suggest that a continuing bond with a deceased animal may function as a normal and adaptive component of grief and coping during bereavement.

Evidence of the potential interplay among continuing bonds, attachment styles, and grief severity following companion animal death is limited and unclear. For example, Field et al. (2009) reported significant relationships among the strength of general attachment to a companion animal, the presence of continuing bonds, and grief, but found no significant relationship between attachment anxiety or attachment avoidance and continuing bonds. These results contrast with more recent research on human loss, which has shown that continuing bonds correlate positively to attachment anxiety (Black et al., 2022) but negatively to attachment avoidance (Gassin & Lengel, 2014). In one of the largest studies to date, Habarth et al. (2017) reported that grief and general attachment strength scores were positively associated with strategies used to maintain continuing bonds, that the use of continuing bonds was associated with more comfort than distress, and that the comfort derived from the use of continuing bonds was associated with better psychological adjustment following a companion animal's death. However, the authors noted that their findings may have been limited by a bias toward recently bereaved individuals in their sample (median time since loss was 4 days), leaving the relationships between continuing bonds, attachment *styles*, grief, and time since loss unclear.

In most cases of bereavement, grief tends to diminish as time since the death increases; this has been observed following both human (Boelen & Lenferink, 2022) and companion animal (Hunt & Padilla, 2006) loss. However, much of the reviewed research restricted the time since the companion animal's death to 6 or 12 months, and many samples had extremely short periods of time since loss (e.g., a

median of 4 or 5 days; Bussolari et al., 2021; Habarth et al., 2017), constraining conclusions that can be drawn about the interactions among these variables over time. Furthermore, with the exception of Habarth et al. (2017), most previous studies had sample sizes under 150 participants and focused almost exclusively on bereaved dog and cat owners/carers, limiting the generalizability of findings to carers of other species. Lastly, several studies used a modified version of the Inventory of Complicated Grief (ICG; Prigerson et al., 1995) as the main outcome measure. The ICG was designed to evaluate "problematic" (i.e., lasting longer than 6 months) grief reactions following the death of a human. As such, the ICG may not validly assess animal-oriented grief and its unique characteristics, such as death by euthanasia (Barnard-Nguyen et al., 2016), and does not address experiences of "uncomplicated" early grief.

We aimed to assess the various contributions of attachment anxiety and attachment avoidance, as well as how continuous bonds interact with these attachment styles, to predict grief severity in a large sample of participants who had experienced the death of a diverse range of companion animals in the preceding 3 years. In doing so, we worked to address the limitations of previous research discussed above, including time since loss, species restrictions, and assessing the strength of general attachment rather than attachment styles. Additionally, we used a pet-specific grief measure to ensure valid measurement of our participants' grief experiences.

Based on the literature reviewed, we hypothesized that time since loss would be negatively correlated with grief severity *(H1)*. Second, we hypothesized that, after controlling for time since loss, higher attachment anxiety, higher attachment avoidance, and greater use of continuing bonds strategies would predict more severe grief *(H2)*. Finally, we hypothesized that continuing bonds would moderate the relationships between attachment styles and grief *(H3)*. Specifically, given that continuing bonds may be adaptative, we predicted that the positive relationships between attachment anxiety/avoidance and grief would weaken at higher levels of continuing bonds.

Method

Participants

Inclusion criteria required that the participant be 18 years or older and had experienced the death of a companion animal within the previous 3 years. A total of 658 participants commenced the survey; 162 participant cases were removed for either not meeting inclusion criteria ($n = 51$) or not completing the survey in full ($n = 111$), resulting in 496 cases that were retained for analysis. The final sample included 432 women (87.1%), 61 men (12.3%), and 3 participants (0.6%) identifying as another gender, with a mean age of 41.60 years ($SD = 13.62$, range = 18 to 79). Over 60% of the sample reported being in a committed romantic relationship, with 46% reporting full-time employment, 30% reporting part-time/casual/contract work, and 24% unemployed/retired/other. Approximately 4% of the sample did not complete high school, 20% finished secondary school, 23% had completed a vocational certificate/diploma, 38% had completed a bachelor's degree, and 15% had completed a postgraduate degree. Participants reported that their companion animals were mostly dogs (49.2%) or cats (27.2%), with a wide variety of other species also represented in the dataset. Most of the respondents (66.3%) reported that the deaths of their companion animals were sudden and unexpected, with the balance reported as natural or expected (33.7%). Euthanasia was reported as the most common mode of death among respondents at 42.9%, with "illness which eventually led to death" the next most common cause (32.4%); unexpected death (e.g., heart attack) was the third most common cause of death, reported by 21% of participants (see Supplementary Materials for more detail on companion animal species and their deaths).

Materials

Demographic and companion animal information included questions about themselves and their history of companion animal loss within the previous three years, including the number of months since the animal's death. If they had experienced multiple losses during this timeframe, they were asked to identify one companion animal that they felt closest to and to reference that animal when responding to the self-report measures.

The *Pet Attachment Questionnaire (PAQ*; Zilcha-Mano et al., 2011) comprises 26 items that assess the anxious (e.g., "I'm often worried about what I'll do if something bad happens to my pet") and avoidant (e.g., "I prefer not to be too close to my pet") dimensions of attachment. The PAQ is written in the present tense, but our instructions prompted respondents to answer according to how they felt about their animal when their animal was alive. Ratings were on a 7-point scale from 1 (not at all) to 7 (very much), with higher total scores indicating higher attachment

anxiety or avoidance. In a previous study with Israeli adult companion animal owners, the PAQ demonstrated high internal consistency (Cronbach's $\alpha = .86 - .92$), as well as good construct validity. Cronbach's alpha in this sample was good to acceptable ($\alpha = .86$ for attachment anxiety, and $\alpha = .71$ for attachment avoidance).

The *Continuing Bonds Inventory (CBI*; Field et al., 2007) comprises 14 items that assess the strength of continuing bonds (e.g., "Have you had dreams involving your deceased pet?") with a deceased companion animal. Response options ranged from 1 (disagree strongly) to 4 (agree strongly), with higher mean scores indicating stronger continuing bonds. In a previous study with bereaved companion animal owners, the CBI demonstrated good construct validity and internal consistency (Cronbach's $\alpha = .78$; Field et al., 2007); internal consistency in the current sample was good ($\alpha = .88$).

The *Pet Bereavement Questionnaire (PBQ; Hunt & Padilla,2006)* comprises 16 items that assess bereaved animal owners' grief on three subscales: grief, anger, and guilt. Only scores on the grief subscale (e.g., "I miss my pet enormously") were used in the current study. Response options range from 1 (disagree strongly) to 4 (agree strongly), with higher scores indicating greater grief severity. In a previous study with bereaved adult companion animal owners, the PBQ showed good internal consistency (Cronbach's $\alpha = .87$) and good construct validity (Hunt & Padilla, 2006). Internal consistency in the current sample was also good ($\alpha = .87$).

Procedure

We recruited participants from companion animal owner, support, and loss groups on Facebook as well as the university's online platform for first-year psychology students. No incentives were offered for participation other than research credit for the 38 student participants. Recruitment advertisements provided a link to the anonymous online survey (hosted by Qualtrics), which gave information about the study and opportunity to provide informed consent if they wished to participate. If participants did not meet the inclusion criteria, they were redirected to the study's final page. The measures of attachment styles, continuing bonds, and grief severity were randomly presented to participants to ameliorate potential order effects. Upon completion of the survey, participants were directed to resources they could access for support if they found participation distressing. This study was approved by the Human Research Ethics Committee of the University of New England.

Data analysis

We analyzed the data using IBM SPSS (v. 25). A two-step hierarchical linear regression was conducted to test *H2,* assessing the contributions of time since loss, attachment styles (anxious/avoidant), and continuing bonds to predict grief severity. Finally, two moderated regression analyses using Model 1 of the Hayes (2013) PROCESS macro were conducted to test *H3.* Analyses used 95% confidence intervals (CI) based on 10,000 bootstrapped samples to determine significance.

Results

Table 1 presents descriptive statistics and bivariate correlations among all variables. In support of *H1,* there was a significant negative correlation between time since loss and grief severity, suggesting that grief severity generally lessens over time. Time since loss was similarly associated with continuing bonds, indicating that these bonds tend to weaken with time. Attachment anxiety and avoidance were not correlated with each other, and neither correlated with time since loss. Both dimensions of attachment style were significantly correlated with grief and continuing bonds, but in different directions: for attachment anxiety, these relationships were positive, whereas they were negative for attachment avoidance.

Table 2 provides a summary of the coefficient effects within the hierarchical multiple regression to test *H2.* At Step 1, time since loss accounted for a significant 1.9% of the variance in grief, $R^2 = .02$, F (1, 494) = 9.55, $p = .002$, with less time since loss predicting higher grief. At Step 2, attachment anxiety, attachment avoidance, and continuing bonds accounted for an additional 38.6% of variance in grief severity, $\Delta R^2 = .39$, ΔF (3, 491) = 105.99, $p < .001$. In partial support of *H2,* results indicated that after controlling for the effect of time since loss, attachment

Table 1. Descriptive statistics and correlations for attachment orientations, grief, continuing bonds, and time since loss.

Variable	1	2	3	4	5
1. Attachment Anxiety	–				
2. Attachment Avoidance	.03	–			
3. Grief	.31**	−.33**	–		
4. Continuing Bonds	.24**	−.31**	.58**	–	
5. Time Since Loss	−.06	.01	−.14*	−.15*	–
M	37.28	18.45	22.21	19.87	15.01
SD	13.17	5.29	4.00	8.73	11.54
Range	13-80	13-37	9-28	1-42	0-36

Note. * $p < .01$ (two-tailed), ** $p < .001$ (two-tailed).

Table 2. Hierarchical regression results predicting grief.

		95% CI for *B*			
Variable	*B*	*LL*	*UL*	*β*	sr^2
Step 1					
Time Since Loss	−.05*	−.08	−.02	−.14	.02
Step 2					
Time Since Loss	−.02	−.04	.01	−.06	.003
Attachment Anxiety	.06**	.04	.08	.20	.03
Attachment Avoidance	−.14**	−.20	−.09	−.19	.03
Continuing Bonds	.21**	.18	.25	.47	.18

Note. CI: confidence interval; *LL*: lower limit; *UL*: upper limit. *$p < .01$, **$p < .001$.

anxiety and continuing bonds (the strongest predictor of the three) positively predicted grief, whereas attachment avoidance negatively predicted grief.

Two analyses investigated the potential moderating effect of continuing bonds on the relationship between attachment orientations and grief, with time since loss included as a covariate based on the effect reported above. The overall model with attachment anxiety as the predictor accounted for 38.2% of the variance in grief severity, $R^2 = .38$, F (4, 491) = 75.89, $p < .001$, and the continuing bonds by attachment anxiety interaction was statistically significant, $B = -.004$, $p = .007$, 95% CI [−.01, −.001]. This moderation effect accounted for a unique 0.1% of the variance in grief, $\Delta R^2 = .01$, ΔF (1, 491) = 7.42, $p = .007$. When continuing bonds were either 1 *SD* below or at mean levels, attachment anxiety significantly and positively predicted grief severity, $b = .09$, $p < .001$, 95% CI [.05, .12] and $b = .05$, $p < .001$, 95% CI [.03, .08], respectively. However, this relationship was not significant at high (i.e., 1 *SD* above mean) levels of continuing bonds ($p = .117$), indicating partial moderation of these relationships. The overall model for attachment avoidance accounted for 36.9% of the variance in grief severity, $R^2 = .37$, F (4, 491) = 71.80, $p < .001$; however, the continuing bonds by attachment avoidance interaction was not significant ($p = .352$).

Discussion

This study explored the effects of attachment styles and continuing bonds on animal-oriented grief, controlling for time since loss. In our large and diverse sample, the results clearly supported the first hypothesis and partially supported the other two. Time since loss was negatively correlated with grief, suggesting that grief severity tends to diminish over time (supporting *H1*). After controlling for the effects of time since loss, we found that attachment anxiety and continuing bonds both significantly and positively predicted grief severity, whereas attachment avoidance significantly and negatively predicted grief severity (partially supporting *H2*). *H3* was also partially supported. The relationship between attachment anxiety and grief severity weakened as continuing bonds increased. This effect was observable at low and mean levels of continuing bonds but not at high levels. However, continuing bonds did not significantly moderate the relationship between attachment avoidance and grief.

In this study, we found a small but significant negative correlation between time since loss of the companion animal and grief severity, which was consistent with some previous studies (e.g., Hunt & Padilla, 2006) but not others (e.g., Eckerd et al., 2016; Field et al., 2009). This inconsistency in the existing literature may be the result of methodological differences across the studies, noting that in studies that have assessed this relationship, the magnitude of the correlations all tended to be in the range of $r = -.15$ to −.27, irrespective of significance. This finding suggests that those studies with non-significant results may have been underpowered with respect to sample size or may have used a less sensitive assessment of time since loss (e.g., years) than would be needed to reveal this relationship. Importantly, the significant relationship found in our study indicates that our sample was unlikely to have comprised a large proportion of participants experiencing complicated or prolonged grief, as has been suggested by some researchers using similar recruitment methods (e.g., Habarth et al., 2017), though we note that many participants who reported the longest times since death still reported quite high grief severity. Generally speaking, however, time since loss should be factored into analyses investigating relationships among other variables in predicting grief.

The patterns for the relationship between attachment anxiety and all other variables in this study were largely as expected. Attachment anxiety was associated with higher grief severity, as seen in several other studies (e.g., Brown & Symons, 2016; King & Werner, 2011), and was also associated with greater endorsement of continuing bonds (e.g., Packman, Field et al., 2011). Building on the previous research, we were interested to assess whether continuing bonds moderated the relationship between attachment anxiety and grief severity, as suggested by other investigators (Habarth et al., 2017). Results of the moderation analysis for attachment anxiety and grief support this relationship, with participants who reported low and average use of continuing bonds still showing a

significant, positive relationship between attachment anxiety and grief, but this relationship no longer reaching significance when participants reported a high use of continuing bonds.

Though this was not a causal analysis, our results suggest that people with higher attachment anxiety likely find comfort in continuing bonds with their deceased animal. It is recognized that animals can act as a "safe haven," providing comfort to their owners even when attachment is insecure (Zilcha-Mano et al., 2012). The hyperactivation of the attachment system reflective of an anxious attachment style, enacted in excessive bids for closeness and help (Mikulincer & Shaver, 2012), is likely to lead to significant distress when the relationship with an animal has been broken permanently through death. Our results suggest—for the first time using animal-specific assessments of attachment styles and bereavement—that maintaining that relationship through continuing bonds may help anxiously attached individuals mitigate their grief following the companion animal's death.

The results for attachment avoidance were somewhat unexpected. Firstly, attachment avoidance correlated significantly with grief, such that grief decreased as attachment avoidance increased. This result is consistent with some previous research (e.g., Zilcha-Mano et al., 2011), but contrasts with other studies which have shown either positive (King & Werner, 2011; Orsini, 2006) or no significant (Brown & Symons, 2016) relationship with grief severity although, notably, using different outcome assessments of grief. Given the longer time since death allowed in our sample relative to other studies, we argue that the lower grief shown in those with higher attachment avoidance in our sample reflects respondents' true experience and is *not* simply evidence of delayed grief, as others have suggested (Field et al., 2009). In line with this interpretation, it makes sense that continuing bonds played no role in mitigating grief in individuals with high attachment avoidance, given continuing bonds reflect an active effort to maintain an ongoing relationship with a deceased animal that likely was not very important to these individuals in the first place.

The results from this study may help inform recommendations for related psychological diagnostic criteria, as well as interventions for bereaved companion animal owners, whose grief is often disenfranchized and undervalued by clinicians (Cordaro, 2012; though see Robson & Walter, 2013 for a critique). A growing body of evidence presented in this study and others reveals that some people will experience intense, severe, and prolonged grief in response to the death of a companion animal. Despite this, the American Psychiatric Association (2022) does not include the death of an animal in its diagnostic criteria for the new prolonged grief disorder. This omission may result in bereaved companion animal owners who are unable to access support, and healthcare professionals who may struggle to help their clients cope with animal-oriented grief. To provide more appropriate support for bereaved companion animal owners, we suggest that clinicians may wish to identify individuals at risk of developing prolonged grief and tailor appropriate support services to them. Such a practice could be facilitated by understanding the nature of the owner's attachment to their deceased animal using an established measure of human-animal attachment, such as the PAQ. As per our findings, anxiously attached individuals may benefit from therapists creating an environment where clients feel safe to express or enact their continuing bonds, which may aid in coping and preventing clinical levels of distress (e.g., Packman et al., 2011). It is also worth considering the creation of dedicated peer support groups and community-based networks for bereaved companion animal owners who may not require professional clinical support but could still benefit from a safe space to share feelings and provide mutual validation to one another.

The current results may also help inform clinical practice for veterinary professionals, who often have a critical influence on companion animal owners' reactions to their animal's death (Morris, 2012). Education on the potential for varying grief reactions of their clients may assist veterinary clinic staff to respond appropriately to bereaved companion animal owners (Holcombe et al., 2016). For example, many veterinary clinics offer keepsakes such as paw prints and ashes to owners immediately following the death of a companion animal. Our results suggest that these expressions of continuing bonds may be more helpful to some clients than others; understanding this potential difference may help veterinary staff to communicate nonjudgmentally regardless of the personal attributes of individual clients.

There are several limitations to the current study. First, the over-representation of women in the sample may make it difficult to generalize these findings to other genders. Second, although we were able to obtain a large sample of owners of a diverse range of animals, it is possible that the recruitment of participants primarily from online forums targeting companion animal enthusiasts and bereaved animal owners

may have resulted in participants who were experiencing higher levels of grief and stronger bonds with their companion animals than a sample of people from the general population; we urge some caution in generalizing these findings to the wider population. Third, a more recent and advanced measure of continuing bonds (Black et al., 2022) was published after data collection for this study had commenced. Using this scale, which differentiates between internalized and externalized expressions of continuing bonds, would allow researchers to further assess which manifestations of continuing bonds support adjustment to grief. Fourth, we did not ask our participants to provide their countries of residence, and due to our recruitment methods, it is likely that participants accessed the survey from a variety of countries/regions. Given cross-cultural variations in expressions of grief and access to supports for companion animal death (e.g., Bussolari et al., 2019), our study's conclusions may be somewhat limited by this lack of demographic information. Finally, the cross-sectional nature of this study does not allow for causal relationships to be inferred; future research would benefit from utilizing a longitudinal research design that could follow companion animal owners throughout the animal's lifetime, allowing for the assessment of key variables pre- and post-death. Additionally, future research should test the use of continuing bonds on grief severity over time via randomized control trial to assess their efficacy in mitigating grief.

To our knowledge, this is the first study to use valid and reliable animal-specific measures of attachment styles and grief in assessing the contributions to grief severity of anxious/avoidant attachment styles, the use of continuing bonds, and time since loss in individuals who have experienced the death of a companion animal. We further advanced this line of research by studying a large, mainly community-based, sample grieving the deaths of a wide variety of species. Of note, approximately 25% of our participants had lost a rabbit, horse, or companion animal other than a domestic dog or cat. Confirming previous research, we found that attachment anxiety significantly (and positively) predicted grief severity. Advancing knowledge, we found that greater use of continuing bonds moderated this relationship, pointing to new potential avenues for supporting bereaved companion animal owners. In contrast to most of the published research on companion animal grief, we found that attachment avoidance significantly (and *negatively)* predicted grief severity, and that continuing bonds played no role in this relationship. Based on these results, we believe that methodological variations across studies provide some explanation for the inconsistent findings in this space. We recommend that future research be conducted to confirm these results, and we propose that valid and reliable animal-oriented measures provide the best opportunity to discover the underlying interactions among these variables in understanding the experience of companion animal bereavement.

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ORCID

Amy D. Lykins http://orcid.org/0000-0003-2930-3964
Bindi Bennett http://orcid.org/0000-0002-0111-4670

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