VOLUME 28, ISSUE 4 PP. 673-683 REPRINTS AVAILABLE DIRECTLY FROM THE PUBLISHERS PHOTOCOPYING PERMITTED BY LICENSE ONLY © ISAZ 2015 PRINTED IN THE UK

The Roles of Pet Dogs and Cats in Human Courtship and Dating

Peter B. Gray^{*†}, Shelly L. Volsche^{*}, Justin R. Garcia^{†‡} and Helen E. Fisher^{†§}

^{*}Department of Anthropology, University of Nevada, Las Vegas, Nevada, USA

[†]The Kinsey Institute for Research in Sex, Gender, and Reproduction, Indiana University, Bloomington, Indiana, USA [‡]Department of Gender Studies, Indiana University, Bloomington, Indiana, USA

[§]Department of Anthropology, Rutgers University, New Jersey, USA

ABSTRACT What role do companion animals play in the dating lives of single adults? As dogs and cats are increasingly viewed as family members, a person's pets may wield significant influence in partner choice. Here, we provide descriptive quantitative data on the role pets play in mate appraisal and mate selection; we also test two hypotheses regarding the role of pets in single Americans' dating lives. We hypothesized that single women will place more value on a how a potential mate interacts with their pet, than will single men. We also hypothesized that dogs will serve more prominent roles as "social tools" in the dating arena than cats, given that dogs are more social and dogs require more constant care. Thus, dogs may be a better measure of a potential mate's caregiving capacity. Data were obtained from a 2014 survey sent to a random selection of people in the US registered on the online dating site Match.com who had indicated pet information in their dating profiles. A sample of 1,210 individuals responded, 61% of whom were women. Dogs and cats were the most common pets for both sexes. In support of our first hypothesis, on eight of 11 dependent variables (such as whether one has ever been attracted to someone because of a pet), women were more discriminating of a potential partner's associations with pets than were men. Consistent with our second hypothesis, dogs served more commonly as social barometers in the dating arena than cats did, with respect to nine of 11 dependent variables (such as whether one would date someone because of a pet). We discuss the findings with respect to changing family profiles, including lower fertility and expanded roles of companion animals as extended kin. We conclude with the limitations of this study and suggestions for future research.

Keywords: cats, companion animals, dating, dogs, pets, singles

Address for correspondence: Peter B. Gray, Ph.D., Department of Anthropology, University of Nevada, Las Vegas, 4505 S. Maryland Parkway, Las Vegas, NV 81954-5003, USA. E-mail: peter.gray@unlv.edu.



A variety of factors guide the dating choices of single adults. In our research, we considered the roles played by pet dogs (Canis lupus familiaris) and pet cats (Felis catus) in the dating lives of singles, using a large sample of American singles recruited from a popular online dating site. The focus on dating and pets in the current research is timely and both theoretically and empirically relevant for reasons we expand on here.

Domesticated dogs and cats that are kept as household pets are increasingly viewed as extended kin (Herzog 2010; Serpell and Paul 2011). Research among American (Blouin 2013) and Israeli (Shir-Vertesh 2012) adults, for example, shows that a growing fraction of pet owners describe their dog or cat as a "family member." Moreover, these extended family relationships manifest in a variety of ways. The American Pet Products Association (APPA) estimates that Americans spent about \$58 billion USD on their pets in 2014, with much of that devoted to dog and cat expenses. As the APPA also notes, more households in the US keep dogs and cats than any other type of companion animal, indicating the importance of these animals in people's lives. In terms of material investment, people are buying more expensive pet foods and utilizing other pet-related services, such as doggy day care and pet insurance, which also speaks to the value of these nonhuman family members. Pet ownership may also have direct effects on human biology. Epidemiological and physiological research shows that pet-keeping is associated with some positive health benefits among owners (reviewed in Wells, 2007). Further, several studies have shown that among adults interactions with a pet dog can result in increases in oxytocin and changes in other hormone levels (e.g., Odendaal and Meinties 2003; Miller et al. 2009).

Some research addresses the potential roles of pets, particularly dogs, in singles' courtship and dating lives. Several studies indicate that dogs can facilitate social interactions, though the effects are contingent upon factors such as the breed of dog and the sex of the person (McNicholas and Collis 2000). For example, Wells (2004) found that a single woman standing in public with a puppy or adult Golden Retriever elicited more approaches and conversations than did the same woman standing with an adult Rottweiler, stuffed teddy bear, or potted plant; other women and individuals who were alone (rather than in a dyad) were also more likely to approach her. Further, in another study a man with a dog was more likely to obtain an unfamiliar woman's phone number during a meeting in a public space than the same man without a dog (Gueguen and Ciccotti 2008). In yet another study, women evaluated men depicted in vignettes (short stories) as more attractive if these men were described as dog owners (Tifferet et al. 2013). Anecdotal data also suggest that an adult's perception of pet dogs and cats (e.g., particularly whether they are allergic to these creatures or do not like to take care of animals) may also play a role in mate choice and partnership formation.

While pet dogs and cats play expanding roles in family and dating life, these dynamics can be situated within broader observations of animal domestication, cross-cultural human-animal interactions, and data on sex differences in human social behavior. Dogs were the first species known to be domesticated, between approximately 30,000 and 15,000 years ago (Zeder et al. 2006; Clutton-Brock 2012). How humans interact with dogs varies cross-culturally and historically, with people of many societies looking upon them as unclean and serving in protection and hunting, rather than as companions (Shipman 2010; Gray and Young 2011; Hurn 2012). In the US, views of pet dogs vary (Coppinger and Coppinger 2001; Bradshaw 2011); for example, decreased physical punishment of dogs, indoor sleeping arrangements for dogs, and targeted foods for dogs have gained prominence among many owners during recent decades.

Evidence suggests cats were domesticated thousands of years ago, likely by increasingly consuming rodents around human settlements (Clutton-Brock 2012; Bradshaw 2013). Cats, too, are viewed variably in cross-cultural and historic perspective, with people of many societies most favorably viewing them for their vermin-removal talents rather than as family companions (Gray and Young 2011). Domesticated cats are generally recognized as being less social than domesticated dogs, and as requiring less regular maintenance than dogs (e.g., fewer human-pet formal exercise routines). Moreover, cats generally provide a different socio-emotional relationship with their owners than do dogs (see Serpell 1996; Zasloff 1996; Bradshaw 2013). Cat social cognition and behavior, such as attentiveness to human visual cues, appears to have been shaped less by co-evolutionary pressures with humans than dog social cognition and behavior (Miklosi et al. 2005; Bradshaw 2013).

A large theoretical and empirical literature addresses (heterosexual) sex differences in human social behavior, including mate preference and mate choice, family formation strategies, and parental care (Cartwright 2008; Dixson 2009; Geary 2010). Some of the insights from this literature helped inform the current study's focus on the role of pet dogs and cats in singles' dating lives. Females, including humans, have both lower potential and actual reproductive rates than males (see Trivers 1972; Clutton-Brock and Parker 1992; Kokko and Jennions 2008: Grav 2013). Put in terms of evolutionary and life history theory, females allocate a higher proportion of their reproductive effort to parenting while males expend more energy on mating (Fisher 1992; Gray and Anderson 2010; Low 2015). These contrasts are lessened in humans compared with most other mammals, however, because humans typically form long-term socio-sexual partnerships which include paternal care (Gray and Garcia 2013). Regardless, women tend to be more discerning in their mate preferences than men; women expend considerable energy evaluating a male partner's capacity to provide resources to her and her offspring, including his emotional commitment and capacity to contribute valued resources (Buss 1989; Schmitt 2005; Gray and Garcia 2013). Men tend to place higher value on cues of female fecundity and fertility, instead, with greater concern over cues indicative of sexual access relative to a woman's capacity to contribute resources (Buss 1989; Schmitt 2005; Gray and Garcia 2013). Across human societies, mothers, on average, provide more direct childcare than do fathers, and women exhibit greater ability to read facial and bodily emotional states of others (Hrdy 2009; Gray and Anderson 2010); these patterns suggest sex-specific ways in which women and men parent. In a context wherein people consider pets extended kin, one might expect these same patterns to reflect how they "parent" their dogs and cats, and the characteristics they are likely to value in potential mates who might become involved in these same animals' lives.

In our study we aimed to a) obtain descriptive data on the roles that pet dogs and cats play in single Americans' dating lives; and b) test two hypotheses concerning potential patterning in these dating and pet dynamics. We tested the hypothesis that women will show more discerning dating preferences regarding a potential partner's and one's own pet dogs and cats. We predicted that women will exhibit more sensitivity to a potential partner's treatment and keeping of pet dogs and cats with the thought that they place greater concern on the wellbeing of their existing pets, as well as the potential integration of a partner's pets into their family lives. We also tested the hypothesis that the roles of pet dogs and cats will differ in singles' dating lives. More specifically, we anticipated that more singles will express concerns over one's own or a potential partner's pet dog(s) than pet cat(s), given perceptions that cats are less social, require less attention, and are less diagnostic of a potential mate's caregiving

capacities than are dogs. We additionally tested whether or not roles of pet dogs and cats vary with the age of the owner. Older singles are less likely to live with human children, potentially giving more weight to the roles of pet dogs and cats; however, the more recent emergence of indulging and investing in dogs and cats as family members means that younger singles may be even more likely to hold such views.

Methods

As part of a collaboration with the pet supply store PetSmart, in spring 2014 a link to a voluntary online survey was sent to approximately 2,300 subscribers to the online dating site Match.com. These subscribers had identified as single, living in the US, were at least 20 years of age, and indicated in their online dating profile that they owned a pet(s). One thousand two hundred and ten (n = 1,210) singles responded. The survey consisted of 21 questions, administered through the web-based survey tool Survey Monkey (www.surveymonkey.com). All data were obtained from voluntary responses to the survey and were not drawn from participants' profiles. Profile information was only used for inclusion criteria to identify potential participants who were sent the survey link. The current study made use of this existing dataset.

Questionnaire items covered basic pet-keeping and demographic items. These included: What is your age? (response options: "20 something"; "30 something"; "40 something"; and "50+"); "What is your gender?" (response options: "Male" and "Female"); "Do you own a dog?" (response options: "Yes" or "No"); "Do you own a cat?" (response options: "Yes" or "No"); and "What pet(s) do you own? Select all that apply" (response options: "Dog," "Cat," "Bird," "Rabbit/Hamster/Guinea pig," "Reptiles/fish," "Exotic animals," and "Other"). Additional questions covered aspects of pets and dating, with specific items and responses shown in Table 1. For example, one question asked, "Would you bring your pet to a first date?" (response options: "Yes," "No," or "I don't know"). Data analyses relied on all questions that were sex-general rather than sex-specific, resulting in the exclusion of two questions. The descriptive data for those two excluded items showed men's replies to the item "If your date's pet could fit in her handbag, that is a:" (a turn-on [n = 12], a turn-off [n = 134], or neither [n = 330]); and women's replies to the question "What is the hottest pet a guy could own?" (dog [n = 500], cat [n = 80], bird [n = 2], reptiles/fish [n = 3], rabbit/hamster/guinea pig [n = 0], or exotic animals [n = 12]).

Results

Over half (60.6%) of the 1,210 respondents were women (n = 733). The respondents were of varied age groups: 149 (12.3%) were in their 20s; 189 (15.6%) were in their 30s; 288 (23.8%) were in their 40s; and 584 (48.3%) were aged 50 years or older. A statistically significantly higher percentage of women had pet cats (n = 332, 45.6%) than did men (n = 181, 38.3%) ($\chi^2 = 6.162$, df = 1, p = 0.013). A slightly higher percentage of men had pet dogs (n = 348, 73.3%) than did women (n = 513, 70.4%), but this difference was not significant. Overall, pet dogs (n = 870, 71.9%) and cats (n = 513, 42.4%) were the most commonly kept pets. Other pets owned were reptiles/fish (n = 100, 8.3%), "Other" (n = 63, 5.2%), bird (n = 52, 4.3%), rabbit/hamster/guinea pig (n = 33, 2.7%), and exotic animals (n = 11, 0.9%).

Table 1 presents responses to pet and dating questions with respect to age group and men and women. Single women and men did not differ in their likelihood of bringing a pet on a first date or on the locations where they would bring a pet to a first date. Notably, however, a small percentage (less than 10%) of both women and men said they would bring a pet to a first date. Using chi-square tests with sex (male/female) as the predictor variable and pet/dating Downloaded by [University of Nevada Las Vegas], [Peter Gray] at 10:11 09 December 2015

22 1 1 17 17 373 36 382 59 125 349 103 252 8 Q 177 ≥ Overall 342 10 612 46 313 0 15 255 472 199 4 75 36 00 5 89 ш 4 82 Ω 5 ~ 0 N 10 24 72 38 88 22 43 20 51 Σ 50+ 8 23 5 0 8 17 309 343 155 179 107 247 2 32 88 ш 7 92 17 0 0 0 N 4 83 32 83 27 88 59 22 50 Σ 40s 145 œ 0 Ø 0 4 0 4 54 100 2 09 1 39 80 - 7 ш 0 N N N Ø 9 62 4 51 24 23 4 12 0 33 Σ 30s - 1 0 0 1 1 0 0 0 10 93 10 42 8 43 8 41 ш 5 47 7 ß 4 43 10 10 43 8 9 1 22 ≥ 20s က္ကက ၈ ၀ 0 0 0 10 65 12 52 g ₽ L 17 20 32 ш Have you ever been more attracted to someone because they had a pet? *** •• Do you think a relationship could work with a "cat person"? ••• If you were bringing your pet(s) on a date, where would you go? Have you ever used a pet to attract a potential date? *** ••• Do you think a relationship could work with a "dog person"? Sex (F=Female; M=Male) Would you bring your pet to a first date? Age Group Pet-friendly restaurant Sporting event Question/Item Walking trail I don't know Dog park Other Yes 0 Z Yes Yes Yes Yes g g S g

Table 1. Sex and age-group differences in the role of pets in dating responses.

continued...

Anthrozoös

678

Downloaded by [University of Nevada Las Vegas], [Peter Gray] at 10:11 09 December 2015

Age Group		20s		30s	40s	s	50+	+	Overall	all
Question/Item Sex (F=Female; M=Male)	Ŀ	Σ	ш	Σ	Ŀ	Σ	ш	Σ	L	Σ
Would you judge your date based on how your pet(s) reacted to them? *** •••										
Yes	44	22	66	21	75	41	161	52	346	136
No	46	37	46	56	95	22	192	173	379	341
Would you judge your date based on how they reacted to your pet(s)? •••										
Yes	76	38	92	52	131	20	254	117	553	277
No	14	21	19	24	41	45	97	98	171	188
Would you date someone who didn't like pets? ●●●										
Yes	25	27	32	35	45	47	89	108	191	217
No	65	32	80	41	124	99	267	113	536	252
Have you ever used your pet as an excuse to leave a bad date early?										
Yes	15	9	16	1	19	14	39	18	89	49
No	75	52	96	99	152	101	312	205	635	424
Finding out your date adopted a pet makes them										
More attractive	70	37	75	47	109	62	221	92	475	238
Less attractive	-	0	0	0	0	-	N	4	Ю	7
None of the above	20	23	37	32	64	54	137	128	258	237
Including photos of a pet in your online dating profile is a: ** $ullet$										
Turn-on	41	14	34	17	46	21	74	33	195	85
Turn-off	ო	0	7	4	Ø	19	24	27	42	52
Neither	46	43	71	55	116	22	257	164	490	337
Do you think your date's choice in pets says a lot about their personality? $^* ullet$										
Yes	75	31	76	50	107	71	222	121	480	273
No	15	28	35	27	65	44	133	101	248	200

Table 1. Sex and age-group differences in the role of pets in dating responses ...continued

measures as outcome variables, results revealed partial support for the first hypothesis, Women reported being more likely to have been attracted to someone because he had a pet $(\chi^2 = 10.030, df = 1, p = 0.002)$. Conversely, men reported being more likely to have used a pet to obtain a date (χ^2 = 63.496, df = 1, p = 0.002). Relatively few men or women reported that a relationship could not work with a "dog person," with no sex difference in that sentiment. However, a higher fraction of women than men felt that a relationship could not work with a "cat person" ($\chi^2 = 13.628$, df = 1, $\rho < 0.005$). Compared with men, women were more likely to report judging a date based on how her pet(s) reacted to a date ($\chi^2 = 43.341$, df = 1, p < 0.005), and they were also more likely to report judging a date based on how the date reacted to her pet(s) (χ^2 = 37.302, df = 1, p < 0.005). Women were less likely to date someone who didn't like pets (χ^2 = 49.821, df = 1, p < 0.005), and they more commonly reported including photos of a pet in an online dating profile as a turn-on ($\chi^2 = 4.140$, df = 1, p = 0.042). There were no sex differences in using a pet as an excuse to leave a date early; nor were there sex differences in how attracted an individual was to a potential mate after finding out that one's date had a pet. But women were more likely to agree with the view that a date's choice in pets says a lot about that individual's personality ($\chi^2 = 7.589$, df = 1, p = 0.006).

To test the second hypothesis (that pet dog and cat owners would describe differences in their dating lives), chi-square tests were conducted for dating outcomes, with the predictor variable coded as dog owners, cat owners, or both dog and cat owners. Results revealed differences in one's dating life depending on whether they owned a dog or a cat, thus partially supporting the second hypothesis. Pet owners expressed differences in having been attracted to someone because of a pet ($\chi^2 = 8.847$, df = 2, p = 0.012), with cat owners less likely to express this sentiment than dog owners. Pet owners reported differences in having used their pet(s) to attract potential dates ($\chi^2 = 8.954$, df = 2, p = 0.011), with cat owners once again less likely to report this than other pet owners. Pet owners expressed differences in the likelihood of having a relationship with a "cat person" ($\chi^2 = 123.389$, df = 2, p < 0.001), with dog owners being less likely to develop a partnership with a "cat person." There were also differences in reported likelihood of pursuing a relationship with a "dog person" ($\chi^2 = 9.075$, df = 2, p = 0.011), with this less likely among dog owners. Pet owners professed differences in judging their dates depending on how their pets reacted to their dates ($\chi^2 = 25.505$, df = 2, p < 0.0005), with cat owners less likely to judge a potential romantic partner by the way their pet responded to the individual. Similarly, pet owners showed differences in judging a date based on the date's reaction to one's pet ($\chi^2 = 25.571$, df = 2, p < 0.0005), with cat owners also less likely to report judging a date with regard to how the date responded to their pet. Pet owners showed differences in the likelihood of using a pet as an excuse to leave a bad date early ($\chi^2 = 9.464$, df = 2, p = 0.009), with cat owners less likely to use their pet as an excuse to leave a bad date. Pet owners varied in their views of including photos of pets in an online profile ($\chi^2 = 12.279$, df = 2, p = 0.002), with cat owners the less likely to judge someone by whether he/she included a photo of a pet. Pet owners expressed differences in whether a date's pet says a lot about the date's personality ($\chi^2 = 23.118$, df = 2, p < 0.0005), with cat owners less likely to believe that one's pet says a lot about the owner's personality.

Table 1 also presents responses to pet and dating questions with respect to the four age groups. Some outcomes differed across age groups. Whether singles reported ever being attracted to someone because they had a pet differed by age group ($\chi^2 = 20.471$, df = 3, p < 0.005), with pet owners in their 20s being most likely to express experiencing an attraction to other pet owners. Whether a single reported ever using a pet to attract a potential date

Anthrozoös

differed by age group ($\chi^2 = 20.842$, df = 3, p < 0.005), with those singles 50 years and older less likely to report using a pet as "bait." Singles reported age-related differences in judging a date by how the date reacted to their pet(s) ($\chi^2 = 12.642$, df = 3, p = 0.005), with young singles the most likely to judge a date by his/her reaction to their pet. Including photos of a pet in one's online dating profile was viewed differently by individuals in different age groups ($\chi^2 = 14.620$, df = 3, p = 0.002), with younger singles being most likely to regard the inclusion of a pet photo as a turn on. Moreover, a relatively higher percentage of singles agreed with the idea that pets say a lot about personality, with age-group differences in this sentiment also expressed ($\chi^2 = 8.703$, df = 3, p = 0.034).

Discussion

As pet dogs and cats are increasingly viewed as family members, we sought to address how they are incorporated into single adults' dating lives. Here, we reported quantitative descriptive data and analyses on a large sample of single adults in the United States (1,210 people), collected from registered users on a popular online dating website who shared information about pets in their online dating profile. Results revealed that participants were most likely to own dogs and/or cats, consistent with wider patterns of pet ownership. Supporting our first hypothesis, results show that women express more discerning views of the role of pets in dating (e.g., paying attention to how a date interacts with her pet) than men. Supporting our second hypothesis, the role of pet dogs and cats differed on many measures, with dogs serving more diagnostic purposes than cats for assessing a date's caregiving expressions. Descriptive analyses also showed that individuals of different age groups varied in the roles they ascribed to their pets in partner assessment and mate choice.

Women showed more discerning views than men with regard to the role of pets in their dating lives, consistent with our first hypothesis. On eight of 11 items (such as, "Have you ever been more attracted to someone because they had a pet?"), women's responses were significantly different from men's, pointing in the direction of women being more discriminating. Three dependent variables lacked sex differences, perhaps due to context (e.g., "Have you ever used your pet as an excuse to leave a bad date early?") or there was too little variation to yield differences (e.g., almost no-one indicated that a relationship could not work with a "dog person"). Women seemed to rely upon cues of how a partner interacted with a pet more than did men in determining whether or not the prospective partner was worth dating or considering for a longer-term relationship. This sex difference is consistent with the wider literature on female greater discernment of mate preference and choice. indicating that it also manifests in this evolutionarily novel context of pets and online dating. Moreover, for the one dating outcome variable on which the direction of male responses differed from others ("Have you ever used a pet to attract a potential date?"), a higher percentage of men than women reported having done so. This sex difference is consistent with a dynamic by which men advertise traits they perceive are desirable (as indeed the data also show) to prospective mates.

While most theorizing and empirical research on humans and pets has focused on dogs, the present study explicitly contrasted the roles of pet dogs and cats in dating, under the hypothesis that they would differ. On nine (of 11) items, significant differences emerged with respect to whether one owned a pet dog(s), a pet cat(s), or both pet dog(s) and cat(s). As examples, these categories of pet ownership were associated with differences in whether one expressed having been attracted to someone because of a pet, or in having used one's pet to attract potential dates. The direction of these patterns was toward cats being exploited less often than dogs as "social tools" in the dating world. Responses indicated that singles less often advertised and were less responsive to cues of cat ownership or treatment. These contrasts between cats and dogs in the dating world are generally consistent with other aspects of human interaction with pet dogs and cats (e.g., while humans describe in some cases equally strong attachments to dogs and cats, interactions with pet cats tend to be less social or demanding) (Bradshaw 2013).

We speculate that the role of pet dogs and cats in singles' lives will expand as a topic of concern to singles and as a topic of research significance to those interested in dating, romantic and sexual relationships, and/or anthrozoology. One primary reason for this speculation is declining fertility in most of the world. In the US, parents of young children are the most likely to own a dog, but report less attachment to the animal in part because it has been obtained on behalf of the children (Herzog 2010). Both younger and older adults without children report more attachment to a pet dog, perhaps due to lack of fertility and associated attachment to a pet (see Blackstone 2014). Media accounts in Japan (Evans and Roland 2012) and Mexico (Sandoval-Cervantes 2014) suggest similar kinds of dynamics are underway as views toward animals as pets change, alongside rising consumerism and declining fertility.

The current study has limitations. It is not clear how representative the findings from the study are of Americans' patterns of pets and dating more broadly, including among samples not recruited via an online dating service. On one hand, the cross-cultural variation in humananimal interactions argues against generalizing these findings to all societies, particularly to those cultures where domesticated dogs and cats are viewed less favorably. On the other hand, many aspects of the data are consistent with other bodies of theory and data with greater societal focus on American pet dog and cat ownership, where pets have taken on more social and emotional significance, suggesting that many features of the data resonate with broader patterns of American pet ownership and dating. As a related illustration, our study data show that a higher percentage of female respondents reported having pet cats than male respondents, a pattern also found in a large, representative UK study (Murray et al. 2010).

Other limitations of the study include reliance upon self-report (rather than observational or experimental) data, a correlational research design, and the use of questions for which external validation or reliability are not available (given that questions were crafted for purposes of the online survey). Further, the current study was unable to assess the role of sexual orientation, which may result in different patterns of findings, particularly with respect to sex differences in the roles of pets in dating. With these limitations in mind, the current findings provide an interesting next step for our understanding of the roles of pets in peoples' lives in the US, and how pets can indeed function as extended kin. Future research might build upon the findings and background presented here by incorporating more experimental designs, representative sampling strategies, diverse subject pools, and additional kinds of questions to better understand how pets can influence human romantic experiences.

References

Blackstone, A. 2014. Doing family without having kids. Sociology Compass 8: 52-62.

- Blouin, D. D. 2013. Are dogs children, companions, or just animals? Understanding variations in people's orientations toward animals. *Anthrozoös* 26: 279–294.
- Bradshaw, J. 2011. Dog Sense: How the New Science of Dog Behavior Can Make You a Better Friend to Your Pet. New York: Basic.

Anthrozoös

- Bradshaw, J. 2013. Cat Sense: How the New Feline Science Can Make You a Better Friend to Your Pet. New York: Basic.
- Buss, D. M. 1989. Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. Behavioral and Brain Sciences 12: 1–49.
- Cartwright, J. 2008. Evolution and Human Behavior: Darwinian Perspectives on Human Nature. 2nd edn. Cambridge, MA: MIT Press.
- Clutton-Brock J. 2012. Animals as Domesticates: A World View through History. East Lansing, MI: Michigan State University.
- Clutton-Brock, T. H. and Parker, G. A. 1992. Potential reproductive rates and the operation of sexual selection. *Quarterly Review of Biology* 67: 437–456.
- Coppinger, R. and Coppinger, L. 2001. *Dogs: A New Understanding of Canine Origin, Behavior, and Evolution*. Chicago: The University of Chicago Press.
- Dixson, A. F. 2009. Sexual Selection and the Origins of Human Mating Systems. New York: Oxford University Press.
- Evans, R. and Roland, B. 2012. Why Japan prefers pets to parenthood. *The Guardian*. http://www.theguardian. com/lifeandstyle/2012/jun/08/why-japan-prefers-pets-to-parenthood. Accessed on April 30, 2015.
- Fisher, H. 1992. Anatomy of Love: A Natural History of Mating, Marriage, and Why We Stray. New York: W.W. Norton.
- Geary, D. C. 2010. *Male, Female: The Evolution of Human Sex Differences.* 2nd edn. Washington, DC: American Psychological Association.
- Gray, P. B. 2013. Evolution and human sexuality. Yearbook of Physical Anthropology S57: 94–118.
- Gray, P. B. and Anderson, K. G. 2010. *Fatherhood: Evolution and Human Paternal Behavior*. Cambridge, MA: Harvard University Press.
- Gray, P. B. and Garcia, J. R. 2013. *Evolution and Human Sexual Behavior*. Cambridge, MA: Harvard University Press.

Gray, P. B. and Young, S. M. 2011. Human-pet dynamics in cross-cultural perspective. Anthrozoös 24: 17-30.

- Gueguen, N. and Ciccotti, S. 2008. Domestic dogs as facilitators in social interaction: An evaluation of helping and courtship behaviors. *Anthrozoös* 21: 339–349.
- Herzog, H. 2010. Some We Love, Some We Hate, Some We Eat. New York: Harper.
- Hrdy, S. B. 2009. Mothers and Others. Cambridge, MA: Harvard University Press.
- Hurn, S. 2012. Humans and Other Animals: Cross-cultural Perspectives on Human–Animal Interactions. London: Pluto Press.
- Kokko, H. and Jennions, M. 2008. Parental investment, sexual selection and sex ratios. *Journal of Evolutionary Biology* 21: 919–948.
- Low, B. 2015. Why Sex Matters. 2nd edn. Princeton, NJ: Princeton University Press.
- McNicholas, J. and Collis, G. M. 2000. Dogs as catalysts for social interactions: Robustness of the effect. *British Journal of Psychology* 91: 61–70.
- Miklosi, A., Pongraecz, Lakatos, G., Topal, J. and Csanyi, V. 2005. A comparative study of the use of visual communicative signals in interactions between dogs (*Canis familiaris*) and humans and cats (*Felis catus*) and humans. *Journal of Comparative Psychology* 119: 179–186.
- Miller, S. C., Kennedy, C., DeVoe, D., Hickey, M., Nelson, T. and Kogan, L. 2009. An examination of changes in oxytocin levels in men and women before and after interaction with a bonded dog. *Anthrozoös* 22: 31–42.
- Murray, J. K., Browne, W. J., Roberts, M. A., Whitmarsh, A. and Gruffydd-Jones, T. J. 2010. Number and dog ownership profiles of cats and dogs in the UK. *Veterinary Record* 166: 163–168.
- Odendaal, J. S. J. and Meintjes, R. A. 2003. Neurophysiological correlates of affilitative behavior between humans and dogs. *Veterinary Journal* 165: 296–301.
- Sandoval-Cervantes, I. 2014. For the love of dogs, *Anthropology News*, September 26. http://www. anthropology-news.org/index.php/2014/09/26/for-the-love-of-dogs/. Accessed on April 30, 2015.
- Schmitt, D. P. 2005. Sociosexuality from Argentina to Zimbabwe: A 48-nation study of sex, culture, and strategies of human mating. *Behavioral and Brain Sciences* 28: 247–311.
- Serpell, J. A. 1996. Evidence for an association between pet behavior and owner attachment levels. *Applied Animal Behaviour Science* 27: 49–60.
- Serpell, J. A. and Paul, E. S. 2011. Pets in the family: An evolutionary perspective. In *The Oxford Handbook of Evolutionary Family Psychology*, 297–309, ed. C. Salmon and T. K. Shackelford. New York: Oxford University Press.

Shipman, P. 2010. The animal connection and human evolution. Current Anthropology 51: 519–538.

- Shir-Vertesh, D. 2012. "Flexible personhood": Loving animals as family members in Israel. American Anthropologist 114: 420-432.
- Tifferet, S., Kruger, D. J., Bar-Lev, O. and Zeller, S. 2013. Dog ownership increases attractiveness and attenuates perceptions of short-term mating strategy in cad-like men. *Journal of Evolutionary Psychology* 11: 121–129.
- Trivers, R. L. 1972. Parental investment and sexual selection. In *Sexual Selection and the Descent of Man*, 136–179, ed. B. Campbell. Chicago: Aldine.
- Wells, D. L. 2004. The facilitation of social interactions by domestic dogs. Anthrozoös 17: 340-352.
- Wells, D. L. 2007. Domestic dogs and human health: An overview. *British Journal of Health Psychology* 12: 145–156.
- Zasloff, R. L. 1996. Measuring attachment to companion animals: A dog is not a cat is not a bird. *Applied Animal Behaviour Science* 47: 43–48.
- Zeder, M. A., Emshwiller, E., Smith, B. D. and Bradley, D. G. 2006. Documenting domestication: The intersection of genetics and archaeology. *TRENDS in Genetics* 22: 139–155.