Predicting Animal Attachment from Hypnotizability, Absorption, and Dissociation Scores

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Abstract
Using a sample of nearly 300 undergraduate students, we examined whether absorption, dissociation, and hypnotizability were linked with pet attachment, and whether completing assessment scales in the same or different testing contexts affected the association. We found a positive correlation between scores on the Tellegen Absorption Scale (TAS; Tellegen & Atkinson, 1974) and the Companion Animal Bonding Scale (CABS; Poresky, Hendrix, & Mosier, 1987), but failed to find a positive link between animal attachment and scores on the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986). We observed a small positive correlation between Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A; Shor & Orne, 1962) scores and animal attachment among our female participants. Collectively, absorption, dissociation, hypnotizability, age, gender, years owning a pet, and the testing context accounted for no more than 16% of the variance in CABS scores.

Keywords: Hypnosis, animal attachment, pets, absorption, dissociation, hypnotizability.
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It is commonly believed that having a close and connected relationship with a pet has a positive impact on human health. Several investigations have linked pet ownership with beneficial effects on physical and emotional well-being. For example, pet owners make fewer trips to the doctor’s office (McHarg, Baldock, Headey, & Robinson, 1995), recover more quickly following a heart attack (Friedmann & Thomas, 1998), experience lower levels of stress (Allen, 2001), and have higher self-esteem (Albert & Bulcroft, 1988). Herrald, Tomaka, and Medina (2002) examined cardiac patients and found that pet owners were more compliant with medical prescriptions and were more likely to finish a rehabilitation program compared with individuals who did not have pets. The authors’ suggest that the health benefits associated with pet ownership may stem from the fact that pets don’t judge their owner’s behavior, express unconditional love, help owners to feel needed (McNicholas & Collis, 1995), and provide an unending source of companionship. Similar to the positive effects associated with human friendships and supportive family members, having a pet can help mitigate stress (Blascovich & Katkin, 1993), lower blood pressure (Allen, Blascovich, Tomaka, & Kelsey, 1991), and reduce loneliness among the elderly (Garrity, Stallones, Marx, & Johnson, 1989). In addition, owning a pet such as a dog may promote health by encouraging physical activity (Cutt, Giles-Corti, Knuiman, & Burke, 2007).

While many investigators have found positive sequelae associated with having pets, others have failed to find any beneficial effect of pet ownership and some have reported negative findings. In a prospective study covering a six-month period of time, Gilbey, McNichols, and Collis (2007) failed to secure evidence that acquiring a pet was associated with a reduction in self-reported loneliness. Stallones, Marx, Garrity and Johnson (1990) found that pet ownership was associated with increased emotional distress among a sample of middle-aged adults (aged 35-44 years). Furthermore, young adults (aged 21-34 years) with strong attachments to animals tended to have fewer human attachments, and the lack of human support was judged to be detrimental to their physical health and psychological well-being (Stallones, Marx, Garrity & Johnson, 1990). Watson and Weinstein (1993) failed to find any differences between middle-aged pet owners and non-owners on measures of depression, anxiety, and anger. Examining traits of neuroticism, extraversion, and self-esteem, Johnson and Rule (1991) failed to find any difference between pet owners and non-pet owners.

The search for correlates of personality variables associated with pet attachment has produced few consistent results. One exception appears to be dissociation. Dissociation can be defined as “the use of imagination and attention-regulating behaviors to create a credible feeling of distance or separation from aversive events outside the realm of personal control or from feelings that generate guilt, anger, or anxiety” (Lynn, Neufeld, Green, Sandberg, & Rhue, 1996, p. 87). In two separate studies, Brown and Katcher (1997, 2001) reported significant correlations between the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986) and pet attachment. In their first study, Brown and Katcher (1997) obtained significant positive correlations between the 8-item Pet Attachment Questionnaire (PEQ; Stallones, Marx, Garrity & Johnson, 1990) and the DES total scale score ($r = .24$), and across each of the three DES factors ($rs$ ranged from .17 to .24). In a follow-up investigation, Brown and Katcher (2001) reported even stronger associations between animal attachment and dissociation (DES total scale $r = .37$; $rs$ across the factors ranged from .24 to .38). It is noteworthy that Brown and Katcher’s 2001 sample consisted entirely of female students in a two-year veterinary technician program. Two thirds of their 1997 sample was female, with approximately 1/4 of the sample being female veterinary students. Brown and Katcher (1997) did not report analyzing for gender differences.
Brown and Katcher (2001) subdivided their sample into two extreme groups based on PEQ scores. Over 40% of those who scored at least one standard deviation above the mean on the PEQ scored in the clinical range on the DES (i.e., raw score above 30; Carlson et al., 1993); whereas none of the individuals who scored in the low range on the PEQ did so. The authors suggested two possible explanations for the association between dissociation and animal attachment. First, strong dissociative tendencies could surface as a consequence of childhood abuse and mistreatment. Such experiences might encourage children to form strong attachment bonds with animals as a substitute for human relationships. The second explanation focuses on the fact that the DES measures, in part, imaginative tendencies. Brown and Katcher (2001) speculated that imaginative involvement and fantasy proneness may contribute to the ability to relate to animals and that dissociative states might stem from an intense bond and frequent interactions with a companion animal. Brown and Katcher (2001) concluded, “Dissociation may be the only personality variable, to date, that has been shown to correlate consistently with pet attachment” (p. 36).

To our knowledge, investigators have not examined pet ownership or animal attachment and hypnotizability. Such a link is plausible given that since the time of Charcot (1887/1889), an association between dissociation and hypnosis has been suspected. Two prominent theories of hypnosis, Hilgard’s (1973) neodissociation theory and Bowers’ (1992) dissociative control theory, assert that hypnotic responding stems from a division of consciousness or a dissociation of cognitive and behavioral systems from executive control (see Kirsch & Lynn, 1998 for a discussion). Several investigations have reported small but significant associations between the DES and hypnotizability, with correlation coefficients generally hovering around the r=.20 mark (Green, Kvaal, Lynn, Mare, & Sandberg, 1991; Nadon, Hoyt, Register, & Kihlstrom, 1991; Woody, 1990).

Strong attachments to companion animals have also been linked to flow experiences (Csikszentmihalyi, 1975, 1990). This further sparks speculation that people who develop strong bonds with animals might be uniquely responsive to hypnotic suggestions. In her review of human-horse interactions, Keaveney (2008) obtained self-reports from horse riders that described feelings of elation, absorption, loss of self-awareness, a narrowed perceptual field, enhanced concentration, and a sense of merging with the animal. Such descriptions overlap, at least to some degree, with reports from hypnotized individuals describing their experience of hypnosis. The resemblance between hypnotic and flow states has led Pates and his colleagues to instruct hypnotized individuals to recall previous flow state experiences in an effort to enhance athletic performance (Pates, & Maynard, 2000; Pates & Palmi, 2002; Pates, Maynard, Thomas, 2005).

Another variable that commonly correlates with hypnotizability is absorption. Absorption is the tendency to become absorbed or highly involved in sensory or imaginative experiences. The Tellegen Absorption Scale (TAS; Tellegen & Atkinson, 1974) is a popular measure of absorption. Brown and Katcher (1997) reported a positive correlation (i.e., r = .24) between animal attachment and the TAS within a college age sample that was predominantly female. Scores on the TAS have been associated with both hypnotizability (Green & Council, 2004) and various measures of dissociation (Green, Kvaal, Lynn, Mare, & Sandberg, 1991). Council, Kirsch, and Hafner (1986) were the first to report that the testing context mediates the correlation between absorption and hypnotizability. When each scale was administered in the same testing context, low-to-moderate range correlations were commonly reported (often in the r = .2 to .3 range). However, when the scales were administered in separate testing sessions as part of purportedly unrelated investigations, the correlation vanished to non-significant levels (see Council, Kirsch, & Grant, 1996, for a review of context effects).
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In the present study, we explored whether pet owners differed from non-pet owners on a standardized measure of hypnotizability. We also examined whether hypnotic responsiveness correlated with the degree to which pet owners were attached to their pets. Additionally, we included a measure of absorption and dissociation in our survey. Unlike previous investigations (e.g., Brown & Katcher, 1997; 2001) that sampled primarily female participants, our sample consisted of a roughly equal number of male and female participants. We can, therefore, explore whether gender affects the relation between animal attachment and our other measures. Finally, we administered our scales across different testing contexts that varied in terms of whether the scales were completed in one or two sessions, and whether or not participants received pre-session information linking pet ownership, animal attachment, and hypnotizability.

Method

Participants
A total of N = 312 (n = 158 females; n = 154 males) undergraduate students attending The Ohio State University at Lima completed four self-report scales in one of three testing contexts (see below). The mean age of the sample was M = 20.23 (SD = 4.44). Participants received course extra credit for their participation.

Materials
Tellegen Absorption Scale (TAS; Tellegen & Atkinson, 1974). The TAS is a 34-item scale measuring imaginative abilities and the tendency to become absorbed in everyday activities (e.g., being able to change noise into music; experiencing thoughts as visual images versus words; becoming so absorbed during a movie or play and feeling as though they are part of the play and not part of the audience). Total scale scores range from 0 to 34 and reflect the total number of items endorsed.

Companion Animal Bonding Scale (CABS; Poresky, Hendrix, & Mosier, 1987). The CABS is an 8-item questionnaire assessing a person’s attachment to their pet and the degree of bonding between person and animal. Items inquire about how often the person sleeps with their pet, takes care of their pet, and the frequency of interacting with and petting the animal. The response format is a 5-point scale ranging from 1-“never” to 5-“always.” The total scale score reflects the sum of individual items and can range from 8 to 40. Before completing the CABS, participants reported if they currently or ever owned a pet (“yes” or “no”). If an individual had more than one pet, they were instructed to reference the one that they were closest to while completing the CABS. Participants also indicated the length of time that they owned their pet. Participants who never owned a pet did not complete the CABS.

Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986). The DES is a 28-item questionnaire measuring dissociative tendencies in clinical and normal populations. The DES has been subdivided into three factors (Ross, Ellason, Anderson, 1995). The first factor, labeled Absorption-Imaginative Involvement, consists of fairly benign experiences such as missing a part of a conversation, being able to ignore pain, and getting so involved in fantasy that imagined events seem real. The second and third factors, labeled Activities of Dissociated States or Amnesia and Depersonalization-Derealization, respectively, are characterized by less common experiences. Items loading on the second factor include not recognizing friends or family members, finding unfamiliar things among their belongings, and not remembering putting on their clothing. Items from the third factor include not
recognizing their own reflection in the mirror and other people and objects not seeming real. Following the instructions adopted by Green and Lynn (1995), participants reported the percentage of time that they experienced the phenomenon in each statement. By averaging responses across items, we computed a total scale score and individual factor scores.

Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A; Shor & Orne, 1962). The HGSHS:A is a 12-item, self-report, standardized measure of responsiveness to hypnotic suggestions. Suggestions included hand levitation, inability to bend an outstretched arm, head falling forward, hallucinating a fly buzzing around their head, and post-hypnotic amnesia. Following hypnosis, participants reported the degree to which an onlooker would have judged their behavior in response to each suggestion. Scores ranged from 0 to 12 with higher scores indicating greater responsiveness to hypnotic suggestions.

Procedure

Participants completed the scales in one of three testing contexts.  

“Same Context, Subtle Link” Between Animal Attachment and Hypnotizability. In this condition, participants completed the TAS, CABS, and DES (in a fixed order) prior to the administration of the HGSHS:A. All scales were completed in a single testing session. The study was presented as an investigation of hypnotizability (i.e., the study was entitled, Standard Hypnotizability Assessment and Personality Measures; and the stated purpose of the study was to “compare hypnotizability levels across different campuses”). After discussing the hypnosis exercise and answering questions, participants completed a questionnaire packet consisting of the TAS, CABS, and DES. The CABS scale was labeled only by its acronym and the entire questionnaire packet was simply referred to as “personality measures.” Participants were informed that the purpose of the study was to learn whether “responses to items on the questionnaires are related to hypnotizability.” There was no specific reference to animal attachment, discussion of pet ownership, or any mention of a possible link between animal attachment and hypnotizability.

“Same Context, Explicit Link” Between Animal Attachment and Hypnotizability. In this condition, two separate sessions were held. In the first session, participants completed the CABS prior to administration of the HGSHS:A. Participants were told the following: “Previous investigations have found that people who have pets, or who grew up with pets, have strong attachment qualities and tend to be highly imaginative. We know that imagination is a key component of hypnotic responsiveness. We also believe that individuals with strong attachment qualities are likely to respond to hypnotic suggestions. Our research today is exploring the link between having pets, being attached to pets, and hypnotizability. Before the hypnosis session begins, we would like you to complete the Companion Animal Bonding Scale.” Approximately 2 weeks later, participants completed the TAS and DES as part of a purportedly unrelated study on personality.

“Different Context, No Link” Between Animal Attachment and Hypnotizability. In this condition, participants completed the HGSHS:A in a single testing session. Approximately 2 weeks later, in a purportedly unrelated study on Personality and Individual Differences, they completed the TAS, CABS, and the DES. No mention was made linking the two testing sessions together.

Results

Pet Owners vs. Non-Pet-Owners. A total of 295 of the 312 participants (94.5%) reported owning a pet at some point during their life. A similar percentage of male (96.1%) and female (93.0%) students reported owning a pet, \( X^2(N = 312) = 1.42, p = .23 \). A 2 (pet
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ownership) x 2 (gender) MANOVA contrasted scores on the HGSHS:A, TAS, DES and the DES factors. Interaction and gender effects were not significant. Pet owners scored similarly to non-pet owners across the measures with the exception of the TAS. Owners of pets (M = 17.94, SD = 6.63) scored higher on the TAS than those who never owned a pet (M = 12.82, SD = 5.13), F(1, 308) = 8.38 p < .01.

Findings from Analyses of Pet Owners

The remaining analyses involved the n = 295 individuals who reported owning a pet.

Age and length of time owning a pet by gender. We first examined whether our male and female participants differed in age or in the number of years they reported owning their pet. No differences were found on either variable. Our sample of pet owners reported owning their pets for an average of M = 12.57 (SD = 6.97) years.

Mean scores on the CABS and HGSHS:A across the testing contexts. Because participants’ age correlated with scores on the CABS and the HGSHS:A and because the number of years owning a pet was associated with CABS scores (see Table 1), we contrasted scores on the CABS and the HGSHS:A in a 2 (gender) x 3 (testing context) MANCOVA, using age and years owning a pet as covariates. No interactions or main effects of context were observed. Male and female participants scored similarly on the HGSHS:A across the three testing contexts (M overall = 5.96, SD = 3.08). Female pet owners (M = 27.52, SD = 7.02) scored higher on the CABS relative to male pet owners (M = 24.62, SD = 5.99) across all testing conditions, F(1, 287) = 12.28, p < .001.

Predicting CABS scores from participants’ age, gender; HGSHS:A scores by testing context. Simple correlation values between all pairs of variables are shown in Table 1 and variable means and standard deviations are listed in Table 2. The overall correlation between the HGSHS:A and the CABS was non-significant (r = .06). When broken down by gender, we obtained a significant correlation between the HGSHS:A and the CABS for our female participants (r = .18, p < .05) but not for our male participants (r = -.08). The difference between these correlation coefficients was significant, z = 2.23, p < .05. Table 3 lists the correlations between our measures and the CABS by testing context and gender.

In order to explore whether hypnotizability scores predicted animal attachment when participants’ age, gender, years owning their pet, and testing context were simultaneously considered, we conducted a series of stepwise regression analyses. To examine the potential moderating effect of the testing context, we created two orthogonal contrasts. We first contrasted the same-context, subtle link and the same-context, explicit link conditions. Second, we contrasted both of the same-context conditions with the different-context condition. We included all possible interaction terms involving our predictor variables.

For our female participants, we obtained the following model: CABS females = 23.260 + .023 (age * HGSHS:A) + .005 (age * years owning pet). The R^2 value of .104 (adjusted R^2 = .098) was significant, F(2, 292) = 16.94, p < .001. The model for male participants was: CABS males = 20.278 - 2.643 (male) + .295 (age) + .015 (years owning pet * HGSHS:A). The R^2 value of .103 (adjusted R^2 = .094) was significant, F(3, 291) = 11.12, p < .001.

Including the TAS, and DES factor scores as predictors of CABS scores. Recall that there were only two testing conditions involving the TAS, DES, and the CABS: participants completed the TAS and the DES either in the same testing session that they completed the CABS or they completed the TAS and DES in a different session than when they completed the CABS. The same context correlations between the CABS and the TAS, DES, and DES factors were more strongly positive than the corresponding correlations obtained from the different context conditions (see Table 3). The magnitude of the differences between same and different context correlations was significant for the TAS, DES, DES factor 1 and DES factor 2 (zs ranged from 1.72 to 2.69, all ps < .05, one tail), and in the predicted direction for DES factor 3.
Table 1: Correlations Among Variables Across Testing Contexts and Gender

<table>
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<tr>
<th></th>
<th>Age</th>
<th>Years Own Pet</th>
<th>Gender (female)</th>
<th>HGSHS:A</th>
<th>TAS</th>
<th>DES Factor 1</th>
<th>DES Factor 2</th>
<th>DES Factor 3</th>
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<td>-.02</td>
<td>.23**</td>
<td>.39**</td>
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<td>DES Factor 1</td>
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<td>-.04</td>
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<td>.38**</td>
<td>.83**</td>
<td>.69**</td>
<td>.64**</td>
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<td>.14**</td>
<td>.22**</td>
<td>.06</td>
<td>.22**</td>
<td>.02</td>
<td>.05</td>
<td>-.06</td>
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</table>

* p < .05; ** p < .01
Table 2: Mean and Standard Deviations Across Variables

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<tr>
<th></th>
<th>Age</th>
<th>Own Pet</th>
<th>HGS:SHA</th>
<th>TAS</th>
<th>DES</th>
<th>DES Factor 1</th>
<th>DES Factor 2</th>
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<td>5.96</td>
<td>17.94</td>
<td>19.27</td>
<td>30.00</td>
<td>12.50</td>
<td>11.03</td>
<td>26.07</td>
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Study N = 295 (n_females = 147; n_males = 148).

Table 3: Correlation Between the TAS, DES, DES factors, HGS:SHA and the CABS by Testing Context and Gender

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<th>Male</th>
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<tr>
<td>Female</td>
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<td>.22*</td>
<td>.29**</td>
<td>.12</td>
<td>.10</td>
<td>.09</td>
<td>.26**</td>
<td>.18**</td>
<td>.22**</td>
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<tr>
<td>Different Context</td>
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<td>-.05</td>
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Notes: For the TAS, DES and DES factors, Same Context n = 183 (n_females = 93; n_males = 90); Different Context n = 112 (n_females = 54; n_males = 58); Across Context N = 295 (n_females = 147; n_males = 148). For the HGS:SHA, Same Context Explicit n = 112 (n_females = 54; n_males = 58); Same Context Subtle n = 123 (n_females = 62; n_males = 61); Different Context n = 60 (n_females = 31; n_males = 29); and Across Contexts N = 295 (n_females = 147; n_males = 148). *p < .05; **p < .01.
We performed a series of stepwise regression analyses to explore whether scores on the TAS or the DES factors predicted CABS scores. We included the testing context (i.e., same or different) and gender as potential moderating variables. Given that the previous analyses showed that the testing context did not moderate the relation between the HGSHS: A and the CABS, we included HGSHS: A scores as a predictor variable without referencing it by testing context. We also included participants’ age, number of years owning their pet, and interaction terms as predictor variables.1

Both participants’ gender and the testing context moderated the association between the TAS and DES factor scores and scores on the CABS, resulting in the following four models: CABS females, same context = 23.069 + .008 (TAS) + .007 (TAS * years owning a pet). The R² value of .114 (adjusted R²=.108) was significant, F(2, 292)=18.77, p < .001. CABS males, same context = 22.455 + .010 (TAS * age) - .451 (HGSHS:A) + .017 (years owning a pet * HGSHS:A). The R² value of .138 (adjusted R²=.129) was significant, F(3, 291) =15.57, p < .001. CABS females, different contexts = 23.040 + .007 (TAS) + .007 (TAS * years owning a pet) - .167 (DES factor 2) + .111 (age). The R² value of .148 (adjusted R²=.136) was significant, F(4, 290) =12.59, p < .001. CABS males, different contexts = 22.202 + .011 (TAS * age) - .416 (HGSHS:A) + .017 (years owning a pet * HGSHS:A) - .167 (DES factor 2) + .106 (age). The R² value of .172 (adjusted R²=.158) was significant, F(5, 289) =12.01, p < .001.

Animal attachment and clinical levels of dissociation. Using Carlson et al.’s (1993) suggested DES cutoff score of 30 to indicate clinical levels of dissociation, and paralleling the high and low attachment groups created by Brown and Katcher (2001), we divided our sample into high attachment (i.e., those scoring at least one standard deviation above the mean on the CABS) and low attachment (i.e., those scoring at least one standard deviation below the mean) groups and observed the frequency of scoring in the clinical range on the DES. Within our high attachment group, 8 out of 55 (14.5%) participants scored a minimum of 30 on the DES. Within our low attachment group, 14 out of 60 (23.3%) individuals did so, X²(1, N=115)=1.43, p = .17.

Finally, we subdivided our sample of pet owners into two extreme groups consisting of individuals scoring at least 30 on the DES (n = 51) and a comparison group of individuals scoring at the lower end of the distribution of DES scores (n=51). We performed a 2 (high v. low dissociation) x 2 (gender) MANOVA on CABS scores. The interaction was not significant and the high (M = 26.23; SD = 7.01) and low (M = 25.74; SD = 6.24) dissociative groups did not differ on the CABS, Fs(1, 98) < 1.00, ps >.65.

Discussion

Nearly 95% of the participants in our sample reported that they either currently have or previously owned a pet. We found no mean differences in hypnotizability or dissociation between our sample of pet owners and non-pet owners. Pet owners did score higher than non-pet owners on our measure of absorption. Furthermore, we found that absorption scores correlated with the self-reported degree of animal attachment for both male and female participants. Our findings extend the work of Brown and Katcher (1997) who earlier reported a positive correlation between animal attachment and the TAS within a predominately female sample. The fact that pet owners in our study averaged higher TAS scores than non-pet owners is interesting and suggests that regular interaction with and strong connections to animals might encourage a tendency to become absorbed in various aspects of life (such as music), to be easily immersed in nature, to freely use one’s imagination, and to “step outside” of oneself and experience different states of being.2 Of course, speculation
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about the direction of the correlation works equally well the other way around, with the possibility that more imaginative individuals might have greater affinity for their pets. A third factor could also influence both pet attachment and absorption. Additional research is needed to replicate our finding that pet owners and non-pet owners differ on the TAS. It would be important to survey a much larger number of non-pet owners than we secured in our investigation.

We found a small positive correlation between the HGSHS:A and the CABS among our female participants. Male participants, in contrast, evidenced a trivially weak negative correlation between these two measures. Not surprisingly, participants’ age and the number of years they reported owning a pet correlated with one another, and both of these variables were associated with animal attachment. When we examined all of these variables simultaneously, each of them contributed to the prediction of CABS scores. The amount of variance explained, however, was quite small. By including participants’ age, gender, years owning their pet, and scores on the HGSHS:A, we could account for approximately 10% of the variance in pet attachment scores.

The inclusion of TAS and DES factor scores helped explain a slightly greater amount of the variance in CABS scores. Across the four regression equations generated for male and female participants and same and different testing contexts, we captured between 11 and 16% of the variance in animal attachment scores. In each model, absorption scores and years owning a pet surfaced as important predictors of animal attachment. For our female participants, HGSHS:A scores did not uniquely contribute to the prediction of CABS scores when the TAS was included. For males, HGSHS:A scores were retained in the regression equation with higher hypnotizability scores being associated with lower animal attachment scores. Across the different context equations, the second DES factor produced a significant negative beta weight for both male and female participants.

Correlations between the CABS and the TAS and the DES factors were affected by the testing context. As we predicted, the same context correlations were more strongly positive than the different context correlations. Scores on the TAS proved to be the best predictor of companion animal bonding scores. The practicality of TAS scores to predict CABS scores, however, appears to rest on the two scales being administered in the same testing context. The context manipulation also appeared to affect the pattern of correlations across the DES factor scores. Interestingly, the pattern of correlations was nearly uniformly negative between the DES factors and the CABS when the two scales were administered in different contexts. When the two scales were completed in the same testing context, the correlations were weakly positive. Surprisingly, we did not find any interpretable pattern of correlations between the HGSHS:A and the CABS across our context manipulation. Pet owners who were told that previous research had linked pet ownership with hypnotic responsiveness were not more responsive to HGSHS:A suggestions relative to those not provided this information. Regardless of the testing condition, male participants showed a negative association between hypnotizability scores and animal bonding whereas females showed a positive association.

Our study did not replicate Brown and Katcher’s (1997, 2001) finding that pet attachment is positively linked with dissociation. Whereas they found small to moderate correlations between animal attachment and the DES and each of the DES factors, we obtained non-significant correlations between the DES, DES factors 1 and 3, and the CABS. Furthermore, we obtained significant negative correlations between DES factor 2 and scores on the CABS when the scales were administered in different sessions. Dissimilar to the findings by Brown and Katcher (2001), we found that individuals at the extreme ends of the animal bonding scale did not meaningfully differ in the likelihood of scoring within the clinical range on the DES (i.e., greater than 30). Furthermore, we found that individuals with elevated DES scores were not more attached to their pets relative to those who scored at the lower end of the DES distribution.
As reported earlier, Brown and Katcher’s samples consisted of 24% and 100% female veterinary students (1997, 2001, respectively). Given that veterinary students tend to score much higher on the DES than non-veterinary students (Brown & Katcher, 2001), the positive correlations they found between dissociation and animal attachment might be unique to this population. It is also noteworthy that Brown and Katcher (1997, 2001) used the Pet Attachment Questionnaire whereas we utilized the Companion Animal Bonding Scale. Although there are many similarities between the two scales, including the content area and the total number of items, there may be important differences in how each scale intercorrelates with other inventories. Given the disparate results concerning how both of these scales relate to the DES factors, more work needs to be done to clarify whether dissociation and animal attachment are meaningfully related within the general student population.

Among pet owners, we found that females were more strongly attached to their pets than males. This gender difference is consistent with previous research. For example, Kellert and Berry (1986) reported that females are more affectionate towards their pets and are more concerned about animal cruelty than are males. Kidd and Kidd (1985; Kidd & Kidd, 1989) reported that girls express greater love for their pets than boys, and Brown, Richards, and Wilson (1996) reported that girls scored higher on the CABS than boys. While our results are consistent with the hypothesis that females are more strongly attached to their animal pets than males, it may also be the case that females are simply more likely to disclose strong attachments on a survey instrument such as the CABS.

Our study should be viewed as a preliminary investigation of hypnotizability, context effects, and animal attachment, and there are several limitations to our investigation. We did not alter the order of scale completion across testing conditions. We collapsed across our three testing conditions examining the HGSHS:A and the CABS to create two context conditions involving the completion of the TAS, DES, and the CABS. As noted earlier, future research needs to secure a much larger sample of non-pet owners to meaningfully contrast potential differences between pet-owners and non-pet owners. Future research might also employ an experiential measure of imagination involving animals. Researchers could ask pet-owners and non-pet owners to imagine that they were interacting with an animal and then report on how life-like they would rate the experience. Imagination trials involving hypnosis could be added. It might also prove fruitful to sample young children given their tendency to be both highly imaginative and greatly interested in animals.

In summary, there does appear to be some connection between the HGSHS:A, TAS, DES and animal attachment as measured by the CABS. However, the associations are small, sometimes vary by gender, and appear to be affected by whether the scales are completed in the same session or not. Given the similarity of the correlation between TAS and CABS scores in our study and that reported by Brown and Katcher (1997), the association between absorption and animal attachment appears robust. However, we found that the association is not independent of the testing context. Although we found some evidence that the HGSHS:A and the DES factors are linked with the CABS, we are less confident about the validity of these findings. First, we are not aware of prior research examining animal attachment and hypnotizability. Second, the correlations between the HGSHS:A and the DES factors and the CABS were generally quite small. Third, results from our examination of a possible link between animal attachment and DES total scale scores or individual DES factor scores were inconsistent with that reported by Brown and Katcher (1997, 2001). For all these reasons, replication work is necessary to better clarify what role, if any, hypnotizability and dissociation play in animal attachment.
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Footnotes

1In order to keep the number of interactions manageable, we excluded interactions involving more than one scale. All possible two-, three-, four-, and five-way interactions involving age, gender, context, years owning a pet, and each of the scales (i.e., the HGSHS:A, TAS, DES factors) were considered.

2The described attributes parallel items on the TAS.

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