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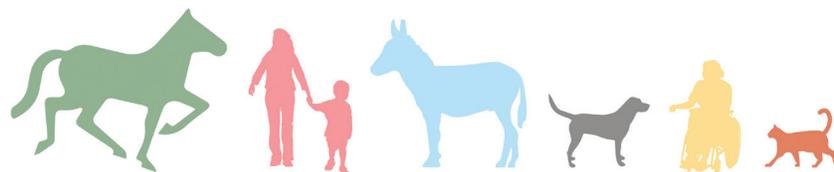
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Not So Different as Cats and Dogs: Companionship during the COVID-19 Pandemic

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Keywords: human perceptions, dog, cat, social cognition, attachment, COVID-19

Abstract: COVID-19 lockdown provided a unique, in situ opportunity to probe caretaker experiences of living with companion animals during a stressful event. We launched an online survey in the United States that included standard demographic questions, questions related to household structures, and 25 Likert scale questions that probed perceptions of whether and how respondents' relationships changed during social isolation. This paper uses a subset of that data specific to dog and cat guardians. A principal components analysis and Mann-Whitney *U* test returned no significant differences between cat and dog guardians on three scales (Scale 1: *Psychological Well-being*, Scale 2: *Bonding*, and Scale 3: *Companion Animal vs. Family*). However, subtle differences emerged on specific items (e.g., "my pet is an extension of me"). We suggest guardian perceptions of species-specific needs and cognitive/emotional capacities may bias relationships with companion animals. Furthermore, we suggest these differences are the result of persistent cultural myths about the differences between cats and dogs.

Introduction

Cultural myths persist regarding differences in dogs and cats. Companion animal-related industries perpetuate these myths when helping potential pet guardians select a companion. Perceived differences include the species' sociality (dogs are "pack" animals and cats are "solitary" hunters), the guardian's preferred lifestyle (dogs are "outdoorsy" and cats "are happy to be left alone"), and the interactive

requirements (dogs "crave attention" and cats are "independent"). This is despite a growing body of literature on cat social cognition and behavior that supports their similarities to dogs (see Vitale Shreve & Udell, 2015).

Menchetti and colleagues (2018) found that individuals who owned both species reported distinct personality differences in their dogs and cats; however, confounding variables may have influenced the results. Taking advantage of the in situ event created

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by stay-at-home orders during the COVID-19 pandemic, we probed dog and cat guardians' experiences of social support from and interactions with their companions compared to pre-pandemic relationships. Based upon our findings, we speculate how guardian perceptions of cognitive and emotional capacities, as well as species-specific needs, may influence these relationships.

Research Question

Do cat and dog guardians report different benefits during social isolation?

Methods

Participants

We collected survey data via Qualtrics during April and May 2020. This data is a subset from a larger project regarding companion animals and families in the home during social isolation and includes only guardians of dogs and cats. Respondents accessed the Qualtrics survey anonymously by clicking on a bit.ly link via Twitter and Facebook and confirmed that they were 18 years of age or older, located in the United States, and living with at least one companion animal. Respondents were only included if they were observing a social isolation order.

We specifically defined the term "shelter in place" using the U.S. government's "30 Days to Slow the Spread (Coronavirus.org)" definition: "working from home; engaging in school from home; avoiding social gatherings; using drive-thru or delivery; avoiding discretionary travel; etc." The Institutional Review Board provided an exempt status since online surveys are easily discontinued by participants (IRB Protocol #041-SB20-069).

Survey Design

The survey included standard demographic questions and 25 Likert scale questions to probe perceptions of whether and how relationships with

companion animals changed during shelter in place, including their role in relieving or exacerbating stress. These questions combined statements from Williams's (1997) scale on ostracism with questions from the Lexington Attachment to Pets Scale (LAPS, Johnson et al., 1992). We chose a 4-point scale (1 = "strongly agree" to 4 = "strongly disagree"). Before the statement list, respondents were presented with the prompt "Since observing the shelter in place order . . ." Statements included, "My pet helps me escape the stresses of shelter in place," "I feel like my pet is an extension of me," and "I feel I can influence the actions of my pet."

Before answering the Likert scale questions, respondents were prompted with the statement, "For the following questions, think about the pet with whom you spent the most time during shelter in place." We then asked for the species, with the options "dog," "cat," and "other (please specify)"; the word used to identify their relationship with their companion animal (i.e., owner, parent); and questions related to care (i.e., sleeping norms, food). Only "dog" and "cat" responses are included in this subset.

Analysis

We exported raw data into Excel, numerically coded, then imported the data into SPSS V26. We then removed any responses missing more than one answer from the Likert scale questions. Demographic data were analyzed with an assortment of crosstabs and descriptives. We processed the Likert scale questions via principal components analysis and Mann-Whitney tests. Due to the results of the Mann-Whitney test on the factors, we also completed Mann-Whitney tests on each individual statement from the Likert scale.

Results

Participant Demographics

Our final sample included 205 dog ($n = 145$, 70.7%) or cat ($n = 60$, 29.3%) guardians. The sample predominantly consisted of white, heterosexual females between the ages of 25 and 46 years. An overwhelming

Table 1 Respondent Demographics

	<i>n</i> (%)		<i>n</i> (%)
<i>Gender:</i>		<i>Age:</i>	
Female	174 (84.8)	18–24	13 (6.3)
Male	21 (10.2)	25–35	62 (30.2)
GNC	4 (2.0)	36–46	50 (24.4)
Queer	3 (1.5)	46–60	46 (22.4)
Trans MtF	2 (1.0)	61–75	32 (15.6)
Other	1 (0.5)	75+	2 (1.0)
<i>Ethnic/Racial Background:</i>		<i>Sexual Orientation:</i>	
White	182 (88.7)	Heterosexual	149 (72.7)
Hispanic or Latino/a	13 (6.3)	Bisexual	31 (15.0)
Asian or Asian American	4 (2.0)	Homosexual	18 (8.8)
Native American/ Alaskan Native	2 (1.0)	Asexual	3 (1.5)
Other	2 (1.0)	Other	3 (1.5)
Did not answer	2 (1.0)	Did not answer	1 (0.5)
<i>Type of Pet:</i>		<i>Education:</i>	
Dog	145 (70.7)	HS diploma or equiv.	4 (2.0)
Cat	60 (29.3)	Some college, no degree	21 (10.2)
		Associate	11 (5.4)
		Bachelor's	71 (34.6)
		Graduate or Professional	98 (47.8)
<i>Term Used in Reference to Relationship:</i>		<i>Income:</i>	
Parent	118 (57.6)	\$0–\$9,700	2 (1.0)
Guardian	40 (19.5)	\$9,701–\$39,475	36 (17.5)
Owner	24 (11.7)	\$39,476–\$84,200	61 (29.7)
Friend	9 (4.4)	\$84,201–\$160,725	65 (31.7)
Other*	14 (6.8)	\$160,726–204,100	17 (8.3)
		\$204,101–\$306,750	11 (5.4)
		\$306,751+	10 (4.9)
		Did not answer	3 (1.5)

*Other terms used included “furmom,” “roommate,” and “his/her human.”

number of respondents reported referring to themselves as their companion animal’s “parent” (57.6%) or “guardian” (19.5%). The sample was also biased toward middle- and upper-middle-class incomes, with four-year or advanced college degrees. Table 1 includes demographics for all respondents.

Factor Analysis

Using a Varimax rotation method, we completed a principal components analysis on the Likert scale

questions. Rotation converged in five iterations, and we dropped six items for either failing to load or loading equally on more than one factor. Ultimately, a total of three scales emerged from the statements: *Scale 1: Psychological Well-being*, *Scale 2: Bonding*, and *Scale 3: Companion Animal vs. Family*.

The statements in Scale 1 (*Psychological Well-being*, $\alpha = 0.631$) relate to emotional and psychological health, along with the perceived stress- and isolation-reducing benefit of having a companion animal in the home with which to spend time and connect.

Table 2 Sample Descriptives by Scale

	<i>Dog Guardians</i>					<i>Cat Guardians</i>					<i>p</i>	PS**
	<i>n</i>	<i>M</i>	<i>Mdn</i>	<i>SD</i>	<i>g₁*</i>	<i>n</i>	<i>M</i>	<i>Mdn</i>	<i>SD</i>	<i>g₁</i>		
Scale 1	145	2.055	2.000	0.256	0.891	60	2.073	2.000	0.215	1.200	0.338	0.542
Scale 2	145	2.498	2.600	0.575	-0.100	60	2.460	2.600	0.633	-0.504	0.978	0.501
Scale 3	145	2.710	2.750	0.715	-0.141	60	2.750	2.750	0.723	-0.065	0.823	0.510

* g_1 is the estimated skewness of the sample.

**PS is a measure of effect size (thresholds: small = 0.56, medium = 0.64, and large = 0.71).

The statements in Scale 2 ($\alpha = 0.710$) suggest the companion animal is a source of social contact and companionship, whether as an immediate agent in the home or as a conduit to other persons on social media. These statements also point to potential increases in attachment related to the additional time at home with one's companion animal. The statements in Scale 3 ($\alpha = 0.725$) look at how dog and cat guardians balance the obligation to socialize with and care for family and their companion animals. This scale also considers that the two domains do not always overlap.

We completed a Mann-Whitney test between dog and cat guardians on the scales extracted above. There was no statistically significant difference on these scales (Scale 1, $p = 0.338$; Scale 2, $p = 0.978$; Scale 3, $p = 0.823$). Table 2 describes these results in detail, by scale and species.

Because the reliability tests on our scales resulted in scores below $\alpha = 0.8$, we ran additional tests on individual statements, and subtle differences between species emerged. Cat guardians were more likely to agree with the statement "I spend more time exercising alone than before shelter in place" ($p = 0.038$, $U = 3589.5$, $PS = 0.587$). In contrast, dog guardians were more likely to agree with the statement "I spend more time exercising or socializing with my pet without my family" ($p = 0.001$, $U = 3005.0$, $PS = 0.655$). Additionally, dog guardians were more likely to agree with the statements "I feel like my pet is an extension of me" ($p = 0.050$, $U = 3625.0$, $PS = 0.583$) and "I feel I can influence the actions of my pet" ($p = 0.001$, $U = 2924.50$, $PS = 0.664$).

Cat guardians were more likely to agree with the statement "I feel my pet likes to interact with me more than before" ($p = 0.057$, $U = 3666.0$, $PS = 0.579$). While the p value for this statement is above an α of 0.05, we think this result is worth consideration. There continues to be debate regarding the acceptance of slightly higher p values as potentially suggestive of data trends (for discussion see Halsey, 2019; Olsson-Collentine et al., 2019). Given that our sample is smaller than ideal, we feel it is appropriate to consider the differences in this statement as trending. We also acknowledge this emphasizes the importance of including an effect size on our results, which we do by reporting the Probability of Superiority for each of the five statements. Table 3 reports the complete Mann-Whitney results on these five statements.

Discussion

We probed whether species (dog or cat) had a guardians' reported impact on human-animal relationships during social isolation. While there was no difference between species on overarching themes of well-being and bonding, there are subtle distinctions on individual items that suggest a key difference—guardian experiences appear to be shaped by stereotypes of dogs and cats (i.e., dogs are eager to please while cats are independent and untrainable).

Stereotypes likely explain why dog guardians in our sample were more likely to agree with the statement, "I feel I can influence the actions of my pet."

Table 3 Mann-Whitney Results on Individual Statements

	<i>M</i> rank: Dog Owners	<i>M</i> rank: Cat Owners	<i>p</i> *	<i>U</i>	PS**
Since observing the shelter in place order . . .					
I feel my pet likes to interact with me more than before.	107.20	91.60	0.057	3666.0	0.579
[†] I feel like my pet is an extension of me.	98.00	115.08	0.050	3625.0	0.583
[†] I feel I can influence the actions of my pet.	93.17	126.76	0.001	2924.5	0.664
I spend more time exercising or socializing with my pet without my family.	93.72	125.42	0.001	3005.0	0.655
[†] I spend more time exercising alone than before shelter in place.	108.24	90.33	0.038	3589.5	0.587

*We accepted *p*-values tracking close to significance, particularly if there was an effect size of note.

** PS is a measure of effect size (thresholds:- small = 0.56, medium = 0.64, and large = 0.71).

[†]Due to multiple loadings, these statements were not included in the scales.

However, as animal cognition research persists, these myths are being dispelled. Clicker training, a form of positive reinforcement training for dogs, is repeatedly found to be equally effective teaching cats. For example, Kogan, Kolus, and Schoenfeld-Tacher (2017) found that clicker training shelter cats encouraged them to approach the front of their kennels, making them appear bolder and increasing their adoptability. Cats also learned to perform many of the skills dog guardians teach (e.g., sitting, high-fiving; 2017) and can learn to recognize their names (Saito et al., 2019).

Cat training may also dispel the myth that cats are more independent than dogs and do not need as much human interaction. Interestingly, Vitale Shreve, Mehrkam, and Udell (2017) found that socializing with humans was a preferred stimulus for both homed and shelter cats. More than food or toys, cats in the study preferred petting and human vocalizations. This may explain why more cat guardians in our sample agreed that “I feel my pet likes to interact with me more than before.” Perhaps the increased time spent at home allowed participants to experience firsthand this preference for human interaction. Increasing educational outreach to cat guardians could improve the quality of life for felines and guardians.

Two statements point to the physical benefits of living with companion animals. Dog guardians were

more likely to agree with the statement, “I spend more time exercising or socializing with my pet without my family,” while cat guardians were more likely to agree with the statement, “I spend more time exercising alone than before shelter in place.” The differences in these responses may point to persistent cultural norms around outdoor activity with companion animals. During social isolation orders, one of the common exceptions was walking dogs for purposes of elimination. Cats, in contrast, are litter box trained, leading to assumptions that they do not need such activity.

The recent work of Oliva and Johnson (2020) supports this finding. They found being a dog guardian encouraged mindfulness and protected against loneliness and depression during a lockdown. In contrast, fewer cat guardians reported these benefits. This may be due to the need to walk dogs regularly, an activity most cat guardians do not believe their cats would enjoy. As a result, dog guardians engage in a daily routine of care—a routine cat guardians may not perceive as necessary.

Differences in perceptions of attachment and inclusion in activities that are not specifically companion animal-related (like outdoor walks) may also explain why dog guardians were more likely to agree with the statement, “I feel like my pet is an extension of me.” This extension of self has been documented

repeatedly and in numerous forms including symbolic expression of self (Veevers, 1985) and perceptions of companion animal gender and identity (Ramirez, 2006). Growing literature suggests that guardians may also be choosing to apply parenting strategies to companion animals rather than having children (e.g., Volsche, 2018). A common theme is the focus on dogs in this role. However, as found by the lack of differences in the three scales of our study, this is not to suggest that cat guardians are not receiving psychosocial benefits from the presence of their cats. Rather, cats may reduce experiences of loneliness and isolation in an alternative way.

What is uncertain, and unfortunately not specifically tested in our study, is the human cognitive mechanism supporting these biases. That is, which sociocognitive processes support the continued belief in perceptions that are refuted by recent research? We suspect the most likely explanation is confirmation bias, the interpretation or perception of information based upon existing beliefs (Jones & Sugden, 2001). It is possible this unconscious bias continues to influence the perceptions, and ultimately, the experiences of dog and cat guardians, regardless of access to current research. To confirm whether this is truly what occurs, more research is needed.

Summary for Practitioners

Our research is relevant to practitioners of animal-assisted interventions (AAI) as well as companion animal guardians. By documenting the resilience of cultural myths regarding dog and cat behavior, cognition, and most importantly, attachment, we demonstrate the need for additional attention to and conveyance of animal cognition research. AAI practitioners need to be cognizant of the ways these biases may influence their own use of and attention to species-specific needs. Our results may help practitioners become more reflexive of their own misconceptions regarding the differences between dogs and cats.

While quite a bit of work considers asking the animal for consent in therapeutic spaces (e.g., Van Fleet

& Faa-Thompson, 2017), less focuses on how human expectations of different species may influence behavior interpretation. Proper understanding of body language and vocalization is crucial to the welfare of animals and the potential safety of clients. Staying current with research on companion animal cognition and attachment could offer valuable insights to displace common myths. For example, clicker training cats to be more friendly could improve the benefits of cats in these spaces while also reducing the potential stress cats feel in practitioners' offices. It could also help clients see cats differently.

By extension, practitioners could encourage clients to improve their relationships with companion animals. Upon learning that a client lives with a cat, engaging them in bond-building activities such as training and specific forms of play might improve not only the human-cat relationship, but also the client's mental health outcomes. Leash and harness training could initiate many of the same benefits dog guardians experience from outdoor walks and activity. But this begins with helping clients see the similarities between dogs and cats rather than the differences.

Limitations

Despite this study's methodology being appropriate for data collection during an active pandemic, many cross-sectional surveys during this time fall prey to several inherent biases. Online surveys likely excluded the response of individuals with limited access to technology, the internet, or social media. A demographic selection bias manifested in our sample, which primarily consisted of middle- and upper-middle-class, white heterosexual females between the ages of 25 and 46 years with four-year or advanced college degrees. Additionally, many surveys related to COVID-19 were circulated. As a measure to reduce potential harm and fatigue to respondents, our survey was not designed to require respondents to answer all questions, resulting in gaps within our data, a smaller sample size, and an imbalance of dog and cat guardians. As stated previously, the generalization of the current study is limited. Across space

and time during the pandemic, dog and cat guardians may differ in their perceived relationship with their dog or cat. Despite these limitations, our study adds value to the literature and provides thoughts for future research.

Conclusion

This is the first study to our knowledge that suggests guardian perceptions of dogs' and cats' cognitive and emotional capacities, as well as knowledge of species-specific needs, may be influencing their relationships. While the overarching themes of bonding and psychological well-being showed no difference, subtle distinctions did arise. These subtleties suggest different expectations exist with cats compared to dogs, and these differences may inform whether, or how, the guardian benefits from living with companion animals.

Consistent with cultural biases, dog guardians appear more likely to engage in training and other relationship-building activities that can enhance communication and appreciation of species-specific needs. However, since cat guardians were more likely to agree that their companion animal likes to interact with them more than before social isolation, it may simply be that cat guardians need time to see and experience what the science is already learning—that cats' attachment and daily needs may not be that different from those of dogs after all.

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