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Sex and parental status impacts human-to-pet attachment and caregiving attitudes and behaviors in a Japanese sample

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Abstract

Japan currently displays many signs of a second demographic transition, which is marked by subreplacement fertility, a focus on self-fulfillment, and changes in family, residence, and marriage patterns. Concurrently, increased pet keeping and related spending have occurred. The purpose of the current study was to determine whether the emergence of pet parenting can be documented in Japan. Previously documented in the United States and India, pet parenting is defined as the human investment of money, emotion, and time in companion animals that is like parental investment in children. We collected 615 online survey responses from pet owners (*female* = 48.1%, *male* = 51.9%; *parents* = 39.0%, *nonparents* = 35.8%, *future parents* = 25.2%).

In addition to demographic questions about respondents and their companion animal, each completed the Lexington Attachment to Pets Scale (LAPS) and a series of questions regarding *Affective Responsiveness*, *Training and Play*, and *General Care* (collectively CARES). Our results found clear, significant sex differences on all scales, including the total LAPS score, with women reporting more agreement on the attitudes or frequency of behaviors throughout. Nonparents and future parents reported significantly higher total LAPS scores, with the biggest difference compared to parents on the *People Substituting* scale. Nonparents were also found to report more frequent *General Care* and *Affective Responsiveness* on the CARES scales. We conclude that intuitive but novel differences in human-to-pet attachment and caregiving behavior demonstrate that pet keeping practices can follow sex roles seen in parenting. Additionally, nonparents are more likely to invest in the direct care of companion animals in ways that mirror in adult-to-child parenting practices.

Introduction

In the early part of the 20th century, many cultures, including Japan, entered a demographic transition marked by changes in family norms, a shift from rural self-sustenance to urban labor, and moves to industrialization (Goode, 1970). This initial demographic transition saw a shift from the large families with closely spaced births, to smaller families and protection of children. Lesthaeghe (2014) suggested that a new, second demographic transition (2DT) was occurring in many parts of the world, marked by further reduction in fertility (often to subreplacement levels or below 2.1), a focus on self-fulfillment, and changes in family, residence, and marriage patterns that give rise to a new, flexible life orientation. This transition affords reproductively

aged individuals a choice whether or not to parent and has been documented in China (Volsche & Jankowiak, 2020), the United States (Volsche, 2019), South Africa (Bimha & Chadwick, 2016), India (Bhat & Zavier, 2003), as well as many Western societies.

The hallmarks of the 2DT are well documented in Japan, punctuated by a total fertility rate (1.4) well below replacement (The World Bank, n.d.). In addition to infertility challenges reported by the media (“Almost 45% of Japanese,” 2011) and the impacts of job market barriers for young men (Semuels, 2017). Retherford et al. (1996) noted that cultural shifts allow for educational and career gains by women, increased independence, and more choices for life fulfillment. This is compounded by the “marriage package,” which stigmatizes unwed mothers, continued participation in the workforce after first birth, and the rising risk of divorce (Bumpass et al., 2009). Marriage is also no longer a guaranteed path to parenthood, as Japan’s “sexless marriages” (Tsuji, 2018) often result in no children. As noted by Murray et al. (2018), these changes in women’s reproductive autonomy and increased educational and career achievements are also strongly correlated with reduced, and even subreplacement, fertility.

An alignment of increased spending on pets appears to correlate with the 2DT and reduced fertility in many countries. For example, the United States saw a nearly 3-fold rise in spending over a mere two decades as fertility rates dipped below replacement (Volsche, 2021), and India is seeing a shift in college students’ desires to own a dog that signals a shift toward more inclusion of companion animals in the home (Volsche et al., 2019). There is also evidence to suggest that India is experiencing the emergence of “pet parenting,” as an alternative to fewer opportunities or desires to raise children (Volsche et al., 2021). In both these examples, a marked

increase occurred in the human attachment, caregiving, and affective responsiveness toward companion animals when there are not children in the home.

In 2021, Statista reported the Japanese pet related market had increased to 1.7 trillion yen per year, with the most popular species of companion animal being dogs (“Market Value of Pet Related Businesses in Japan,” 2021). This notable shift from small, easy to keep species (e.g., guinea pig, rhinoceros beetles, fish, and birds) was documented in an earlier survey (“Most Desired Pet Species in Japan,” 2021). Hansen (2013) noted this trend as a post-familial shift in Japanese culture. He called this the “rise of ‘fuzzy’ new family members,” with fuzzy capturing both the physical traits of companion animals and the blurring of lines between humans and dogs in post-familial Japan.

The purpose of the current study was to determine whether the emergence of pet parenting can be documented in Japan. Pet parenting is defined as the human investment of money, emotion, and time in companion animals that is similar to parental investment in children (Volsche et al., 2021). We sought to measure human attachment, caregiving, and affective responsiveness in Japanese homes, with and without children, and including at least one dog or cat. Our goals were to 1) compare parents and nonparents of children on key affective and behavioral investments and 2) determine whether Japan is experiencing a measurable emergence of pet parenting.

Methods

Participants

We recruited adults, aged 18-years and older, living in Japan, who live with at least one dog or cat. We used a survey platform, Qualtrics (Qualtrics International Inc., Seattle, WA) and asked a crowdsourcing company, the Lancers Co., Ltd. (Tokyo, Japan), to distribute the survey and obtain consent, and participants were paid 100 Japanese Yen for a complete response. The target sample was 500 valid responses, providing sufficient power to find medium effect in a one-way ANOVA (F-test). G*Power suggests a minimum of $N = 210$ for this survey (Faul et al., 2007). Data were collected during late summer 2021. The survey was approved by the Behavioral Research Ethics Committee of the Osaka University School of Human Sciences (approval # HB021-028) and Boise State University's Institutional Review Board (protocol #041-SB19-272).

Materials and Procedure

The survey was previously distributed in English in the United States (Volsche, 2021) and India (Volsche et al., 2021). Upon discussing culturally appropriate variations to the demographic questions, it was translated to Japanese and back translated to English by N.I. and H.N. Upon validating the accuracy of the translation, the survey was programmed into the Qualtrics system.

Demographic questions included standard information like age, sex, income, education, and relationship status. Additionally, respondents were asked to identify their relationships with children by choosing all that apply. Options ranged from “I have biological children living with me” to “I identify as childfree by choice.” Other choices sought to capture the presence of foster and stepchildren, children not living in the home, and care invested in the children of others (e.g.,

teaching, caring for nieces/nephews). Respondents also specified future fertility plans by selecting “I want children, but do not have any at this time” and “I do not want children, now or in the future.” These categories collapsed into “parents” (have children), “nonparents” (do not have or want children), and “future parents” (do not have children but want them in the future). This third category (“future parents”) was important to distinguish those who may be caring for companion animals in lieu of or as practice for future parenting duties. Responses that did not clearly state one or the other were categorized as “ambiguous.” Due to the small number of “ambiguous” respondents, we further collapsed this group into the “parents” category to err on the conservative side in alignment with general expectations of parenthood.

We also asked questions pertaining to respondents’ relationships with their companion animals. This included whether they were raised with dogs or cats in the home, with which species they currently live, where their companion animals sleep, and what type of diet is usually provided. There were also questions regarding the language used when speaking about their companions. For example, the question “When talking to close friends and relatives about your relationship with your pet(s), how do you most frequently refer to yourself?” included options such as “owner,” “parent (Mom/Dad),” “friend,” or “caretaker.” Alternatively, the question “When talking to close friends and relatives about your relationship with your pet(s), how do you most frequently refer to your pet(s)?” with options such as “animal (dog/cat),” “kids/children/baby,” “roommate,” and “family member.” These same two questions were asked with “close friends and relatives” replaced by the context “coworkers or strangers.”

To measure human to companion animal attachment behavior, we used the Lexington Attachment to Pets Scale (LAPS; Johnson et al., 1992). We chose this attachment instrument as it has been previously validated for use in other languages (e.g., Spanish; González-Ramírez et al., 2014). The LAPS consists of three primary scales which reached acceptable and good validity with the current Japanese sample: *General Attachment* (11 items, $\alpha = 0.794$), *People Substituting* (7 items, $\alpha = 0.732$), and *Animal Welfare/Rights* (5 items, $\alpha = 0.818$). The total for all 23 questions also reached near excellent validity ($\alpha = .896$). We used the original items of Johnson et al. (1992) to calculate the three subscales, translated into Japanese with Johnson's permission (personal communication, May 4, 2021). The *General Attachment* scale includes statements such as "My pet and I have a very close relationship" and "Owning my pet adds to my happiness." The *People Substituting* scale includes statements such as "quite often I confide in my pet" and "I enjoy showing other people pictures of my pet." The *Animal Welfare/Rights* scale includes statements such as "I believe that pets should have the same rights and privileges as family members" and "I would do almost anything to take care of my pet." We primed respondents to focus on a particular pet when answering the LAPS, and responses were measured on a 4-point Likert scale ranging from "0 = strongly disagree" to "3 = strongly agree."

To measure the ascription of personhood and autonomy, as well as specific caretaking behaviors, the survey included 25 Likert-scale questions drafted by S.V. labeled CARES (Companion Animal Relationships Scale). This instrument was previously used in English among two distinct populations (United States, urban India) and includes three scales with acceptable to good reliability for the current Japanese sample: *Affective Responsiveness* (10 items, $\alpha = 0.836$), *Training and Play* (7 items, $\alpha = 0.758$), and *General Care* (6 items, $\alpha = 0.725$). Again, the

original items of the English version were used to calculate the three subscales. The scale *Affective Responsiveness* consists of questions regarding ascription of personhood and acknowledgement of autonomy and individuality in one's companion animal. Examples of these statements include "I consider my pet's preferences when interacting with them" and "I let my pet request play/walks from me." *Training and Play* emphasizes a focus on fulfilling the training, socialization, and activity needs of companion animals. This includes statement such as "I take my pet to training classes" and "I take my pet to socialize with others of their species." While we acknowledge some of these statements may be biased toward dogs, a growing number of cat guardians are beginning to leash train their cats, going for walks and interacting with others in the neighborhood (Volsche & Johnson, 2022). Finally, *General Care* focuses on statements regarding veterinary care ("If my pet needs to go to the veterinarian, I am the person who takes them"), feeding and grooming ("I am the person who feeds my pet"), and includes three reverse scored items in which someone else provides care ("Someone else walks/exercises my pet"). Responses were completed on a 5-point Likert scale to measure the frequency of each behavior, with options ranging from "1 = never" to "5 = always."

Data Analysis

At the end of data collection, N.I. and H.N. cleaned the data, translated responses to English, and sent a coded MS Excel file to S.V. and F.F. This file was imported into IBM's SPSS V26.

Frequencies and descriptive analyses were completed on the demographic data, reliability testing (Cronbach's alpha) was completed for all scales on the two instruments (LAPS, CARES), and Mann-Whitney *U*-tests were completed to compare respondent sex (male, female) and Kruskal-

Wallis *H*-tests compared respondent parental status (Have/Want Children = “Parents;” Do Not Have/Want Children = “Nonparents”; Plan to Have Children = “Future Parents”). The choice to use nonparametric tests was due to the uneven distribution of the category “parental status,” and we opted to stay consistent for easier comparison between independent variables. Finally, we ran a multiple regression analysis to probe whether a cumulative effect occurred between sex, age, and parental status on LAPS and CARES scores. The full dataset is available at <https://osf.io/pj7wg/>.

Results

We collected a total of 615 completed responses, with a relatively equal sex distribution (*female* = 48.1%; *male* = 51.9%). This is particularly notable since human-animal interactions data is often female biased (Herzog, 2007). There were nearly twice as many parents (64.2%) than nonparents (35.8%), yet the overall number of nonparents was higher than found in prior countries (e.g., United States = 27.7%; Volsche, 2021). The average reported age was 40.2 years old (range: 18-76 years; SD = 10.0). Most respondents completed some form of post-high school education with “High School” (39.0%) and “Bachelor’s Degree” (47.6%) being the most common. See Table 1 for complete demographic information. As a note, the educational category “High School” would also include technical or vocational schools.

< Insert Table 1 About Here >

Due to low counts in regarding how participants refer to themselves, we collapsed “friend” and “other” into one category since most of the written answers to “other” denoted levels of friendship. We also collapsed “guardian” and “caretaker” since these are nearly the same social role. Similarly, we collapsed the categories “friend,” “roommate,” and “other” in the questions referring to companion animals. We also collapsed “girls/boys” and “kids/children” since these both reference human children. Whether speaking to family and relatives or coworkers and strangers, there was no statistically significant difference in the language used to refer to companion animals or self. However, there is a significant finding when looking at these questions and sex difference. Men were significantly more likely than women to use the term “owner” to refer to themselves ($p = 0.013$), and women were more likely to use human terms with their companion animals (e.g., “children” or “family”; $p < 0.001$) when speaking to friends and relatives. These differences become less prevalent ($ps = 0.032$ and 0.096) once the context changes to speaking with coworkers and strangers, suggesting a sensitivity to norms regarding these relationships and a conscious code switching when with colleagues and strangers. There were no statistically significant differences in the use of these terms between parents and nonparents. The complete results of this analysis can be found in Table 2 (by sex) and Table 3 (by parental status).

< Insert Table 2 and Table 3 About Here >

Lexington Attachment to Pets

There were no statistically significant differences between parents, nonparents, and future parents on *General Attachment* or *Animal Welfare/Rights* of the LAPS. There was a statistically significant difference on *People Substituting*, with nonparents and future parents more likely to agree with the statements on this scale ($H = 9.449, p = 0.009$). Nonparents and future parents also had statistically significant higher total LAPS scores ($H = 6.274, p = 0.043$).

We found statistically significant sex differences on all three scales of the LAPS, mostly with a medium effect size (*General Attachment*: $U = 33731, p < 0.001$; *People Substituting*: $U = 40028, p = 0.001$; *Animal Rights/Welfare*: $U = 34192, p < 0.001$). In all cases, women were more likely to agree with the measured statements. A multiple regression confirmed that sex and parental status, but not age, were statistically significant predictors for the total LAPS score ($F[3, 611] = 15.981, p < 0.001, R^2 = 0.073$; sex, $t = 6.485, p < 0.001$; parental status, $t = 3.342, p < 0.001$; age, $t = 1.364, p = 0.173$). See Table 4 (by parental status) and Table 5 (by sex) for descriptive statistics of the LAPS analysis.

< Insert Table 4 and Table 5 About Here >

Companion Animal Relationships Scale (CARES)

There were differences between parents, nonparents, and future parents on *Affective Responsiveness* ($H = 5.881, p = 0.053$) and *General Care* ($H = 8.129, p = 0.017$), though not on *Training and Play* ($H = 2.952, p = 0.229$). Nonparents and future parents were more likely to agree with statements regarding ascription of autonomy and personhood toward companion

animals in their care, as well as higher frequency of direct responsibility for general care such as grooming, feeding, etc.

When analyzing sex differences, women were more likely than men to agree on these same scales (*Affective Responsiveness*, $U = 31024$, $p < 0.001$; *General Care*, $U = 40606.5$, $p = 0.003$; but not *Training and Play*, $U = 46045.5$, $p = 0.595$). Analyzing these findings in tandem suggests nonmothers are caring for companion animals with investment similar to mothers and their children. A multiple regression found that sex and parental status, but not age, were statistically significant on *Affective Responsiveness* ($F[3, 611] = 23.646$, $p < 0.001$, $R^2 = 0.104$; sex, $t = 8.233$, $p < 0.001$; parental status, $t = 2.902$, $p = 0.004$; age, $t = 1.544$, $p = 0.123$). *General Care* was statistically significant across all three independent variables ($F[3, 611] = 8.916$, $p < 0.001$, $R^2 = 0.042$; sex, $t = 3.339$, $p < 0.001$; parental status, $t = 2.456$, $p < 0.001$; age, $t = 4.039$, $p < 0.001$), and there was no statistically significant impact from any of the independent variables on *Training and Play*. Descriptive statistics of the CARES can be found in Table 6 (by parental status) and Table 7 (by sex).

< Insert Table 6 and Table 7 About Here >

Discussion

Based upon our results, Japan is experiencing measurable “pet parenting” behaviors and attitudes. While there is minimal scholarly work on pet parenting in Japan, it is notable that media outlets have been identifying and recording this phenomenon (“Why Japan prefers pets to parenthood?”

2022). Of interest in our study is the marked sex differences in human-to-pet attachment and caregiving, even more so than the differences found between parents, nonparents, and future parents. Overall, we found women reported more attachment, ascription of personhood, and parent-like behaviors and attitudes than men. We also found that nonparents and future parents reported more ascription of personhood, investment in direct care, and general attachment compared to parents.

Our results capture distinct sex differences on the LAPS and CARES. Women were significantly more likely to agree on all three scales of the LAPS (*General Attachment, People Substituting, Animal Rights/Welfare*) and two scales of the CARES (*Affective Responsiveness, General Care*; the only exception is *Training and Play*). An evolutionary perspective on human caregiving and parenting strategies can help explain the higher agreement among women with animal welfare, affective responsiveness, attachment, and direct caregiving behaviors. On average, women are more focused on immediate care, social support, and nurturing toward others while men may be more likely to focus on status, coalition building, and competition (Archer, 2019). This perspective may also shed light on the lack of difference regarding *Training and Play*, given that in human evolution, men and women are both responsible for teaching, entertaining, and socialization of children. This would translate to the activities associated with training and play in companion animals. While these differences are intuitive given the persistence of traditional gender roles in Japanese society (Kato, 2018), it is worth noting that they are visible in relationships with companion animals. Little to no work has demonstrated this finding to date.

This is not the first time sex differences in attitudes toward companion animals have been identified. Nittono et al. (2021) conducted a cross-cultural survey and reported that women found both baby and adult animals to be “cute” (having an affiliative feeling toward them) more frequently and more intensely than men in Japan, the United States, and Israel. This correlates with observations of dog park interactions in which women were more likely to hug, kiss, or whisper to their dogs in public (Volsche et al., 2020). Additionally, Herzog (2007) found that, in general, women were more likely to have positive behaviors and attitudes toward animals (e.g., concerns about use and protection), while men were more likely to hold attitudes toward animals that could be construed as negative (e.g., hunting, justification/engagement in abuse). Therefore, this sex difference is likely not limited to Japan but may be a common tendency observed in other countries and cultures. Further studies are needed to test this hypothesis.

While differences were present on the LAPS between parents, nonparents, and future parents, they were less remarkable compared to sex differences. We suspect the persistence of gendered roles in Japan (Sasagawa et al., 2015), along with the larger sample of men in the current study, may be responsible for this phenomenon. Nonparents and future parents were more likely to agree with statements related to *People Substituting*. Given that fertility decline in Japan is likely as much one of circumstances and not solely of choice (Hara, 2008), pet parenting allows for expression of one’s desire to nurture (Volsche, 2019). This may also partially explain the increase in the Japanese pet products market seen in recent years. It has also been suggested that companion animals may provide an opportunity to practice parenting skills before making a final decision about parenthood (Herzog, 2021). This may explain why slight differences remain between future parents and nonparents.

Nonparents and future parents reported higher frequencies of attitudes and behaviors related to *Affective Responsiveness* and *General Care*. This suggests that relationships with companion animals in homes without children look different than those in homes with children. This is also to be expected, as those without children have the time and opportunity to negotiate a relationship based upon the individual animal with whom they live, including the species-specific needs and individual personality (Volsche, 2018). It is also common that parents are more likely to bring companion animals into the home as a means for children to learn nurturing skills and responsibility, explaining the reduced frequency of direct care (e.g., feeding, grooming) in these homes (Pierce, 2016). Perhaps the increased one-on-one time with companion animals in homes without children is part of the catalyst for the increased responsiveness to cats and dogs as individuals and not “just animals.” The lack of significance on *Training/Play* makes sense. Though we might expect parents to have less time for play, the need to train companion animals to navigate human worlds safely and successfully is likely to drive parents to invest in this crucial aspect of living with companion animals.

Importantly, these data seem to capture some of the nuance in parenting choices, and the roles companion animals play in different homes. Individuals who are childfree are not truly replacing children; rather, they are using the language of parenting as shorthand for a relationship that is much closer to parenthood than pet ownership (see Volsche, 2018, 2019). Alternatively, parents may include companion animals as members of the family, but the overall focus and investment of care remains on children in the home (Herzog, 2021). Yet, far from an either/or, incorporating companion animals in the home is much more nuanced than often assumed. Depending upon

one's life stage, reproductive choices, and overall goals, companion animals provide a variety of pathways for the human desire to nurture.

We do recognize there are limitations to this study. First, we categorized parental status based upon the current presence of children or intentions for the future. This does not account for the possibility of a shift in these intentions. To accommodate, we attempted to err on the side of conservatism, grouping more ambiguous reports with parents. This is also why it was important to separate those who do not currently have children but intend to have children in the future. While this allowed for more nuance on the influence of parental status on relationships with companion animals, we suggest further research is needed. Perhaps qualitative studies, too, could enhance our understanding of these motivations.

We also acknowledge that we did not analyze economic or educational status, nor did we consider marital status. Our focus was on sex and parental status, though we did not find significance on either of these variables during preliminary analysis. Future research may want to focus on the impact of disposable income and leisure time in relation to human-pet attachment, attitudes, and caregiving behaviors.

Conclusion

Whatever the motivation, like many other cultures experiencing the 2DT, our results demonstrate that Japan is also home to the emergence of pet parenting as a practice. As such, research should continue to investigate the trends and patterns related to fertility rates, women's education and

reproductive autonomy, and flexible life orientations that inspire childrearing to become a choice, rather than a mandate. Japan also provides a lens into how this phenomenon might play out in a society where declining marriage rates and closely connected to declining fertility due to the “marriage package” not seen in all countries. In most 2DT countries, marriage and fertility become unlinked, providing ways for men and women to become parents without the constraints of marriage. Since this is yet to occur as a norm in Japan, pet parenting may provide a valid and fulfilling substitute to parenthood. If this is the case, it may be unlikely that this practice dissipates.

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Table 1. Respondent Demographics (N = 615)

	<i>n (%)</i>		<i>n (%)</i>
<i>Parental Status*</i> :		<i>Sex:</i>	
Parent (Have Children)	240 (39.0)	Female	296 (48.1)
Nonparent (Do Not Have/Want Children)	220 (35.8)	Male	319 (51.9)
Future Parents (want children/undecided)	155 (25.2)		
<i>Age:</i>		<i>Education:</i>	
18-24	28 (4.6)	No High School	19 (3.1)
25-35	190 (30.9)	High School**	240 (39.0)
36-46	226 (36.7)	Associates Degree	42 (6.8)
46-60	154 (25)	Bachelor's Degree	293 (47.6)
61+	17 (2.8)	Master's Degree	14 (2.3)
		Doctorate or Professional	7 (1.1)
<i>Relationship Status:</i>		<i>Income†:</i>	
Married over one yr	319 (51.9)	¥ 0 – 99	124 (20.2)
Married less than one yr	5 (0.8)	¥ 100 – 449	285 (46.3)
Exclusive over one yr	8 (1.3)	¥ 450 – 899	137 (22.3)
Exclusive less than one yr	49 (8.0)	¥ 900 – 1699	17 (2.8)
Dating, not exclusive	14 (2.3)	did not disclosure	52 (8.5)
Single and looking	55 (8.9)		
Single, not looking	165 (26.8)		

* Parental status was determined by asking a series of questions related to the presence of children in the home; desire and intention to have children in the future; and self-identification as a parent or childfree. The categories were then collapsed into these three, primary categories, and undecided/ambiguous responses were coded as “future parent.”

** Including technical or vocational schools.

† Income was measured as x10,000 yen per year.

Table 2. Relationships and Language Used with Companion Animals (by sex)

Referencing self when talking to friends and relatives ... (collapsed $\chi^2 = 10.711, p = 0.013$) <i>n (%)</i>			Referencing pet when talking to friends and relatives ... (collapsed $\chi^2 = 32.091, p < 0.001$) <i>n (%)</i>		
	M	F		M	F
Owner	216 (73.0)	196 (61.4)	Animal (Dog/Cat)	132 (44.6)	123 (38.6)
Parent (Mom/Dad)	31 (10.5)	53 (16.6)	Pet	91 (30.7)	54 (16.9)
Guardian	4 (1.4)	4 (1.3)	Kids/Children	22 (7.4)	46 (14.4)
Friend	8 (2.7)	12 (3.8)	Girls/Boys	1 (0.6)	6 (1.9)
Caretaker	24 (8.1)	29 (9.1)	Friend	2 (0.7)	2 (0.6)
Other	13 (4.4)	25 (7.8)	Roommate	0 (0.0)	2 (0.6)
			Family Member	40 (13.5)	67 (21.0)
			Other	8 (2.7)	19 (6.0)
Referencing self when talking to coworkers or strangers ... (collapsed $\chi^2 = 8.810, p = 0.032$) <i>n (%)</i>			Referencing pet when talking to coworkers or strangers ... (collapsed $\chi^2 = 7.876, p = 0.096$) <i>n (%)</i>		
	M	F		M	F
Owner	253 (85.5)	251 (78.7)	Animal (Dog/Cat)	145 (49.0)	172 (53.9)
Parent (Mom/Dad)	13 (4.4)	11 (3.4)	Pet	117 (39.5)	95 (29.8)
Guardian	2 (0.7)	3 (0.9)	Kids/Children	10 (3.4)	12 (3.8)
Friend	3 (1.0)	6 (1.9)	Girls/Boys	1 (0.3)	2 (0.6)
Caretaker	18 (6.1)	28 (8.8)	Friend	1 (0.3)	2 (0.6)
Other	7 (2.4)	20 (6.3)	Roommate	0 (0.0)	1 (0.3)
			Family Member	18 (6.1)	31 (9.7)
			Other	4 (1.4)	4 (1.3)
Grew up with dogs in home <i>n (%)</i>			Grew up with cats in home <i>n (%)</i>		
	M	F		M	F
Yes	176 (59.5)	190 (59.6)	Yes	106 (35.8)	95 (29.8)
No	120 (40.5)	129 (40.4)	No	190 (64.2)	224 (70.2)
Reported having dog(s) <i>n (%)</i>			Reported having cat(s) <i>n (%)</i>		
	M	F		M	F
Yes	179 (60.5)	181 (56.7)	Yes	137 (46.3)	152 (47.6)
No	117 (39.5)	138 (43.3)	No	159 (53.7)	167 (52.4)

Categories were collapsed for χ^2 test as follows:

Questions referencing self: "friend" and "other" were combined; "guardian" and "caretaker" were combined.

Questions referencing pet: "friend," "roommate," and "other" were combined; "girls/boys" and "kids/children" were combined.

Table 3. Relationship Language Used with Companion Animals (by parental status)

Referencing self when talking to friends and relatives ... (collapsed $\chi^2 = 14.019, p = 0.029$)				Referencing pet when talking to friends and relatives ... (collapsed $\chi^2 = 5.406, p = 0.713$)			
	<i>n (%)</i>				<i>n (%)</i>		
	P*	NP**	FP†		P	NP	FP
Owner	172 (71.7)	142 (64.5)	98 (63.2)	Animal (Dog/Cat)	99 (41.3)	91 (41.4)	65 (41.9)
Parent (Mom/Dad)	37 (15.4)	31 (14.1)	16 (10.3)	Pet	64 (26.7)	44 (20.0)	37 (23.9)
Guardian	2 (0.8)	3 (1.4)	3 (1.9)	Kids/Children	23 (9.6)	29 (13.2)	16 (10.3)
Friend	4 (1.7)	6 (2.7)	10 (6.5)	Girls/Boys	0 (0.0)	4 (1.8)	3 (1.9)
Caretaker	12 (5.0)	24 (10.9)	17 (11.0)	Friend	0 (0.0)	1 (0.5)	3 (1.9)
Other	13 (5.4)	14 (6.4)	11 (7.1)	Roommate	1 (0.4)	1 (0.5)	0 (0.0)
				Family Member	40 (16.7)	40 (18.2)	27 (17.4)
				Other	13 (5.4)	10 (4.5)	4 (2.6)
Referencing self when talking to coworkers or strangers ... (collapsed $\chi^2 = 6.780, p = 0.342$)				Referencing pet when talking to coworkers or strangers ... (collapsed $\chi^2 = 6.441, p = 0.598$)			
	<i>n (%)</i>				<i>n (%)</i>		
	P	NP	FP		P	NP	FP
Owner	199 (82.9)	179 (81.4)	126 (81.3)	Animal (Dog/Cat)	127 (52.9)	114 (51.8)	76 (49.0)
Parent (Mom/Dad)	13 (5.4)	9 (4.1)	2 (1.3)	Pet	81 (33.8)	73 (33.2)	58 (37.4)
Guardian	2 (0.8)	2 (0.9)	1 (0.6)	Kids/Children	5 (2.1)	13 (5.9)	4 (2.6)
Friend	2 (0.8)	2 (0.9)	5 (3.2)	Girls/Boys	1 (0.4)	1 (0.5)	1 (0.6)
Caretaker	14 (5.8)	18 (8.2)	14 (9.0)	Friend	0 (0.0)	0 (0.0)	3 (1.9)
Other	10 (4.2)	10 (4.5)	7 (4.5)	Roommate	0 (0.0)	1 (0.5)	0 (0.0)
				Family Member	21 (8.8)	16 (7.3)	12 (7.7)
				Other	5 (2.1)	2 (0.9)	1 (0.6)
Grew up with dogs in home				Grew up with cats in home			
	<i>n (%)</i>				<i>n (%)</i>		
	P	NP	FP		P	NP	FP
Yes	146 (60.8)	127 (57.7)	93 (60.0)	Yes	74 (30.8)	77 (35.0)	50 (32.3)
No	94 (39.2)	93 (42.3)	62 (40.0)	No	166 (69.2)	143 (65.0)	105 (67.7)
Reported having dog(s)				Reported having cat(s)			
	<i>n (%)</i>				<i>n (%)</i>		
	P	NP	FP		P	NP	FP
Yes	155 (64.6)	112 (50.9)	93 (60.0)	Yes	98 (40.8)	117 (53.2)	74 (47.7)
No	85 (35.4)	108 (49.1)	62 (40.0)	No	142 (59.2)	103 (46.8)	81 (52.3)

* P = parent; Have Children; ** NP = nonparent; No Children/Childfree; † FP = future parent; Want Children or Ambiguous

Categories were collapsed for χ^2 test as follows:

Questions referencing self: “friend” and “other” were combined; “guardian” and “caretaker” were combined.

Questions referencing pet: “friend,” “roommate,” and “other” were combined; “girls/boys” and “kids/children” were combined.

Table 4. Sample Descriptives for parental status on LAPS by Scale

	<i>Parents*</i>		<i>Nonparents</i>		<i>Future Parents</i>		<i>H</i>	<i>p</i>	<i>d</i> ^{††}
	<i>n</i>	<i>Mean Rank</i> ^{**}	<i>n</i>	<i>Mean Rank</i> ^{**}	<i>n</i>	<i>Mean Rank</i> ^{**}			
†Scale 1	240	293.63	220	318.10	155	315.91	2.600	0.273	0.063
†Scale 2	240	280.57	220	325.19	155	326.08	9.449	0.009	0.222
†Scale 3	240	290.21	220	316.31	155	323.75	4.173	0.124	0.119
Total Score	240	285.63	220	321.10	155	324.05	6.274	0.043	0.168

*The demographic category “ambiguous/undecided” was collapsed into “Future Parents” to account for the ambiguity that these individuals may choose to have children.

**Higher Mean Rank signifies more agreement with statements from the scale.

†Scale 1 = *General Attachment*; Scale 2 = *People Substituting*; Scale 3 = *Animal Rights/Welfare* (Johnson, Garrity, & Stallones, 1992).

††Calculated per Lenhard and Lenhard (2016).

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Table 5. Sample Descriptives for sex differences on LAPS by Scale

	<i>Male</i>		<i>Female</i>		<i>U</i>	<i>p</i>	<i>d</i> [†]
	<i>n</i>	<i>Mean Rank</i> [*]	<i>n</i>	<i>Mean Rank</i> [*]			
**Scale 1	296	262.46	319	350.26	33731.0	< 0.001	0.510
**Scale 2	296	283.73	319	330.52	40028.0	0.001	0.265
**Scale 3	296	264.01	319	348.82	34192.0	< 0.001	0.491
Total Score	296	266.02	319	346.96	34784.5	< 0.001	0.469

*Higher Mean Rank signifies more agreement with statements from the scale.

**Scale 1 = *General Attachment*; Scale 2 = *People Substituting*; Scale 3 = *Animal Rights/Welfare* (Johnson, Garrity, & Stallones, 1992).

†Calculated per Lenhard and Lenhard (2016).

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Table 6. Sample Descriptives for parental status on CARES by Scale

	<i>Parents*</i>		<i>Nonparents</i>		<i>Future Parents</i>		<i>H</i>	<i>p</i>	<i>d</i> [†]
	<i>n</i>	<i>Mean Rank</i> **	<i>n</i>	<i>Mean Rank</i> **	<i>n</i>	<i>Mean Rank</i> **			
†Scale 1	240	288.78	220	328.95	155	308.03	5.881	0.053	0.160
†Scale 2	240	301.10	220	300.62	155	329.16	2.952	0.229	0.079
†Scale 3	240	289.51	220	334.89	155	298.46	8.129	0.017	0.201

*The demographic category “ambiguous/undecided” was collapsed into “Future Parents” to account for the ambiguity that these individuals may choose to have children.

**Higher Mean Rank signifies more agreement with statements from the scale.

†Scale 1 = *Affective Responsiveness*; Scale 2 = *Training and Play*; Scale 3 = *General Care*.

‡Calculated per Lenhard and Lenhard (2016).

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Table 7. Sample Descriptives for sex differences on CARES by Scale

	<i>Male</i>		<i>Female</i>		<i>U</i>	<i>p</i>	<i>d</i> [†]
	<i>n</i>	<i>Mean Rank</i> [*]	<i>n</i>	<i>Mean Rank</i> [*]			
**Scale 1	296	253.31	319	358.75	31024.0	< 0.001	0.621
**Scale 2	296	304.06	319	311.66	46045.5	0.595	0.043
**Scale 3	296	285.68	319	328.71	40606.5	0.003	0.244

*Higher Mean Rank signifies reporting more frequency of related behaviors.

**Scale 1 = *Affective Responsiveness*; Scale 2 = *Training and Play*; Scale 3 = *General Care*.

[†]Calculated per Lenhard and Lenhard (2016).

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