

## What's in it for the Companion Animal? Pet Attachment and College Students' Behaviors Toward Pets

Elsie R. Shore, Deanna K. Douglas, and Michelle L. Riley

*Department of Psychology  
Wichita State University*

Research on the human–nonhuman animal bond has focused primarily on its advantages to the human. The purpose of this study is to investigate behaviors of caregivers (owners) of companion animals (pets) and to examine the relationship between such behaviors and scores on a pet attachment scale. Participants were 501 largely nontraditional (older, married, employed full-time) college students living with a pet dog or cat. The study categorized owner behaviors as essential, standard, enriched, or luxury care. Almost all participants reported engaging in essential care behaviors, with numbers declining from category to category. Pet attachment scores appeared related to standard and enriched care behaviors but not to essential care. Too few participants reported doing luxury care behaviors to link them to attachment. The results suggest that even pet owners reporting low attachment provide beneficial care and attention to their pets and that pet attachment may be of limited use when looking at the benefit of the human–animal bond to the companion animal.

The American Veterinary Medical Association defines the *human–nonhuman animal bond* as “a mutually beneficial and dynamic relationship between people and other animals that is influenced by behaviors that are essential to the health and well being of both” (Wollrab, 1998, p. 1675). Most of the research in this area has focused on the benefits of the relationship to humans. Studies have linked companion animal guardianship (pet ownership) with increased survival after heart attack (Friedmann, 1995; Friedmann, Katcher, Lynch, & Thomas, 1980; Friedmann, Thomas, & Eddy, 2000) and decreased risk of cardiovascular disease (Anderson, Reid, & Jennings, 1992). Experimental studies have found

that time spent in the presence of, or petting, a dog resulted in reduced blood pressure, pulse, and respiration, although time spent talking with humans produced higher blood pressure and heart rates (Baun, 1984; Friedmann, 1979; Vormbrock & Grossberg, 1988). Other studies (Budge, Spicer, & St. George, 1998; Poresky & Hendrix, 1990; Zasloff & Kidd, 1994) have shown pet ownership to have psychological and social benefits.

Fewer studies, however, have looked at how the human–animal bond benefits the animal. Several early studies investigated the effect of human presence on dogs used in laboratory research. Gantt, Newton, Royer, and Stephens (1966) found that dogs exhibited increased heart rates when a person entered the room without interacting with the dog but decreased heart rates when being petted. Petting also reduced heart rate in response to the administration of shock (Anderson & Gantt, 1966; Lynch & McCarthy, 1967).

More recently, researchers have turned their attentions to companion animals. Chumley, Gorski, Saxton, Granger, and New (1993) assessed attachment to a favorite pet among military service members due to be transferred within 6 months. Although cost, possibility of quarantine, and housing restrictions at the new posting were influential factors, posttransfer follow-up data also yielded a significant association between level of attachment and whether the animal moved with the family. Heath, Beck, Kass, and Glickman (2001) found a link between weak bonding and failure to take pets along when evacuating an area in the face of an impending flood; the same occurred after a train derailment produced the threat of explosions (Heath, Voeks, & Glickman, 2001).

These studies indicated that strength of attachment plays a role in the pet's future, but two studies suggested otherwise. Shore, Petersen, and Douglas (2003) found that people who had relinquished a pet to an animal shelter because they were moving tended to score as highly attached to the pet they had relinquished. Many expressed considerable sadness over their actions, which often were virtually unavoidable because of financial and other external factors. Similarly, DiGiacomo, Arluke, and Patronek (1998) found the decision to relinquish was not made lightly and tended to involve considerable thought and emotion; nonetheless, the pets were given up.

The mixed findings regarding the relationship between attachment and pet owner behavior reinforce Kafer, Lago, Wamboldt, and Harrington's (1992) statement that "[t]he promising start in assessing attitudes will mean relatively little in the long run if it cannot be shown to be associated with important differences in personal behavior" (p. 104). At an early conference on the human–animal bond, it was recommended that researchers expand their focus to include benefits to animals and that behavioral measures of the bond be used (Zeglen, Lee, & Brudvik, 1984). This study seeks to address these issues. One goal is to compile and categorize pet owner behaviors, specifically those thought to be of benefit to the animal. Another is to consider the utility of attachment scales by investigating the relation-

ship between one such scale and concrete behaviors made on behalf of a companion animal.

## METHOD

### Participants and Procedures

Participants were undergraduate students at Wichita State University, Wichita, Kansas. The university is located in an ethnically diverse metropolitan area and attracts a largely nontraditional (older, married, employed full-time) student body. The majority of data collection was done during the Summer 2003 session, which increased the proportion of nontraditional students in the sample.

Research team members visited a variety of classes from which professors permitted them to recruit volunteers. Surveys were administered on site. Only those with a dog or cat living with them were eligible to participate. Students in psychology classes received extra credit for participation.

### Instrument

Participants were asked to think of their pet; if they had more than one, they were to choose one and think only of that one when completing the survey. Following initial questions about the target animal (canine or feline, age, sex) were 85 questions on pet owners' behaviors, with separate sections for behaviors unique to dogs and to cats. The survey also included the Lexington Attachment to Pets Scale (LAPS; Johnson, Garrity, & Stallones, 1992), a semantic differential scale (Chumley et al., 1993) asking participants to rate their attachment to the target animal, and demographic questions. Participants again were asked to think about the target pet when completing both the LAPS and the semantic differential scale. The demographics section included questions about the respondent's gender, age, race-ethnicity, income, and number of children and pets in the home.

A research team comprised of the authors and three undergraduate students developed the 85 pet owner behavior questions. We sought to ask pet owners about activities that contribute to the well-being of dogs and cats. As a first step, we developed eight categories characteristic of such benefits:

1. Food
2. Shelter
3. Health care (veterinary and home)
4. Mental stimulation/play

5. Contact with humans (lack of isolation)
6. Safety
7. Freedom from fear, abuse
8. Other (e.g., willingness to seek advice regarding the pet)

Using these categories as guides, we generated questions through brainstorming and reviewing the literature. The questions chosen for the survey represent research team members' consensus regarding potentially beneficial behaviors done with, or for, companion animals.

## RESULTS

We obtained surveys from 534 pet owners; only 501 surveys were usable. Because of a clerical error, 27 surveys were missing several pages and were discarded; 6 surveys were incomplete or incorrectly completed (failing to choose a target pet). The majority of participants (354: 70.8%) were female. The average age was 25.6 years, with a range from 16 to 60 years old; 24.2% were 30 years or older. Race–ethnicity percentages were as follows:

1. White, non-Hispanic, 78.2%
2. African American, 6.6%
3. Hispanic American, 5.4%
4. Asian American, 4.8%
5. Native American, 1.0%
6. Other, 4.0%

In addition to attending college, most students were employed full-time (30.1%) or part-time (42.1%). Annual household income (Figure 1) was distributed relatively evenly across the 7 ranges provided, with a higher proportion in the highest income group. As might be expected in a sample that includes students still living with their parents, 77 (15.4%) did not know their household income.

Dogs or pups were the target animals in 350 (69.9%) of the surveys. Target animals were divided evenly between males ( $n = 251$ ) and females ( $n = 248$ ). Ages ranged from 2 months to 18 years and the average pet age was 4.81 years ( $SD = 48.57$ ). Slightly more than 70% were spayed or neutered (81.3% of cats; 66.1% of dogs), which is higher than the Regional Shelter Study's findings (50.8% of cats; 42.8% of dogs) for animals relinquished to shelters (Salman et al., 1998).

Responses to the LAPS were correlated highly with the semantic differential attachment scale ( $r = .76, p < .0001$ ). The LAPS was chosen for comparison with owner behaviors, primarily because of its "excellent psychometric properties" (Johnson et al., 1992, p. 160) that include a Cronbach's alpha of .928. LAPS scores

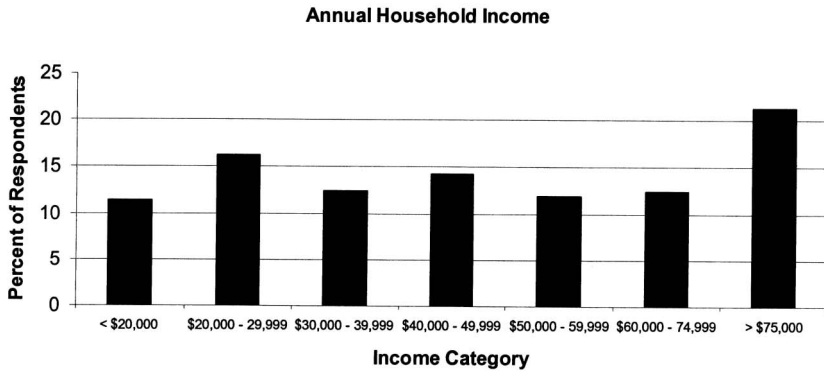


FIGURE 1 Annual household income.

can range from 0 to 69 points, with higher scores indicating greater attachment. The mean in this sample was 47.21 ( $SD = 13.54$ ; range 2 to 69). Scores were grouped as low, moderate, or high attachment, with one third of the sample in each group. Specifically, 164 participants (33.1%) scored between 2 and 41 points; 164 (33.1%) scored between 42 and 55 points; and 167 (33.7%) scored between 56 and 69 points.

Eighteen of the 85 owner behavior questions were discarded, primarily because of unclear wording or difficulty in interpretation. To organize the 67 remaining questions, the team defined 4 categories of pet care:

1. Essential care (owner provides for the basic physical needs of the pet; 9 items)
2. Standard care (owner provides care and attention usually associated with pet ownership; 18 items)
3. Enriched care (owner provides attention, activities, and/or resources that create a more stimulating environment for the pet; 22 items)
4. Luxury care (owner provides indulgences that may be superfluous, extravagant, or expensive; 18 items)

Team members assigned each behavior question to a group, compared categorizations, and developed consensus on the final assignments.

Tables 1 through 4 present, by LAPS attachment category, the prevalence of pet owner behaviors at each level of care. Items are arranged in descending order of prevalence within the high attachment group. The large number of items and accompanying increased likelihood of Type 1 errors precluded statistical analysis of item responses by attachment level.

TABLE 1  
Prevalence of Essential Care Owner Behaviors by Attachment Level

<i>Essential Care Survey Items</i>	<i>Low</i>		<i>Moderate</i>		<i>High</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
The pet is fed dog/cat food	163	99.4	162	98.8	165	98.8
When prime caregiver is ill, someone cares for the pet	162	98.8	159	98.8	164	98.8
Pet has access to water at all times	161	98.8	159	99.4	163	98.2
In bad weather, pet is protected	83	90.2	64	91.4	41	97.6
In very cold or hot weather, pet is protected	81	91.0	65	95.6	41	97.6
The pet acts differently when sick	133	84.2	142	87.7	162	97.0
We have a veterinarian	153	93.9	155	94.5	160	96.4
When everyone is away from home for more than 1 day, the pet is cared for	126	84.6	129	90.2	132	89.2
The pet is current on its rabies shot	130	79.8	134	82.2	148	89.2

TABLE 2  
Prevalence of Standard Care Owner Behaviors by Attachment Level

<i>Standard Care Survey Items</i>	<i>Low</i>		<i>Moderate</i>		<i>High</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Someone pets/scratches the pet	153	93.9	155	95.1	156	94.0
When family is home, pet is with them most of the time	121	74.2	134	81.7	153	92.2
In the last year pet has visited a vet	139	85.3	145	88.4	152	91.6
Dog only: When outside, dog is <i>not</i> usually in a dog run	145	91.2	133	84.7	144	90.6
Someone plays with pet every day	126	77.3	137	83.5	151	90.4
The pet lives in the house	105	64.4	121	73.8	148	89.7
Dog only: Receives heartworm prevention medication	96	85.0	92	82.9	103	88.8
Dog only: The dog is licensed	97	85.1	94	84.7	102	87.9
When outside the pet is not kept on a chain	139	87.4	138	87.3	138	86.8
The pet spends most of its time inside, wherever it wants to go	92	58.6	110	69.2	134	82.2
The pet is spayed/neutered	114	69.9	111	67.7	122	73.9
The pet's nails are trimmed	79	48.5	91	55.5	120	72.3
The pet receives medication to prevent fleas and ticks	103	63.2	110	67.1	118	71.1
Dog only: Our yard is completely fenced in	73	63.5	80	70.2	78	67.2
The pet wears identification tags	94	57.3	102	62.6	108	65.1
I/we have changed our home or yard to make it safer	70	42.7	88	53.7	92	55.4
Household objects are used as toys	62	38.0	80	49.4	71	42.5
Dog only: The dog has an outside doghouse	56	49.1	46	40.7	39	33.9

TABLE 3  
Prevalence of Enriched Care Owner Behaviors by Attachment Level

<i>Enriched Care Survey Items</i>	<i>Low</i>		<i>Moderate</i>		<i>High</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Pet is welcome to come and go in most areas of the home	122	74.8	139	84.8	159	95.2
The pet is included in family events	104	63.4	129	78.7	159	95.2
The pet has its own toys	128	78.5	138	84.1	158	94.6
The pet stays at someone’s side, often or sometimes	138	84.7	150	91.5	156	94.0
Someone buys toys for the pet	127	77.9	138	84.7	156	93.4
When I/we go to sleep, the pet sleeps in the house	112	70.4	124	76.1	153	92.7
In a 24-hr day, the pet is outside fewer than 4 hr	117	72.2	125	77.2	150	92.0
Dog only: When someone exercises, the dog goes along	82	71.9	85	75.2	101	87.1
The pet gets treats	117	71.3	133	81.1	138	83.1
The pet is alone fewer than 8 hr a day	113	69.8	125	76.7	136	81.9
The pet is bathed	130	79.8	136	82.9	132	79.5
I/we have looked for advice about the pet	76	46.9	104	63.4	125	74.9
Cat only: The cat gets catnip	26	53.1	39	78.0	38	74.5
The pet stays on someone’s lap, often or sometimes	76	46.6	115	70.1	120	72.7
Dog only: The dog is walked every day, a few times a week	54	47.4	68	60.7	81	69.8
The pet usually eats premium/special food	80	50.0	85	52.1	114	68.7
The pet gets scraps from the table	94	57.3	102	63.0	112	67.5
The pet has its own pet bed	65	39.6	77	47.0	107	64.5
The pet has received training	77	47.2	90	55.2	107	64.1
When I/we travel the pet always, sometimes goes along	55	33.5	76	46.6	106	63.5
When planning a trip we look for pet-friendly accommodations	46	28.4	70	42.9	103	62.4
Cat only: The cat has scratching posts	27	56.3	35	71.4	31	60.8

Extremely high numbers of respondents—in some cases nearly all—reported engaging in the behaviors designated as essential care. At this level of care, differences based on reported degree of attachment were minimal or nonexistent. Numbers of respondents endorsing the behaviors declined in a consistent fashion from level to level. These declines also occurred within each attachment category but the differences between attachment categories tended to widen such that fewer low attached pet owners reported standard and enriched care behaviors than did moderate or highly attached owners. The same held for the luxury

TABLE 4  
Prevalence of Luxury Care Owner Behaviors by Attachment Level

<i>Luxury Care Survey Items</i>	<i>Low</i>		<i>Moderate</i>		<i>High</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
The pet receives holiday gifts	91	55.9	110	67.5	144	86.2
Someone knows pet first aid	60	40.5	85	51.8	90	53.9
I/we celebrate the pet's birthday	28	17.2	36	22.2	81	48.8
Cat only: The cat has cat furniture	20	40.8	26	52.0	23	45.1
Someone makes toys for the pet	30	18.4	37	22.6	57	34.1
The pet receives dental care	25	15.3	53	32.3	56	33.9
Dog only: The dog has problem solving toys	14	12.3	25	22.3	36	31.3
Dog only: The dog does agility work	13	11.4	27	24.3	35	30.4
The pet has clothing	10	6.1	26	15.9	50	29.9
The pet is taken to events for pets	22	13.4	14	8.6	35	21.0
The pet is in someone's will	9	5.5	20	12.5	35	21.0
The pet has a microchip	3	1.8	7	4.3	15	9.0
There is a pet door	16	9.9	14	8.5	13	7.8
Dog only: The dog goes to day care	8	7.0	12	10.7	9	7.8
I/we have animal health insurance	4	2.5	11	6.9	11	6.7
I/we own videos to entertain the pet	2	1.2	4	2.4	10	6.0
Dog only: The dog is a therapy dog	3	2.6	3	2.7	2	1.7
Dog only: I/we have invisible fencing	3	1.8	5	3.0	2	1.2

care level but these data are limited by a large proportion of these behaviors being reported by less than 10% of respondents in any attachment category.

The one exception to the above is that more low attachment dog owners reported having doghouses than did moderate or high attachment owners (Table 2). This seeming anomaly may be explained by the fact that fewer low attachment owners reported that their dogs live in the house. Dogs not kept in the home were disadvantaged in some ways (i.e., fewer owners walked outdoor dogs, fewer outdoor dogs received Kong or other challenging toys). On a number of other variables, however, there were minor or no differences between house dogs and outside dogs. Similar percentages received heartworm preventive medication (81.1% outside vs. 87.9% indoor), flea-tick medication (76.3% vs. 79.6%), baths (91.8% vs. 98.4%), and joined their owners when the latter exercised (75.8% vs. 79.2%).

## DISCUSSION

For most cats and dogs, being in a home obviously is better than being at large or in an animal shelter. This study is an attempt to go beyond that, looking more closely at the benefits of being with a human or human family, as defined by an

array of specific pet owner behaviors. Another goal is to investigate the relationship between self-reported attachment to a pet and prevalence of potentially beneficial behaviors on behalf of that animal.

Participants were college students living in a large metropolitan area in the Midwestern United States. Their age, income, racial–ethnic diversity, and other demographic characteristics distinguish them from both traditional college students and noncollege populations. Thus, caution should be used when attempting to generalize from this volunteer sample to other populations. In addition, as with all self-report data, we cannot know whether the respondents actually engaged in the reported behaviors or whether the desire to appear to be responsible and loving pet owners influenced behaviors and attachment scores.

We attempted to compile an exhaustive list of potentially beneficial pet owner behaviors. Not surprisingly, we did not attain this ideal. One topic that needs attention is discipline. Because such behaviors can be situation—and animal—specific, it is difficult to create questions whose responses can be clearly interpreted. Nonetheless, owner actions when training or disciplining a pet can have important consequences for the physical and psychological well-being of the animal.

The lengthy survey we developed provided the opportunity to ask pet owners about specific behaviors and to develop a picture of the types and prevalence of activities and resources owners provide to their pets. In addition to obtaining information about this group of pet owners, the list highlights the range of behaviors involved in caring for dogs and cats. It is noteworthy that the majority of the 501 survey respondents did most of the activities.

The definition of four levels of care helped us organize the 67 behavioral questions. The assignment of an item to a particular level can be debated; however, that the prevalence of the behaviors generally declined moving from essential to luxury seems to validate the groupings. It is hoped that the catalog of behaviors, as well as the definition of four levels of care, can serve as a basis for further attempts to include behavioral items in research on the human–nonhuman animal bond.

The comparison of attachment and owner behaviors suggests that attachment scales are related to behavior but that the relationship is limited. Respondents who indicated they were not very attached to the target pet were as likely to provide basic care, and a number of other beneficial attentions, as were moderately or highly attached pet owners. Attachment level was more discriminative at the less basic levels of care, with more highly attached pet owners providing their pets with a richer environment in terms of opportunities to interact with their human family and the provision of material resources. Thus, it might be inadvisable to use scores on attachment scales as surrogate measures of respondents' adequacy as pet owners or to assume that low attachment means poor care (Chumley et al., 1993).

Animal shelter personnel and other animal welfare workers often express just this kind of concern about potential adopters and debates about adoption standards are relatively common in the field. Our results suggest that animal shelter personnel can

be more confident when placing animals in new homes. In our sample, even pet owners willing to state that they were not very attached to their dog or cat provided food, medical care, and protection as well as attention and other benefits that make for safe and secure lives and satisfactory human–animal relationships.

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