

**Bachelor Thesis - Animal Influence: How Our Cats and Dogs Shape Our Views Of
Others**

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Abstract

Cats and dogs are part of many families, and humans form strong connections with them, seeing them as belonging to an in-group. This study aims to see if a pet's behaviour can influence someone's view of strangers. This was done by presenting participants with two vignettes featuring their pet, dubbed the Security scenario and Judgment scenario, with the former featuring a hostile reaction towards a stranger from the pet, and the latter a friendly reaction. Both vignettes also included a control stranger whom the pet reacts neutrally towards. It was found that the pet's reaction indeed has an effect on participants' feelings towards strangers. Participants also filled out a series of questions about their stereotypes of cats and dogs, which indicated dogs were seen as more social. Participants were shown to be more influenced by dogs, which fits these stereotypes, but not as strongly as they would suggest. Owners and non-owners showed little differences between them, indicating non-owners had an easy time inserting themselves in the situations despite them not owning a cat or dog in real life.

Keywords: Cats, Dogs, Pets, Social Influence, Self-Categorization

Introduction

Social influence is a much-written about topic in psychology, spanning a wide array of theories and domains. Despite the variety and sheer amount of research on social influence, however, it tends to adhere to one particular limit: it stays within the realm of human-human influence. This paper instead focuses on animal-human social influence, a topic that rarely comes up despite the fact that so many people have animal companions.

The inspiration for this study is an example of animal-human social influence posited by Spears (2021), which in turn lead to a study by Plagemann (2022). In a review of research on the group identity explanation of social influence, Spears describes a scenario in which a rabbit's behavior might influence us. If we find ourselves in a foreign forest, and see a rabbit speeding off in fear, we could infer that it fled from a predator, and, consequently, might just make off ourselves. Spears argues that it is our shared social identity with the rabbit (in this case, both humans and rabbits are potential tiger food), and our theory-of-mind assumptions that cause us to be influenced by it.

Most people will not find themselves in a similar scenario anytime soon, or even interact with wild animals much in general. The chances are, however, that they interact with a pet frequently. In the Netherlands, there are 3.2 million cats and 1.8 million dogs kept as pets (<https://dibevo.nl/pers/nederlander-vindt-huisdier-een-goed-medicijn-tegen-eenzaamheid>). 18% of all households have a dog, and 25% a cat. Naturally, there are other species we keep as well, but for our research, we focus on these two common, and relatively intelligent animals.

Spears' (2021) rabbit example works because we share a group (tiger prey) with the rabbit. The group identity we share with our cats and dogs, however, is even stronger. A majority of people tend to see their pet as part of their family (McConnell et al., 2016). Behler and colleagues (2020) studied people's grief process after losing a pet, and found that levels of grief are similar for human and animal losses, though society tends to give less support and understanding to those grieving the loss of their pets. They also found people rated their pets as being as close to them as other humans on the Inclusion of Other in the Self Scale (IOS, Aron et al, 1992).

There is another phenomenon that makes animal-human social influence worth exploring in addition to human-human influence: anthropomorphism. Anthropomorphism is the tendency of humans to ascribe human characteristics to non-human entities, including

animals. While the act of anthropomorphizing might not be deemed all that scientific, for psychology research the fact humans do so can be interesting (Paul et al., 2014). It might have been influential on our ability to keep pets in the first place (Serpell, 2003), and accounts for the strength of our bond with them (McConnell, et al, 2016). A thorough analysis of this phenomenon is beyond the scope of this thesis, but consider some of the ways people treat their pets that make little difference to the animal itself, but are similar to things humans do between themselves: burying or cremating pets after death, dressing them up, celebrating their birthday or world animal day (the latter is a well-known day in the Netherlands), or writing the animal's supposed thoughts under a picture of them on social media. More anecdotally, I certainly attribute certain emotional states to my or my family's cats without thinking about how accurate this might be. I see one of my sister's cats as a particularly jealous type, and when my mother has a coughing fit and her cat comes over, we are all charmed by her concern over her owner, never mind what her motivation might actually be. It does not seem like much of a stretch, then, to assume that there is some space within the realm of social influence for animal influence. If other humans can influence us in a plethora of ways, certainly our tendency to humanize animals should allow for at least some social influence.

Although we have not differentiated between them so far, there are differences between cats and dogs that could have an effect on what domains they influence us in. Dogs were domesticated first, and were guards and hunters (Driscoll et al., 2009). Cats, on the other hand were likely domesticated because they chose to live among humans, and people simply tolerated them, though they got rid of rodents as well. The wild ancestors of our modern housecats and pet dogs led different lifestyles too, with the former leading a more solitary life compared to the latter. This can still be seen in today's cats and dogs, with cats being seen as more solitary, and dogs being seen as more social. Cats are said to be more picky with people, while dogs will get along with most owners easily, and are 'man's best friend'. Similarly, while both species can be territorial, dogs might bark against anyone who comes near their owner's property, while cats tend to fight with other cats in the neighborhood to defend their backyard, again something in line with common views on the two pets. What stereotypes people hold about cats and dogs, and if this could possibly be linked to social influence in our study, will be among the topics explored in this paper.

The current study follows up from Plagemann (2022). He proposed, and indeed found evidence, that, when a pet has a certain reaction to a stranger, this can influence our own view of said stranger. In our study, participants read vignettes describing either their cat's or dog's

reaction to two pairs of strangers. Both pairs include a control stranger, whom the pet will seem uninterested in, and a stranger who receives either a positive or negative reaction from the pet. Based on the results Plagemann found, we expect participants to evaluate these strangers differently based on the pet's behaviour (H1).

As mentioned above, people see dogs as group animals, oftentimes protective of their owners, while cats are seen as more fickle and solitary. We expect this to lead to some differences between the two vignettes. Our first vignette, dubbed the Security scenario, has two strangers visit the participant's apartment. The pet ignores the first person when they come in, but when the second person comes over moments later, they are met with hostility. Given the differences between cats and dogs, we expect dogs to have more influence on participants' feelings than cats for this vignette (H2), since they are seen as more protective of their owners. In the second vignette, which we call the Judgment scenario, two other strangers have been invited in, and are sat down in the living room. The pet again ignores one of the strangers, but behaves affectionately towards the other. For this vignette, we expect cats to have more influence on participants' feelings (H3), given that they are seen as more picky, and thus the cat liking someone could be more impactful. Lastly, we expect pet owners to be more strongly influenced by their pet's behaviour in these vignettes than non-owners are by their imagined pets (H4). Since pet owners tend to form very close bonds with their pets (McConnell et al., 2016), it would make sense if they would feel more strongly about the scenarios compared to people who do not own a pet, and thus have no connection to the animal in the vignette.

In addition, we incorporated the Inclusion of Other in the Self Scale (IOS) by Aron and colleagues (1992). Behler and colleagues (2020) found that people reported high levels of connectedness to their pets on this scale, and we have no reason to believe we will find otherwise. Finally, we asked about people's stereotypes about cats and dogs, including on security and judgment domains. The results of the IOS and these stereotypes could shed some light on differences we might find in the vignettes.

Method

Participants and Design

For this study, we collected data from 547 participants, of which 352 were first year psychology students of the University of Groningen. We collected data from 180 participants that were invited by the researchers. Overall, 85 responses were eliminated. Seventy responses of participants were removed because they did not finish the questionnaire. Thirteen participants were removed from failing the attention check. One participant failed the seriousness check, and thus was also removed. Yet another observation was deleted as it was a test by the authors. The final sample collected for the analysis consisted of 462 participants (344 women, 108 men, nine non-binary/third gender, one preferred not to say). The participants' ages ranged from 16 to 70 years old with a mean of $M = 23.05$ and a standard deviation of $SD = 9.71$. Data from 35 different nationalities was collected. Nevertheless, most participants were Dutch (51.3%), German (21.0%), or others (27.7%). Of all participants, 112 currently own or have owned a dog, 105 a cat, 122 both and 123 participants had never owned a cat or a dog. The study was approved by the ethics committee of the University of Groningen.

The questionnaire could be accessed online in two ways. Firstly, participants were able to enter through the SONA-system of the University of Groningen. SONA is a software developed to organize and schedule studies as well as to recruit first year psychology students as participants and to allocate participation credits. However, people could also participate by having access to a link to this questionnaire independent from the SONA-system. These participants were invited by the researchers to take part in the study. Participants who were taking part through the SONA-system were exclusively psychology students from the University of Groningen. As compensation for participation in the study via the SONA-system, participants received 0.4 SONA-Credits. Students are required to participate in studies and receive SONA-Credits as a part of the course "Practical Introduction to Research Methods". They choose freely which studies they would like to participate in from a large number of options. If they do not want to participate in studies there is an alternative of a writing assignment for the course mentioned. Participants were able to join from both the international and Dutch tracks with the requirement of understanding English to be able to complete the survey. Other participants who took the questionnaire via a Qualtrics XM link were part of the social environment of the researchers (family, friends, colleagues, etc.). Both these sampling methods make this a convenience sample.

The study has a 2 (Pet Condition: Dog vs. Cat) x 2 (Pet Ownership: participants owning the respective Pet vs. not owning the respective Pet) x 2 (domains: Judgement [positive reaction] vs. Security [negative reaction]) quasi experimental mixed design with repeated measures on the last factor. We ran the analysis in SPSS. Based on a G*power analysis, the desired sample size for the present study is 500 (Repeated Measures ANOVA allowing for within-between interaction, power = 0.8, expected effect-size of 0.15 at $\alpha = 0.05$ [Faul et. al., 2007, 2009]).

Procedure, Group Assignment and Vignettes

The questionnaire was designed and presented on the platform Qualtrics XM, which the participants had access to via SONA or an independent link that was distributed by the researchers. Participants were provided with an informed consent form and an information sheet before starting the experiment. In this information sheet the participants were informed that the aim of the study is to examine understanding of pet behaviour. Then, the questionnaire continues on with questions about demographics and whether the participant owns or has owned a cat, dog or another pet. Based on ownership they were assigned to either the cat or the dog condition. Two scenarios were presented, with questions following after each scenario. These questions asked participants about their feelings towards either their cat or their dog and about the people mentioned in the scenarios. Next, they were asked to answer the Inclusion of Other in the Self (IOS) Scale (Aron et al., 1992), which measures how close the participant feels to their pet. Lastly, the participants were asked about their stereotypes about cats and dogs using the adapted Pet Psychology scale (Plagemann, 2022). The study ended with a seriousness check as well as a debriefing about the goals of the present study.

Condition Assignment

In the beginning of the experiment, participants were assigned to one of two conditions. These conditions differed by the participants' ownership of a dog or a cat. If the participant owns or has ever owned a cat, they were assigned to the cat condition, and the same applies for the dog condition. In case the participant owned both a cat and a dog or neither, they were randomly assigned to one of the two conditions. If the participant did not own a cat or a dog, they were asked to imagine they own either one based on their assigned condition. Thus, condition assignment was partly random but was also dependent on the pre-existing ownership of a cat or a dog. All in all, this left us with four conditions: cat owner/cat

condition ($N=162$), non-owner/cat condition ($N=64$), dog owner/dog condition ($N=177$) and non-owner/dog condition ($N=59$).

Vignettes

In both conditions, participants were exposed to two scenarios. The first scenario featured a negative reaction from the pet (the security scenario); the second featured a positive reaction (the judgement scenario). In both scenarios the participants were asked to imagine that they live together with their pet. The participants were told to imagine that they were looking for a new roommate, scheduling interviews in their apartment at two times, inviting people that are applying for the room, coming in pairs. In the security scenario, after the people come in, the pet has a negative reaction to one person (Person B) and a neutral reaction to another (Person A). In the judgement scenario, the participants were asked to imagine another two people that came over for the viewing. Here, the pet has a positive reaction to one of the applicants (Person D) and a neutral reaction to the other (Person C). The pet's reaction was described through an explanation of its behaviour and its bodily responses to the applicants (see Appendix 2 for complete description of both scenarios). No other information was given about the four people to keep the focus on the pet's reaction.

Measures

This study focused on the influence that a pet's behaviour can have on our feelings towards other people.

Emotions

After each vignette we asked several questions related to the scenario. These questions were the same for both scenarios. First, questions were asked in regards to the participant's perceptions of the pet's behaviour towards the two individuals. Participants rated the pet's feelings towards each stranger on a 7-point scale from 1 "not at all" to 7 "extremely". The emotions were "Happy", "Angry", "Fearful", "Sad", "Curious", "Positive", "Negative", "Friendly" and "Hostile" (see Appendix 2). This was followed by questions about the participants' feelings towards their pet ("Happy", "Disappointed", "Worried", "Embarrassed", "Curious", "Surprised", "Proud", "Angry", "Amused"). Here, they again were asked to indicate the strength of the emotions on a 7-point scale from 1 "not at all" to 7 "extremely" (see Appendix 2).

Next, participants were asked to answer questions about their perception of the two strangers. These questions included two sliders about the preference between the two people. First there was the Liking slider (“Based on the given information, who would you like more?”) with zero being in favour of Person A/C and 100 being in favour of Person B/D. The same applies for the Roommate Preference slider (“Based on this scenario, which of these first 2 persons would you pick for your second bedroom?”). Next, 7-point scale bipolar questions were asked about “Trust vs. Suspicion”, “Friendly vs. Unfriendly”, and “At Ease vs. Threatened” and “Compatible vs. Incompatible” (see Appendix 2). These questions were repeated for all four strangers.

Group Identity

As a measure of group identity, we used the Inclusion of Other in the Self Scale (IOS) (Aron et al., 1992). Participants could choose which image of two circles best represented the relationship between them and their pet. Options were given on a 7-point scale with images of circles representing the degree of closeness (see Appendix 2).

Pet Psychology Scale

We used a modified version of the Pet Psychology Scale developed by Victor Plagemann (2022) to find out about the participants' stereotypes about cats and dogs. The scale consisted of 6 subscales each for cats and dogs and one item as an attention check randomly placed.

The Pet-Psychology scale consisted of the following subscales: “Care for Owner”, “Selfishness”, “Group Mindedness”, “Empathy”, “Judgement”, and “Security”. An example item would be “Cats/Dogs want their owners to be happy” (Care for owner) (See Appendix 2 for more example items). Participants were asked to evaluate their agreement with these statements on a 7-point scale with answers ranging from “Not at All” to “Extremely”.

Attention & Seriousness Check

To improve our data validity we included some items in the questionnaire to evaluate whether the participant paid attention. The last question is a seriousness check where the participants have a chance to indicate if they have taken part seriously in this study or not. It mentions that there will be no consequences if participants answer with “No” to encourage them to answer this question honestly.

Results

Assumption tests and other preliminary analyses

Before our analyses, we conducted Levene's tests on our dependent variables to check for homogeneity, and Shapiro-Wilk tests to check for normality. The dependent variables used for our four hypotheses are the aforementioned Liking and Roommate Preference sliders, which are repeated for the Persons A/B and Persons C/D pairs, and the four bipolar scales, which are repeated for all four persons. The dependent variables thus totaled 20 measures. The Levene's Tests were conducted both by pet type and ownership status. Results indicated that for all but two variables the homogeneity assumption holds. These two exceptions were the Friendly/Unfriendly and Compatible/Incompatible bipolar scales regarding Person B. Shapiro-Wilk tests indicated the normality assumption was violated for all dependent variables. This was unsurprising, however, as we expected participants to frequently select extreme values on both the sliders and bipolar scales.

Next, a manipulation check was performed. As our intention was for the pet's behaviour to be the independent variable, we analyzed if participants actually interpreted this behaviour in the way we expected. We did this by comparing the means of the variables measuring the perceived emotions of the pet towards the strangers via a Paired-Samples T-Test. To reiterate, these emotions were "Happy", "Angry", "Fearful", "Sad", "Curious", "Positive", "Negative", "Friendly" and "Hostile" (Appendix 2). Results showed emotions towards Persons B and D were indeed perceived differently as those towards the controls, and in the expected directions (e.g., they perceived the pet to be less angry towards the control in the Security scenario). As such, manipulation was deemed successful. Detailed results can be found in Appendix 1.

Lastly, we analyzed reliabilities of the subscales of the Pet Psychology Scale by calculating Cronbach's Alphas (Table 1). Results showed reliabilities to be acceptable overall, with some subscales scoring quite high, especially for cats. This indicates we were successful at creating these subscales, and thus that they could be used in our analyses without changes.

Table 1: Reliability of subscales of Pet Psychology Scale

	Questions	Cats	Dogs
		Cronbach's	Cronbach's
Care for owner (1)	4	.81	.63
Selfishness (2)	5	.77	.69
Group mindedness (3)	7	.62	.63
Empathy (4)	4	.88	.77
Judgement (5)	5	.79	.64
Security (6)	5	.77	.67

Pet Psychology Scale

For the Pet Psychology Scale, Paired T-Tests were conducted on each subscale to analyze differences between participants' stereotypes of cats and dogs. Table 2 shows significant differences were found for all subscales. Dogs scored higher in four out of six subscales, with Selfishness and Judgment being the two subscales cats scored higher in. Effect sizes were large with the exception of Judgment, which showed a rather small effect.

Table 2: Paired T-Tests on subscales of Pet Psychology Scale split by pet type

	cats		dogs		<i>t</i> (462)	<i>Cohen's D</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Care For Owner (1)	4.50	1.26	6.05	.76	-26.57**	-1.24
Selfishness (2)	4.44	1.13	3.16	.86	21.18**	.99
Group Mindedness (3)	2.99	.74	5.31	.65	-48.21*	-2.24
Empathy (4)	4.38	1.31	5.68	.82	-22.72**	-1.06
Judgement (5)	4.99	1.06	4.83	.83	2.967**	.14
Security (6)	3.82	1.06	5.74	.74	-35.09**	-1.63

*refers to $p < .05$, ** refers to $p < .001$

Group Identity Measure

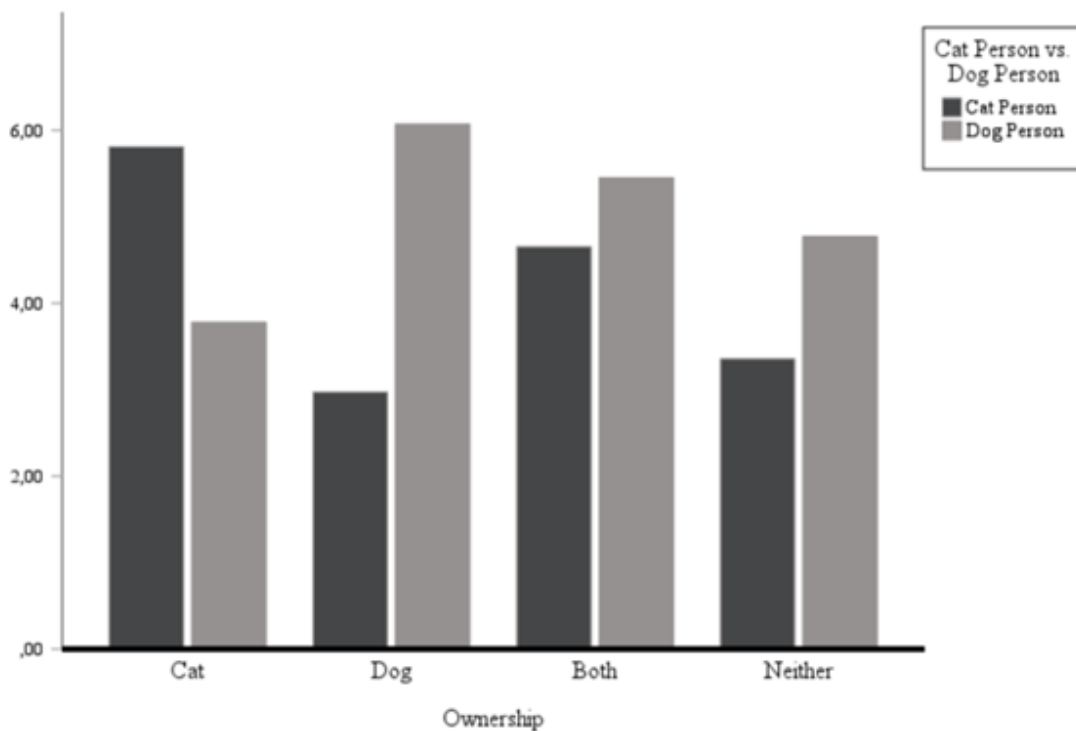
For the group identity measure, an ANOVA was conducted, using both the pet and ownership conditions as factors. A main effect was found for both factors (Table 3), though effect sizes were small. For the pet factor, those in the dog condition scored higher, while for the ownership condition, owners did. No interaction effect was found.

Table 3: ANOVA on Group Identity Measure

Pet condition		<i>M</i>	<i>SD</i>	<i>F</i> (1,458)	<i>Partial η</i> ²
Pet	Cat	4.16	0.05	7.41*	.02
	Dog	4.50	0.05	7.41*	.02
Ownership	Owner	4.52	0.03	5.85*	.013
	Non-owner	4.14	0.06	5.85*	.013
Pet*Ownership				2.24	.005

*refers to $p < .05$, ** refers to $p < .001$

Figure 1: Repeated Measures ANOVA on Cat Person/Dog Person measures split by ownership status



Cat Person/Dog Person Measure

We performed a Repeated Measures ANOVA on the Cat Person and Dog Person measures, split by ownership condition. Participants can either be cat owners, dog owners, owners of both, or neither. Figure 1 shows whether these groups, on average, consider themselves cat and dog persons. Predictably, those who own either a cat or a dog, identify themselves more as respectively cat persons and dog persons. Owners of both, or non-owners consider themselves to be more dog than cat persons.

Hypothesis 1

For our first hypothesis, we predicted that the pet's behaviour would have an effect on participants' evaluations of strangers. We conducted a t-test comparing the sliders to the middle point of 50, which indicates no preference for either stranger, and thus no effect (Table 4). In both scenarios, means differed significantly from this middle point, and in the direction expected: towards the stranger receiving a neutral reaction in the Security scenario, and the stranger receiving a positive reaction in the Judgment scenario. Effect sizes were found to be large. Testing the bipolar scales against the middle point of 4 yielded similar results, with all t-tests yielding p-values of $<.001$. Effect sizes were mostly large, and the means were again in the direction expected. For example, strangers who received a negative reaction of the pet were evaluated as more suspicious. Furthermore, comparing responses towards both strangers within a scenario also yielded significant results, meaning that just as was shown by the sliders, people evaluated them differently from each other, and thus pet behaviour was influential.

Table 4: *T-tests on Sliders compared to neutral point (50)*

Scenario	Slider	<i>M</i>	<i>SD</i>	<i>t</i> (461)	<i>Cohen's D</i>
Security	Liking	20.78	19.42	-32.35**	-1.50
	Roommate	16.87	19.37	-36.75**	-1.71
Judgement	Liking	76.73	18.82	30.52**	1.42
	Roommate	77.93	19.86	30.22**	1.41

*refers to $p < .05$, ** refers to $p < .001$

Hypothesis 2

In the first scenario (Security), we expected dogs to have more influence on participants' feelings towards strangers than cats. We conducted an ANOVA on both sliders for this scenario, split by pet condition, but found no significant difference between both conditions (Table 5). The bipolar scales were analyzed in Repeated Measures ANOVAs, comparing the differences between participants' views of Persons A and Person B between the cat and dog conditions. A significant difference was found between these conditions for three of the four scales, with the Compatible/Incompatible scale being the exception (Table 6). Although this difference showed participants in the dog condition indeed answered more towards the extreme than those in the cat condition for both strangers, effect sizes were small.

Table 5: MANOVA on the four sliders split by pet condition

Scenario	Slider	Cat		Dog		$F(1,458)$	Partial η^2
		M	SD	M	SD		
Security	Liking	22.23	17.24	19.40	21.24	2.46	.005
(A vs. B)	Roommate	17.95	17.08	15.84	21.32	1.37	.003
Judgement	Liking	73.49	19.16	79.83	17.99	13.42**	.028
(C vs. D)	Roommate	74.88	19.41	80.85	19.90	10.65*	.023

*refers to $p < .05$, ** refers to $p < .001$

Table 6: Repeated Measures ANOVA on the bipolar scales for the Security scenario split by pet condition

Bipolar Scales	Person	Cat		Dog		<i>F</i> (1,460)	<i>Partial</i> η^2
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Trust vs. Suspicion	A	2.74	.97	2.62	1.14	4.88*	.01
	B	5.48	1.14	5.74	1.35	4.88*	.01
Friendly vs. Unfriendly	A	2.54	1.02	2.41	1.22	10.74**	.02
	B	4.82	.10	5.28	1.35	10.74**	.02
At ease vs. Threat	A	2.48	1.02	2.28	1.02	6.32*	.01
	B	4.69	1.2	4.89	1.23	6.32*	.01
Compatible vs. Incompatible	A	2.65	1.13	2.57	1.34	1.22	.00
	B	5.31	1.11	5.45	1.43	1.22	.00

*refers to $p < .05$, ** refers to $p < .001$

Hypothesis 3

In the second scenario (Judgment), we expected cats to have more influence on participants' feelings than dogs. We again conducted an ANOVA on the two sliders, and Repeated Measures ANOVAs on the bipolar scales, comparing the cat and dog conditions. Table 5 includes the ANOVA for the sliders, which showed a significant difference between means of the cat and dog conditions for both sliders, with participants in the dog condition answering more towards the extreme. Effect sizes were quite small, however. The Repeated Measures ANOVAs for the bipolar scales only yielded a significant result for the Trust/Suspicion scale, where participants in the dog condition showed a larger difference in trust (in favor of person D) than those in the cat condition (Table 7). However, the effect size was once again small.

Table 7: Repeated Measures ANOVA on the bipolar scales for the Judgment scenario split by pet condition

Bipolar Scales	Person	Cat		Dog		<i>F</i> (1,460)	<i>Partial</i> η^2
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Trust vs. Suspicion	C	3.53	.86	3.34	1.00	4.26*	.01
	D	2.30	1.07	1.88	.984	4.26*	.01
Friendly vs. Unfriendly	C	3.32	1.09	3.07	1.15	.90	.00
	D	2.09	1.06	1.72	0.93	.90	.00
At ease vs. Threat	C	3.20	.97	2.81	1.03	.00	.00
	D	2.15	.10	1.77	.92	.00	.00
Compatible vs. Incompatible	C	3.53	1.10	3.44	1.14	2.83	0.01
	D	2.19	1.11	1.88	1.10	2.83	0.01

*refers to $p < .05$, **refers to $p > .001$

Hypothesis 4

For our last hypothesis, we expected owners to be more strongly influenced by their pets' behaviour than non-owners by their (imagined) pets' behaviour. We used the same measures and analyses as before, this time by ownership status instead of pet condition. An ANOVA on the sliders split by owner condition showed different results between the scenarios. For the Security scenario, a significant result was found for both sliders, albeit with small effect sizes (Table 8). Owners were shown to answer more extremely than non-owners. In the Judgment scenario, neither slider showed a significant difference between the conditions.

Tables 9 and 10 show Repeated Measures ANOVAs for the bipolar scales for the Security scenario and Judgment scenario respectively, comparing the differences between the two strangers between the owner and non-owner conditions. No significant difference was found between the conditions on any of these scales.

Table 8: ANOVA on the four sliders split by ownership condition

Scenario	Slider	Owner		Non-owner		<i>F</i> (1,460)	<i>Partial</i> η^2
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Security	Liking	19.33	17.94	24.79	22.52	7.24*	.015
	Roommate	15.57	17.82	20.47	22.82	5.85*	.013
Judgement	Liking	76.71	18.84	76.77	18.86	.01	.000
	Roommate	77.36	20.31	79.49	18.56	1.04	.002

*refers to $p < .05$, ** refers to $p < .001$

Table 9: Repeated Measures ANOVA on the bipolar scales for the Security scenario split by ownership condition

Bipolar Scales	Person	Owner		Non-owner		<i>F</i> (1, 460)	<i>Partial</i> η^2
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Trust vs. Suspicion	A	2.63	1.03	2.82	1.13	3.27	.007
	B	5.73	1.17	5.28	1.40	3.27	.007
Friendly vs. Unfriendly	A	2.44	1.09	2.55	1.26	.003	.000
	B	5.09	1.17	4.97	1.32	.003	.000
At ease vs. Threat	A	2.37	1.14	2.39	1.08	1.81	.004
	B	4.63	1.24	4.85	1.09	1.81	.004
Compatible vs. Incompatible	A	2.57	1.25	2.72	1.22	.411	.001
	B	5.44	1.24	5.20	1.39	.411	.001

*refers to $p < .05$, ** refers to $p < .001$

Table 10: RM-ANOVA on the bipolar scales for the Judgment scenario split by ownership

Bipolar Scales	Person	Owner		Non-owner		<i>F</i> (1,460)	Partial η^2
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Trust vs. Suspicion	C	3.38	.93	3.57	.96	.85	.002
	D	2.09	1.04	2.06	1.05	.85	.002
Friendly vs. Unfriendly	C	3.16	1.12	3.28	1.16	.27	.001
	D	1.91	1.02	1.88	1.00	.27	.001
At ease vs. Threat	C	2.99	1.03	3.05	.97	.91	.002
	D	1.93	1.00	2.03	.92	.91	.002
Compatible vs. Incompatible	C	3.45	1.13	3.59	1.09	.42	.001
	D	2.04	1.45	2.01	1.03	.42	.001

*refers to $p < .05$, ** refers to $p < .001$

Discussion

First, let us discuss the stereotypes participants held about cats and dogs, as measured in the Pet Psychology Scale. As shown in Table 2, results of this scale indicated that dogs scored higher on four of its six subscales. In addition to the Security subscale, which was created to measure protective behavior, the other subscales dogs outscored cats on were Care for Owner, Group Mindedness, and Empathy. These subscales all measure social behaviour of some sort, and thus the high ratings for dogs on these subscales indicates that participants rated dogs as more social. This, of course, fits with common stereotypes of dogs. Dogs scoring lower on the Selfish subscale than cats is also in line with this, as this subscale measures the opposite of social behaviour. On Judgment, cats also scored slightly higher. Considering we created the Judgment scenario with the expectation cats would score higher there, this makes sense. However, the difference between the two pets is very small on this subscale. As such, our predictions about participants' evaluations of dogs are supported more strongly.

There seems to be a bit of a bias towards dogs in general. On the Pet Psychology Scale, while cat owners unsurprisingly were more positive about cats than dog owners, even these cat owners still rated dogs highly on the social domains. In addition, as Figure 1 shows, more people reported to see themselves as dog persons than cat persons.

Since dogs are evaluated as more social, it would not be surprising if participants in the dog condition rated the relationship between them and their pets as being closer compared to those in the cat condition. This is indeed what we found in the Group Identity Measure (Table 3), though cats are not far behind.

Hypotheses

For hypothesis 1, we predicted the pet's behaviour to have an effect on the evaluation of strangers. We indeed found strong support for this (Table 4). Thus, we can safely say that participants evaluated the strangers in the vignettes differently depending on what treatment the strangers received from their (real or imaginary) pet.

Overall, results were less strong for the other hypotheses. For hypothesis 2 and 3, we expected to see a difference between the cat and dog conditions, with the Security scenario being predicted to lead to a stronger effect of dogs' behaviours, and the Judgment scenario being predicted to lead to a stronger effect of cats' behaviours. We will start with the Security scenario.

Our simplest (and thus arguably most important) dependent variables were the two sliders indicating a preference of either stranger on two dimensions (liking and roommate preference). This showed no significant difference between the cat and dog conditions, which does not support hypothesis 2 (Table 5). The bipolar scales (Table 6) mostly show significant differences in favor of the dog being more influential, but the effects are small. Thus, while our main measures (the sliders) do not support hypothesis 2, the bipolar scales mostly do. Combine this with the fact that, while the difference between the conditions is not significant on the sliders, they do go in the directed prediction (more influence of the dog), there is some support of the hypothesis. In other words, the results are a bit mixed, but do trend towards the direction we predicted.

Considering the impetus of this study was Plagemann's (2022), which indicated dogs were more influential in a similar vignette, it is surprising to find this scenario did not quite replicate the strength of Plagemann's findings. There are some differences in our study that

might explain this discrepancy. Our vignette takes place inside the participant's home, whereas Plagemann's equivalent to the security scenario takes place during a trip to the vet. Cats tend to be more stressed out when taking them to the vet, as it is uncommon to travel with them, unlike with dogs. It is conceivable then, that cats would have more influence in our scenario, as the trip to the vet might be seen as the reason they behave as they did in Plagemann's story. Furthermore, both of our scenarios are similar to each other, and involve two strangers each, with one being a control. As such, there might be sufficient differences to account for the our weaker findings compared to Plagemann.

The results of the Pet Psychology Scale showed dogs are seen as more social. As such, our findings in this scenario are in the direction expected, as it makes sense these more social animals have more influence. Especially so in light of the subscale Security, which deals with similar protective behaviour as this scenario of the same name. Based on how overwhelmingly dogs are seen as more social on the Pet Psychology Scale, however, the support for this hypothesis based on the sliders and bipolar scales is quite weak.

The results of the Judgment scenario contradict what we predicted in hypothesis 3. Plagemann (2022) found dogs were more influential, so we created the Judgment scenario to conceptualize something where cats could be more influential instead. If dogs are seen as more sociable, and cats as more fickle, a cat's decision to be friendly with a stranger might have a bigger impact, since they do not just like everyone as dogs do. The sliders (Table 5) did not support this idea, and in fact showed that dogs had more influence than cats on participants' preferences. The bipolar scales for this scenario (Table 7) showed a significant difference from one scale (Trust vs. Suspicion), which like the slider showed more influence from dogs. The other measures do show differences in the direction towards the dog, but are not significant. So, similar to the Security scenario, there is support, though not overwhelming support, for the dog having more influence.

The means on the subscale 'Judgment' in the Pet Psychology Scale showed a difference between cats and dogs, with cats scoring higher. This effect, however, was very small. It is worth pointing out this subscale deviates from most of the other subscales (where dogs score significantly higher with large effect sizes), however in an of itself, the small difference in this subscale does not lead one to expect a large effect in participants' answers. One would, however, expect a larger influence of the dog to be paired with dogs scoring higher in the Judgment subscale. It is possible the subscale and the scenario do not tap into the same facet as sufficiently as we intended.

For hypothesis 4, we predicted pet owners to be more strongly influenced than non-owners, as non-owners are not in the same in-group as a real-life pet, but only an imagined one. As can be seen in Table 8, even this imaginary pet has a strong influence on participants' answers. Non-owners were in fact so strongly influenced, that they scored similarly to owners. Across the sliders (Table 8) and bipolar scales (Tables 9 and 10), only the sliders for the security scenario showed a significant difference, and only with a small effect size. The differences between owners and non-owners are small enough to reject hypothesis 4.

One worthwhile finding to point out here are the means on the Group Identity Measure (Table 3). While we did find a significant difference in means between pet owners and non-owners, this difference is quite small, with owners averaging 4.51, and non-owners 4.14. This means that non-owners are almost as close to their imaginary pets than owners are to their actual pets. This seems to indicate that non-owners have no trouble understanding the kind of bond humans have with their pets, which could mean that for the purpose of the vignettes, they found it easy, even as non-owners, to see the theoretical pet and themselves as a group. Alternatively, it could be participants were imagining how close they would have been to the pet, had it been real. Either way, looking at the results of the Group Identity Measure, it is not surprising that we found the owners and non-owners to be so close to each other in the vignettes.

Conclusion

In all, we found a clear influence from pets' behaviours on participants' feelings towards strangers, from both cats and dogs. Dogs were shown to have more influence overall, though the support is not overwhelming. While cats were shown to be a little bit less influential, it cannot be overlooked that our feline friends do influence us just as their canine counterparts do. The Pet Psychology Scale indicated dogs are seen as more social, which is in line with the results of our scenarios.

Some limitations of this study should be mentioned that could lead to some caution interpreting the results, and might explain the lack of results in certain areas. For starters, this being a vignette study brings some downsides with it. Reading about a situation is quite different from actually being in it, and participants are merely answering based on how they think they would react in a situation. We cannot be sure if they would actually feel like they indicated in our study in real life. Though at the very least, the fact participants showed a

strong preference between strangers seems to indicate that in our study they did not have too much trouble placing themselves in the vignettes.

Secondly, while we kept the details of the stories as neutral and nondescript as possible to avoid possible influence of factors besides the one intended (the pet's behaviour), this does make the vignette less true-to-life. While it is important to know for sure we are measuring the effect of the facet we intended, in real life these other factors will, in fact, come into play. That might make results look nice on paper, but in a real setting, the effect of the pet's behaviour might be diminished, or even nigh on disappear, once factors like the strangers' traits come into play. In light of the already often weak or mixed results in some areas, this could paint a pessimistic picture.

Lastly, our sample is somewhat limited. The majority consists of college-aged, European students at the RUG. In addition, we had quite a few more pet owners than non-owners. While this meant that most people could imagine their actual pet in the vignettes, this does mean the sample might be a tad skewed when considering differences between owners and non-owners.

This last limitation is easy to overcome in future studies, but the shortcomings of vignette studies are harder to control for. After all, it is difficult to involve animals in experiments. Especially so in this case, as the idea of the study is for the pet to elicit a certain behaviour and to note the effect it has on the owner, not just to see what effect something has on the pet. You can hardly expect Rex or Mittens to act out the vignettes exactly as we would want them to. This would require some creative thinking for sure, but it would be worth it to more closely approach real-life situations. After all, this study does provide support for the idea that our pets can influence us in areas interesting to psychology, and research in this area is very sparse. Various questions and topics came up during the writing of this thesis that turned out to have nothing even remotely similar to them in the literature.

With the limited scope and resources of a bachelor thesis, this study is a mere glimpse of what could be done in this field. Even within the limits of a vignette studies, other facets could be explored. Can a cat or dog's behaviour influence your view on people you know as well as strangers? Can their behaviour influence how we view ourselves? And, speaking as a cat person myself, hopefully we can find areas where cats have more influence than dogs after all. With cats and dogs being part of the life of millions, it is clear they play a large factor in our social lives, so we can only hope future research will explore this topic further.

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Appendix 1: Perceived Emotion of Pet Towards Strangers A & B and C & D

	Emotions	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Person A x B	Happy	1.77	1.49	25.63	461	<.001
	Angry	-3.76	1.84	-43.89	461	<.001
	Fearful	-3.73	1.87	-42.93	461	<.001
	Sad	-.94	1.64	-12.41	461	<.001
	Curious	-1.24	1.73	-15.43	461	<.001
	Positive	1.83	1.65	23.83	461	<.001
	Negative	-3.97	1.70	-50.18	461	<.001
	Friendly	1.64	1.64	21.40	461	<.001
	Hostile	-3.97	2.26	-37.79	461	<.001
Person C vs. D	Happy	-2.76	1.67	-35.58	461	<.001
	Angry	.36	.90	8.62	461	<.001
	Fearful	.50	1.10	9.79	461	<.001
	Sad	.35	.95	7.90	461	<.001
	Curious	-3.69	1.94	-40.91	461	<.001
	Positive	-2.88	1.71	-36.21	461	<.001
	Negative	.84	1.24	14.70	461	<.001
	Friendly	-3.17	1.77	-38.55	461	<.001
	Hostile	.25	1.27	4.22	461	<.001

Appendix 2: Questionnaire

Informed Consent & Research Information

INFORMATION AND INFORMED CONSENT FOR THE STUDY:

"Pet Psychology"

Research Code: PSY-2223-S-0065

You receive this information because you are invited to participate in a research study investigating people's understanding of their pet's behaviour and how that behaviour may shape our perceptions. **For this study, it is required that you use a desktop computer or a laptop, as only such devices ensure that the contents will be appropriately displayed. We kindly ask you not to participate using a tablet or a smartphone.**

Researchers:

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Affiliation of all researchers: University of Groningen, The Netherlands

Aim of the study:

The aim of the study is to examine understanding of Pet Behavior.

Procedure:

First, you will respond to a few questions in which you are asked to provide some demographic information (e.g. your age). After that you will read short descriptions of situations involving a pet and answer a few questions about these situations (e.g. what you would feel in those situations). It is crucial to the successful completion of the study that you read the short descriptions of the situations completely and carefully.

It is essential that you complete this study in one go (without interruptions) when you are on your own. We kindly ask you to respond to all questions by providing the answer that best represents your opinion, thoughts, or feelings. There are no right or wrong answers.

This study takes approximately 15 minutes.

There are no risks associated with participating in this study.

Compensation: You will receive 0.4 SONA Credits for participating in this study.

Participation is voluntary:

Participating in this study is completely voluntary. It is your choice whether to participate or not. You have the right to decline to participate and withdraw from the research at any time without having to provide any reasons. Withdrawing from this research does not entail any negative consequences.

Your privacy and personal data:

The data that will be collected during this study will be treated confidentially. Data processing takes place for education/training purposes, to write a Bachelor thesis. The data will only be handled by the Researchers. Your SONA number will be recorded in this study to allow compensation. Information that could identify you as a person, such as your SONA number, will be removed after assigning you the credit and won't be shared with other researchers. Thus, only anonymized data might be disseminated such that your anonymity is guaranteed. This means that research data that may be published, for example in scientific journals, cannot identify you.

In sum: as soon as you have received your credit we will remove the SONA identifier so that your data are no longer practically traceable to you (i.e. as far as possible anonymous).

More information:

If you have any questions about this research, you can contact the researchers: Nikita Stienissen (Email: n.stienissen@student.rug.nl) or Iida Liukkonen (Email: i.v.liukkonen@student.rug.nl). If you have any complaints about this research, you can contact the Ethics Committee of the Psychology department of the University of Groningen via ecp@rug.nl mentioning the research code (PSY-2223-S-0065).

By participating in this research, you indicate that you are doing this on a voluntary basis. You also consent to the use of your data for the purposes that have been mentioned here.

If you have read the above and agree to participate in the study, please answer “Yes” to begin the study. If you do not consent or want to withdraw, you can quit the questionnaire without any consequences.

- yes

Demographics

Age	Please indicate your age. (Open Question)
Gender	Please indicate your Gender. <ul style="list-style-type: none"> • Female • Male • Non binary/third gender • Prefer not to say
Nationality	Please indicate your nationality. <ul style="list-style-type: none"> • Dutch • German • English • Other (text box)
Ownership dog	Do you own a dog now or have owned a dog? <ul style="list-style-type: none"> • Yes • No
Ownership cat	Do you own a cat now or have owned a cat? <ul style="list-style-type: none"> • Yes • No
Ownership other pet	Do you own a pet, or have you owned a pet other than a dog or a cat (for example with your family)? <ul style="list-style-type: none"> • Yes, a (text box) • No

Assignment to condition:

1. Dog is owned, but cat not: assignment to dog condition

2. Cat is owned, but dog not: assignment to cat condition

3. Neither is owned: random assignment

4. Both are owned: random assignment

-
Intro for conditions: For the following questions, please think of your cat/dog (based on condition). If you don't own a cat/dog (or haven't owned one), please imagine you have one.

Scenario 1: Security (negative Valence)

<p>Description (dog condition)</p>	<p>Imagine you are looking for a new roommate. You're conducting interviews for the day and you first invite two people to come in for a viewing in your apartment, which you share with your dog.</p> <p>On the day of the viewing, your doorbell rings. You are on your way to open the door, where your dog is sitting next to a window. When you open the door to let the first person in, Person A reaches out to shake your hand. Your dog seems uninterested.</p> <p>A few minutes later, you hear the doorbell ring once again and allow the second person to come in. Person B reaches out to shake your hand when suddenly you notice that your dog runs in between you and Person B. It bares its teeth, starts barking and has its tail down between its legs.</p> <p>Please answer the following questions about this situation:</p>
<p>Description (cat condition)</p>	<p>Imagine you are looking for a new roommate. You're conducting interviews for the day and you first invite two people to come in for a viewing in your apartment, which you share with your cat. On the day of the viewing, your doorbell rings. You are on your way to open the door, where your cat is sitting next to a window. The first person arrives and you open the door to let them in, Person A reaches out to shake your hand. Your cat is not interested.</p>

	<p>After a few minutes, the doorbell rings once again and Person B arrives. You open the door and Person B reaches out to shake your hand when suddenly you notice that your cat starts hissing at Person B. Its tail is held down close to its body and the fur on its back stands up. Its ears are now turned backwards and are flat on the head.</p> <p>Please answer the following questions about this situation.</p>
<p>Emotions pet towards acquaintance</p>	<p>How do you think your cat/dog feels towards Person A in this situation? (7-point scale: not at all to extremely)</p> <ul style="list-style-type: none"> ● Happy ● Angry ● Fearful ● Sad ● Curious ● Positive ● Negative ● Friendly ● Hostile
<p>Emotions pet towards acquaintance</p>	<p>How do you think your cat/dog feels towards Person B in this situation? (7-point scale: not at all to extremely)</p> <ul style="list-style-type: none"> ● Happy ● Angry ● Fearful ● Sad ● Curious ● Positive ● Negative ● Friendly ● Hostile

<p>Emotions Participant towards pet</p>	<p>How do you feel towards your cat/dog in this situation? (7-point scale: not at all to extremely)</p> <ul style="list-style-type: none"> ● Happy ● Disappointed ● Worried ● Embarrassed ● Curious ● Surprised ● Proud ● Angry ● Amused
<p>Cognitive Empathy (about Person A)</p>	<p>Do you understand the feelings of your cat/dog? (7-point scale: not at all to extremely)</p>
<p>Affective Empathy (about Person A)</p>	<p>Do you share the feelings of your cat/dog? (7-point scale: not at all to extremely)</p>
<p>Cognitive Empathy (about Person B)</p>	<p>Do you understand the feelings of your cat/dog? (7-point scale: not at all to extremely)</p>
<p>Affective Empathy (about Person B)</p>	<p>Do you share the feelings of your cat/dog? (7-point scale: not at all to extremely)</p>
<p>Slider Liking</p>	<p>Who do you like more? (100-point slider, from A to B)</p>
	<p>The following questions refer to Person A.</p>
<p>Bipolar Scale Trustful vs. Suspicion</p>	<p>How does your cat/dog behaviour make you feel towards Person A (7-point scale: Trustful to Suspicious)</p>

<p>Bipolar Scale At ease vs. Threat</p>	<p>How does your cat/dog behaviour make you feel towards Person A (7-point scale: At ease to Threat)</p>
<p>Bipolar Scale Friendly vs. Unfriendly</p>	<p>Based on your cat/dog behaviour could Person A be potentially friendly or unfriendly? (7-point scale: Unfriendly to Friendly)</p>
<p>Bipolar Scale Compatible vs. Incompatible</p>	<p>Based on your cat/dog behaviour could Person A be potentially compatible or incompatible? (7 point scale: Compatible to Incompatible)</p>
	<p>The following questions refer to Person B.</p>
<p>Bipolar Scale Trustful vs. Suspicion</p>	<p>How does your cats/dogs behaviour make you feel towards Person B? (7-point scale: Trustful to Suspicious)</p>
<p>Bipolar Scale At ease vs. Threat</p>	<p>How does your cats/dogs behaviour make you feel towards Person B? (7-point scale: At ease to Threat)</p>
<p>Bipolar Scale Friendly vs. Unfriendly</p>	<p>Based on your cats/dogs behaviour could Person B be potentially friendly or unfriendly? (7-point scale: Unfriendly to Friendly)</p>
<p>Bipolar Scale Compatible vs. Incompatible</p>	<p>Based on your cats/dogs behaviour could Person B be potentially compatible or incompatible? (7 point scale: Compatible to Incompatible)</p>
<p>Slider Roommate Preference</p>	<p>Based on this scenario, which of these first 2 persons would you pick for your second bedroom? (100-point slider, from A to B)</p>

Scenario 2: Judgement (positive Valence)

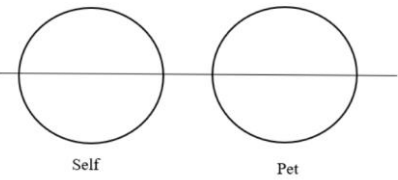
<p>Description (dog condition)</p>	<p>Later the same day, Person C comes in for a viewing in your apartment. A few minutes later another person rings the doorbell and you invite Person D in. You show both persons the apartment.</p> <p>Later you go into the living room, where your dog is lying in its bed. You invite the two people to sit on your couch, to have small talk. You ask them if they want something to drink. After both answer with yes, you go to the kitchen counter to prepare the drinks. From the kitchen you can still see the room, as well as your dog.</p> <p>Suddenly, you notice that your dog walks by Person C and is approaching Person D, wagging its tail fast, the ears upright. Then it lays down in front of Person D, displaying their belly.</p> <p>Please answer the following questions about this situation</p>
<p>Description (cat condition)</p>	<p>Later the same day, another two people come in for a viewing in your apartment. Person C arrives first and you show them the apartment. Later you go into the living room, where your cat is laying in its bed. The doorbell rings once again and Person D arrives. You let the two people sit down on your couch. You ask them if they want something to drink. After both answer with yes, you go to the kitchen counter to prepare the drinks. From the kitchen you can still see the room, as well as your cat.</p> <p>Suddenly, your cat walks by Person C, ignoring them, and approaches Person D, purring and rubbing its head against their leg. Then it jumps on their lap and lays down.</p> <p>Please answer the following questions about this situation.</p>

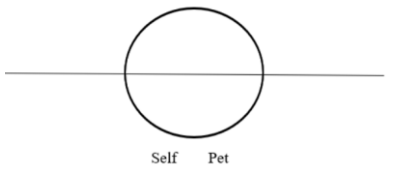
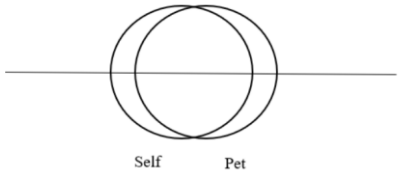
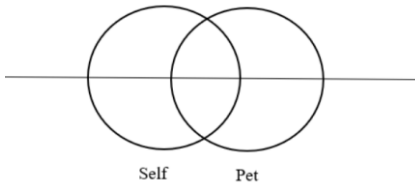
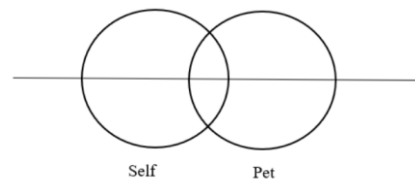
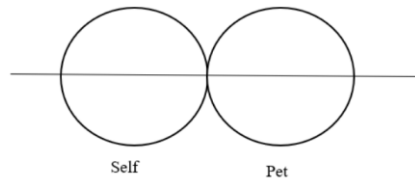
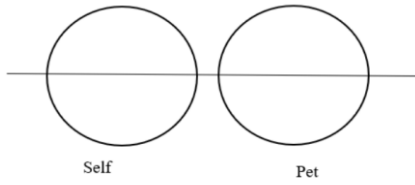
<p>Emotions pet towards acquaintance</p>	<p>How do you think your cat/dog feels towards the acquaintance in this situation? (7-point scale: not at all to extremely)</p> <ul style="list-style-type: none">● Happy● Angry● Fearful● Sad● Curious● Positive● Negative● Friendly● Hostile
<p>Emotions Participant towards acquaintance</p>	<p>How do you feel towards Person A in this situation? (7-point scale: not at all to extremely)</p> <ul style="list-style-type: none">● Happy● Angry● Fearful● Sad● Curious● Positive● Negative● Friendly● Hostile
<p>Emotions Participant towards acquaintance</p>	<p>How do you feel towards Person B in this situation? (7-point scale: not at all to extremely)</p> <ul style="list-style-type: none">● Happy● Disappointed● Worried● Embarrassed● Curious● Surprised● Proud● Angry● Amused

Cognitive Empathy (about Person C)	Do you understand the feelings of your cats/dogs? (7-point scale: not at all to extremely)
Affective Empathy (about Person C)	Do you share the feelings of your cats/dogs? (7-point scale: not at all to extremely)
Cognitive Empathy (about Person D)	Do you understand the feelings of your cats/dogs? (7-point scale: not at all to extremely)
Affective Empathy (about Person D)	Do you share the feelings of your cats/dogs? (7-point scale: not at all to extremely)
Slider Liking	Who do you like more? (100-point slider, from C to D)
	The following questions refer to Person C.
Bipolar Scale Trustful vs. Suspicion	How does your cats/dogs behaviour make you feel towards Person C? (7-point scale: Trustful to Suspicious)
Bipolar Scale At ease vs. Threat	How does your cats/dogs behaviour make you feel towards Person C? (7-point scale: At ease to Threat)
Bipolar Scale Friendly vs. Unfriendly	Based on your cats/dogs behaviour could Person C be potentially friendly or unfriendly? (7-point scale: Unfriendly to Friendly)
Bipolar Scale Compatible vs. Incompatible	Based on your cats/dogs behaviour could Person C be potentially compatible or incompatible? (7 point scale: Compatible to Incompatible)
	The following questions refer to Person D.

<p>Bipolar Scale Trustful vs. Suspicion</p>	<p>How does your cats/dogs behaviour make you feel towards Person D? (7-point scale: Trustful to Suspicious)</p>
<p>Bipolar Scale At ease vs. Threat</p>	<p>How does your cats/dogs behaviour make you feel towards Person D? (7-point scale: At ease to Threat)</p>
<p>Bipolar Scale Friendly vs. Unfriendly</p>	<p>Based on your cats/dogs behaviour could Person D be potentially friendly or unfriendly? (7-point scale: Unfriendly to Friendly)</p>
<p>Bipolar Scale Compatible vs. Incompatible</p>	<p>Based on your cats/dogs behaviour could Person D be potentially compatible or incompatible? (7 point scale: Compatible to Incompatible)</p>
<p>Slider Roommate Preference</p>	<p>Based on this scenario, which of these first 2 persons would you pick for your second bedroom? (100-point slider, from C to D)</p>

Group Identity measure:

<p>Pictorial measure of Group Identity</p>	<p>The images you see below represent yourself and your pet as well as how much you see the both of you as a group. The more the circles overlap, the closer you see your relationship with your cat/dog.</p> <p>Which image best represents the relationship you have with your Pet?</p>  <p style="text-align: center;">Self Pet</p>
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Pet psychology scale

Subscale	Item name	In my view...
Care for Owner	PPS_CareOwner_C_1	Cats care for their owners (7-point scale: not at all to extremely)
Care for owner	PPS_CareOwner_D_1	Dogs care for their owners (7-point scale: not at all to extremely)
Care for owner	PPS_CareOwner_C_2	Cats want their owners to be happy (7-point scale: not at all to extremely)
Care for owner	PPS_CareOwner_D_2	Dogs want their owners to be happy (7-point scale: not at all to extremely)
Care for owner	PPS_CareOwner_C_3	Cats like their owners more than strangers (7-point scale: not at all to extremely)
Care for owner	PPS_CareOwner_D_3	Dogs like their owners more than strangers (7-point scale: not at all to extremely)
Care for owner	PPS_CareOwner_C_4 (Reversed)	Cats don't care about their owners (7-point scale: not at all to extremely)
Carelessness check		Pick number 3 (7-point scale: not at all to extremely)
Care for owner	PPS_CareOwner_D_4	Dogs don't care about their owners (7-point scale: not at all to extremely)
Selfishness	PPS_Selfish_C_1	Cats behaviour serves only their own needs (7-point scale: not at all to extremely)

Selfishness	PPS_Selfish_D_1	Dogs behaviour serves only their own needs (7-point scale: not at all to extremely)
Selfishness	PPS_Selfish_C_2	Cats are selfish (7-point scale: not at all to extremely)
Selfishness	PPS_Selfish_D_2	Dogs are selfish (7-point scale: not at all to extremely)
Selfishness	PPS_Selfish_C_3	Cats are manipulative (7-point scale: not at all to extremely)
Selfishness	PPS_Selfish_D_3	Dogs are manipulative (7-point scale: not at all to extremely)
Selfishness	PPS_Selfish_C_4	Cats are sly (7-point scale: not at all to extremely)
Selfishness	PPS_Selfish_D_4	Dogs are sly (7-point scale: not at all to extremely)
Selfishness	PPS_Selfish_C_5	Cats know how to get what they want (7-point scale: not at all to extremely)
Selfishness	PPS_Selfish_D_5	Dogs know how to get what they want (7-point scale: not at all to extremely)
Group mindedness	PPS_GroupMind_C_1	Cats are cooperative (7-point scale: not at all to extremely)
Group mindedness	PPS_GroupMind_D_1	Dogs are cooperative (7-point scale: not at all to extremely)

Group mindedness	PPS_GroupMind_C_2	Cats act on behalf of their owner (7-point scale: not at all to extremely) +
Group mindedness	PPS_GroupMind_D_2	Dogs act on behalf of their owner (7-point scale: not at all to extremely) +
Group mindedness	PPS_GroupMind_C_3	Cats prefer being in a group (7-point scale: not at all to extremely)
Group mindedness	PPS_GroupMind_D_3	Dogs prefer being in a group (7-point scale: not at all to extremely)
Group mindedness	PPS_GroupMind_C_4	Cats see themselves as part of a household(7-point scale: not at all to extremely)
Group mindedness	PPS_GroupMind_D_4	Dogs see themselves as part of a household (7-point scale: not at all to extremely)
Group mindedness	PPS_GroupMind_C_5 (reversed coded)	Cats prefer being on their own (7-point scale: not at all to extremely) +
Group mindedness	PPS_GroupMind_D_5 (reversed coded)	Dogs prefer being on their own (7-point scale: not at all to extremely) +
Group mindedness	PPS_GroupMind_C_6 (reversed coded)	Cats are independent (7-point scale: not at all to extremely) +
Group mindedness	PPS_GroupMind_D_6 (reversed coded)	Dogs are independent (7-point scale: not at all to extremely) +

Group mindedness	PPS_GroupMind_C_7 (reversed coded)	Cats like to go their own way (7-point scale: not at all to extremely)
Group mindedness	PPS_GroupMind_D_7 (reversed coded)	Dogs like to go their own way (7-point scale: not at all to extremely)
Empathy	PPS_Empathy_C_1	Cats understand the emotions of humans (7-point scale: not at all to extremely)
Empathy	PPS_Empathy_D_1	Dogs understand the emotions of humans (7-point scale: not at all to extremely)
Empathy	PPS_Empathy_C_2	Cats can perceive what somebody feels (7-point scale: not at all to extremely)
Empathy	PPS_Empathy_D_2	Dogs can perceive what somebody feels (7-point scale: not at all to extremely)
Empathy	PPS_Empathy_C_3	Cats are affectionate (7-point scale: not at all to extremely)
Empathy	PPS_Empathy_D_3	Dogs are affectionate (7-point scale: not at all to extremely)
Empathy	PPS_Empathy_C_4	Cats show compassion (7-point scale: not at all to extremely)
Empathy	PPS_Empathy_D_4	Dogs show compassion (7-point scale: not at all to extremely)
Judgment	PPS_Judge_C_1	Cats show if they like someone. (7-point scale: not at all to extremely)
Judgment	PPS_Judge_D_1	Dogs show if they like someone (7-point scale: not at all to extremely)
Judgment	PPS_Judge_C_2	Cats are picky about who they like (7-point scale: not at all to extremely)

Judgment	PPS_Judge_D_2	Dogs are picky about who they like (7-point scale: not at all to extremely)
Judgment	PPS_Judge_C_3	Cats vary in their preferences about people (7-point scale: not at all to extremely)
Judgment	PPS_Judge_D_3	Dogs vary in their preferences about people (7-point scale: not at all to extremely)
Judgment	PPS_Judge_C_4	Cats are good judges of character (7-point scale: not at all to extremely)
Judgment	PPS_Judge_D_4	Dogs are good judges of character (7-point scale: not at all to extremely)
Judgment	PPS_Judge_C_5	Cats have a good intuition about people (7-point scale: not at all to extremely)
Judgment	PPS_Judge_D_5	Dogs have a good intuition about people (7-point scale: not at all to extremely)
Security	PPS_Security_C_1	Cats sense which strangers are a potential threat (7-point scale: not at all to extremely)
Security	PPS_Security_D_1	Dogs sense which strangers are a potential threat (7-point scale: not at all to extremely)
Security	PPS_Security_C_2	Cats are motivated to protect their owners (7-point scale: not at all to extremely)
Security	PPS_Security_D_2	Dogs are motivated to protect their owners (7-point scale: not at all to extremely)
Security	PPS_Security_C_3	Cats are loyal (7-point scale: not at all to extremely)

Security	PPS_Security_D_3	Dogs are loyal (7-point scale: not at all to extremely)
Security	PPS_Security_C_4	Cats are willing to take risks to protect their owner (7-point scale: not at all to extremely)
Security	PPS_Security_D_4	Dogs are willing to take risks to protect their owner (7-point scale: not at all to extremely)
Security	PPS_Security_C_5 (reverse coded)	Cats do not worry about their owner's safety (7-point scale: not at all to extremely)
Security	PPS_Security_D_5 (reverse coded)	Dogs do not worry about their owner's safety (7-point scale: not at all to extremely)

Seriousness check

Seriousness	<p>We would like to know if you answered this questionnaire seriously. There will be no consequences for you if you answer the following question with no. You still get your SONA-credits!</p> <p>Did you answer the questions in this questionnaire seriously?</p> <ul style="list-style-type: none"> ● Yes ● No
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