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Personality Psychology

Pets and Politics: Do Liberals and Conservatives Differ in Their Preferences for Cats Versus Dogs?

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Liberals and conservatives are perceived to disagree on most aspects of life, even seemingly trivial things like pet choice. Although the question of whether liberals and conservatives differ in their liking for cats and dogs has been sporadically investigated, few peer-reviewed reports exist, results are mixed, and most reports examine this topic indirectly. In this registered report we employed a large existing dataset to examine whether political identity predicts liking of cats and dogs, and a preference for one over the other. Self-reported political identity was used to predict explicit evaluations of both pets, in addition to performance on an Implicit Association Test (IAT) measuring pet preference. Greater conservativism predicted more negative evaluations of cats and an overall preference for dogs over cats, even after controlling for relevant demographics.

In recent years, the differences between liberals and conservatives have become increasingly highlighted (Agiesta, 2017; Blankenhorn, 2018; Doherty, 2017; Pew Research Center, 2017). These differences seem to run deep, permeating all aspects of everyday life (e.g., the ability to recall dreams; Bulkeley, 2012) and may even influence pet choice. For example, states with the highest percentage of cat owners in America tend to be liberal-leaning, and states with the highest levels of dog owners tend to be conservative-leaning (Bratskeir, 2016). However, the majority of this past research has examined the topic indirectly and almost all reports appear in non-peer-reviewed sources, such as mass-media articles and blog posts (Bratskeir, 2016; Coren, 2013, 2019; Wilson & Haidt, 2014). Thus, the goal of the current research is to empirically investigate whether liberals and conservatives differ in their liking for cats and dogs. To do so, we employed a large dataset from the Attitudes, Identities, and Individual Differences (AIID) study, which included self-ratings of political identity, explicit evaluations of—and preferences for—cats and dogs, and scores on an Implicit Association Test (IAT) measuring attitudes towards these pets (Hussey et al., 2018). Extending past work, we also conducted exploratory analyses examining potential mediators of the relationship between political identity and pet preference.

Political Identity and Pet Preferences

Roughly 65% of Americans own a pet (Mutz, 2010) with the three most common animals being dogs, cats, and fish. Over 48 million homes have at least one dog, over 31 million homes have a cat, and over 1 million homes have at least one fish (Čirjak, 2020). There is some evidence that suggests political identity plays a role in whether people prefer cats or dogs. Conservativism, for example, is associated with dog ownership and a greater preference for dogs over cats compared to liberalism (Bratskeir, 2016; Coren, 2013; Mutz, 2010). Liberalism is also associated with cat ownership, but rather confusingly, it is also related to a preference for dogs over cats (Mutz, 2010; Wilson & Haidt, 2014). This is not the only example of complex or mixed evidence for this question. Some findings suggest that political identity is a better predictor of cat preferences than dog preferences because dogs are generally preferred over cats, resulting in a restriction of range (Coren, 2013). This cannot explain, however, why the percentage of dog ownership by state appears to be a better predictor of election results compared to the percentage of cat-ownership (Coren, 2019).

Although there is some evidence of a difference in pet preference based on political identity, the findings are predominantly based on single-item measurement of pet preference and reported in non-peer-reviewed outlets. These methodological concerns, as well as the mixed results, emphasize a need for more research to understand whether differences truly exist between liberals and conservatives and their pet preferences. Are conservatives really "dog people" and liberals truly "cat people?" To further investigate this question, we conducted an informal examination of the states with the highest and lowest percentage of dog and cat ownership (San Filippo, 2018), comparing these data with state-level election results from the 2016 election (CNN, 2016). We found that 7 of the 10 states in which for-

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mer President Donald Trump had the most support were also among the 10 states with the highest percentage of dog owners in the country (Tennessee, West Virginia, Oklahoma, Arkansas, Nebraska, Idaho, and Mississippi). In comparison, only 3 of those 10 states had the highest levels of cat ownership (West Virginia, Idaho, and Arkansas; CNN, 2016; San Filippo, 2018). Exploring these data further, we find that 8 of the 10 states with the *lowest* percentage of people who voted for Trump also have the lowest rate of dog ownership in the country (Vermont, Massachusetts, Maryland, New York, Illinois, Rhode Island, Connecticut, and New Jersey). However, for these same states that had the lowest support for Trump, cat ownership also appears to be low, with 6 of these 10 states also having the lowest levels of cat ownership (California, Maryland, New York, Illinois, Rhode Island, and New Jersey). These 10 most liberal states also tend to be the ones with the least number of pets in general: 7 of the 10 score among the lowest in the country for pet ownership (Massachusetts, Maryland, New York, Illinois, Rhode Island, Connecticut, and New Jersey). Comparatively, 7 of the 10 most conservative states have the highest pet ownership in general (Wyoming, West Virginia, Oklahoma, Arkansas, Nebraska, Idaho, and Mississippi). When it comes to the type of pet owned, conservatives seem more likely to own dogs than cats, with no such difference existing among liberals. That said, it may be that more rural states, with less population density, tend to both vote conservative and make it easier to own a dog. To address this concern, we ran a partial point biserial correlation with the percentage of households owning each type of pet for each state predicting whether that state voted for Trump or Clinton. After controlling for population density, states that voted for Trump in 2016 still tended to have a higher percentage of dog ownership (pr = .58, 95% CI [.35, .74], p < .001). When repeating the same analysis for cat ownership, there was no statistically significant relationship (pr = .13, 95% CI [-.16, .40], p = .38; For the full analysis see https://osf.io/d3f7y/).

Reviewing these past findings and our own initial examination, it seems as though there are some differences in pet preference between liberals and conservatives. Why might political identity predict whether someone likes cats or dogs? Certain personality traits that are known to differ between liberals and conservatives may provide an explanation.

Personality, Political Identity, and Pet Preferences

Social dominance orientation (SDO), the preference for hierarchy, hierarchical group structures, and the domination of higher groups over lower groups, is one individual difference that has been associated with pet preference. Self-reported dog people tend to score higher on SDO and competitiveness than self-reported cat people (Alba & Haslam, 2015). Those who prefer dogs might be higher in SDO because dogs are highly trainable and submissive by nature, which complements a preference for social hierarchy (Alba & Haslam, 2015). Although conservatism is typically associated with SDO, no research to date has looked at the association between SDO, conservatism, and pet preferences. Exploring SDO as a potential mediator of the association between political identity and pet preferences was thus one of the goals of the current research.

Highly related to SDO is Right Wing Authoritarianism (RWA): a strong belief in authority and a need to follow the leadership of authority figures (Dallago et al., 2008). Not surprisingly, RWA is also related to conservativism (Tarr & Lorr, 1991) and predicted whether people voted for Trump in the 2016 election (MacWilliams, 2016). It has also been proposed that RWA could predict a preference for dogs (McGreal, 2014). Since being loyal to authority is valued in those high in RWA, and dogs are seen as more loyal and obedient than cats, dogs may better complement someone high in RWA (McGreal, 2014). As with SDO, however, this proposed mediation has not yet been formally examined. Thus, RWA was also explored as a potential mediator.

Past work on personality traits has also demonstrated that conservatives score higher on Conscientiousness and lower on Openness to Experience, compared to liberals (Carney et al., 2008). This maps directly on the finding that self-reported "dog people" also score higher on Conscientiousness and lower on Openness to Experience, compared to "cat people" (Gosling et al., 2015). Further, relative to cat people, dog people tend to score higher on Extraversion and Agreeableness, and lower on Neuroticism (Gosling et al., 2015). That said, Extraversion, Agreeableness, and Neuroticism are not strong predictors of political identity and are thus less relevant for our question (Carney et al., 2008). We therefore examined Conscientiousness and Openness to Experiences as possible mediators of the relationship between political identity and pet preference.

Due to the planned missing nature of the AIID study, data for these individual difference variables are missing in most cases. Although it was estimated that approximately 100 participants would complete each of these measures prior to us seeing these data, in reality, the numbers were lower than anticipated. Specifically, 67 participants completed the RWA measure, 88 participants completed the SDO measure, and 101 participants completed the measures of Conscientiousness and Openness to Experience.

The Current Research

Although there is an abiding interest in whether political identity is linked to pet preferences, research in this area is primarily non-peer-reviewed, sometimes employs indirect measures (e.g., using state-level data to make inferences about individuals; Bratskeir, 2016), and often relies upon single-item measurement of pet preference. Not surprisingly, the results of this past work are mixed, and it is not yet clear how liking for cats or dogs, or preference for one over the other, is related to political identity. Moreover, there has been no empirical investigation of what may explain the difference between liberals and conservatives with respect to pet preference. Our study allows for the best possible examination of this topic to date, involving multiple measures for pet preference and a large sample size. In addition, we explored potential mediators of this difference, most notably social dominance orientation (Alba & Haslam, 2015), Right Wing Authoritarianism (McGreal, 2014), and Conscientiousness and Openness to Experience (Gosling et

Table 1. Preregistered IAT Exclusion Criteria

	Exclusion Criterion
1	35% responses < 300ms responses in any one practice block
2	25% responses < 300ms responses in any one critical test block
3	10% responses < 300ms in the critical test blocks
4	50% error rate in any one practice block
5	40% error rate in the practice blocks
6	40% error rate in any one critical test block
7	30% error rate in the critical test blocks
8	>=10% responses >10000ms in critical blocks

al., 2015).

The current study allows us to directly examine whether people who report being more liberal or conservative have a greater liking for cats or dogs, or a preference for one over the other. It was expected that conservatism would correlate positively with a liking for dogs, but not cats. In addition, it was expected that being more conservative would positively predict a preference for dogs over cats. Finally, our exploratory examination of mediators was expected to show that higher levels of SDO, RWA, and Conscientiousness, and lower Openness to Experience would mediate the relationship between political identity and pet preference.

Methods and Data Analysis Plan

Participants

The data for this study came from the AIID study, which includes data from around 200,000 respondents (Hussey et al., 2018).[1] After applying our exclusion criteria, the current sample consists of 2425 participants. For the IAT analyses, the participant exclusion criteria were largely chosen by the AIID group and are reported in Table 1. We preregistered that we would follow these same exclusion criteria. In reality, this left us with a very small sample size for the IAT analyses. As a result, we chose not to employ the last exclusion criterion (#8), in consultation with the editor, and as a deviation from our preregistration. Lastly, we also removed any participant who was under the age of 16. We also preregistered to remove anyone who failed to complete 10% or more of all the relevant questions. However, the planned missingness of the design does not permit such a criterion, so we deviated from our preregistration and did not apply it. Most participants in this study were female (65.20%) and White (70.68%) and ranged in age from 16–86 years (M = 30.97, SD = 12.28). In addition, most were American citizens (75.13%) residing in the US (76.29%). Of these, the majority were liberal-leaning, with 15.46% being "Strongly liberal," 25.61% "Moderately liberal," and 9.86% who were "Slightly liberal" (50.93% in total). For the remainder, 25.61% reported being "Neutral (moderate)," with the breakdown for conservatives as follows: 6.85% "Slightly conservative," 7.59% "Moderately conservative," and 3.05% "Strongly conservative" (17.49% in total). About 6% of the sample did not respond to this question (145 participants). The most common occupation was "student" (16.41%) and the most common religious affiliation was "none" (31.22%). Detailed demographics appear in Table 2.

Measures

Political Identity. Political identity was measured with a single item in which participants rated themselves using a 7-point scale. This scale ranged from *Strongly Liberal* (-3) to *Strongly Conservative* (+3), with the midpoint labeled as *Neutral (Moderate)* (0).

Explicit Attitudes and Preference for Cats and Dogs. A series of face-valid self-report items were used to assess feelings towards cats and dogs. Unless otherwise stated, all explicit items were answered on a 10-point scale with only the anchors changing. Items measuring people's gut feelings and actual feelings towards cats and dogs were examined with items soliciting "Gut reactions toward cats (/dogs, in a separate question)" and "Actual reactions toward cats (/dogs)." Additionally, participants were asked, "How positive or negative do you feel towards cats (/dogs)?" For these questions, the anchors were *Strongly Negative* and *Strongly Positive*. Participants were also asked "How warm or cold do you feel towards cats (/dogs)?" (anchors: *Cold* to *Warm*), "How much do you like or dislike cats (/dogs)?" (anchors: *Strongly Dislike* to *Strongly Like*), and "Considering only the positive things about cats (/dogs), and ignoring the negative things, how positive are those things?" (6-point scale from *Not at all Positive* to *Very Positive*). In order to measure liking of cats and dogs we pre-registered the use of factor analysis to extract a single factor for each based on these items. However, as a result of the missingness of the design, this proved difficult, so instead we employed structural equation modelling to create latent variables for the evaluations of cats and dogs and preference between the two. All structural equation models use a full information maximum likelihood estimator to handle the large amount of missing data.

1 We were provided with 15% of responses to see if this research question could be answered with this data set. We did not see the entirety of the data until after submitting our pre-registration and getting acceptance of our Stage 1 Registered Report.

Table 2. Participant Demographic Information

Variable	Demographic Categories	*n* (percentage)
Sex	Female	1581 (65.0%)
	Male	827 (34.1%)
	NA	17 (0.8%)
Education	Less than high school	99 (4.1%)
	High school graduate	184 (7.6%)
	Some college or associate degree	851 (35.1%)
	Bachelor's degree	710 (29.3%)
	Graduate degree or graduate education	511 (21.1%)
	NA	70 (2.9%)
English Fluency	Not fluent	6 (0.3%)
	English knowledgeable	20 (0.8%)
	English fluent (infrequent use)	35 (1.4%)
	English fluent (regular use)	269 (11.1%)
	English as primary language	2042 (84.2%)
	NA	53 (2.2%)
Ethnicity	American Indian or Alaskan Native	12 (0.5%)
	Asian or Pacific Islander	152 (6.3%)
	Black	113 (4.7%)
	Hispanic	162 (6.7%)
	White	1714 (70.7%)
	Other/Unknown	59 (2.4%)
	Multiracial (black/white)	22 (0.9%)
	Multiracial (other)	113 (4.7%)
	NA	78 (3.2%)
Income	Less than $25,000	428 (17.7%)
	$25,000-$49,999	477 (19.7%)
	50,000 $74,999	390 (16.1%)
	$75,000- 149,999	445 (18.4%)
	Over $150,000	178 (7.3%)
	Don't know	391 (16.1%)
	NA	116 (4.8%)
Religiosity	Not at all religious	892 (36. 8%)
	Somewhat religious	726 (29.9%)
	Moderately religious	522 (21.5%)
	Very religious	203 (8.4%)
	NA	82 (3.4%)

To measure pet preference, we subtracted liking for cats from liking for dogs, such that higher scores indicate a greater preference for dogs over cats. An item explicitly asking about preference was also employed: "Which do you prefer, cats or dogs?" (7-point scale from *Strongly prefer cats to dogs* to *Strongly prefer dogs to cats*).

Implicit Preference for Cats and Dogs. Implicit bias towards either cats or dogs (i.e., a relative preference), was measured using an Implicit Association Test (IAT). The IAT measures implicit associations by pairing relevant stimuli (e.g., cats and dogs) with positive and negative words. If participants take longer to select the positive word with a specific stimulus compared to a negative word, this suggests a negative automatic association with that stimulus. Conversely, faster selection of a positive word compared to a negative word when presented with a specific stimulus suggests a positive association (Greenwald et al., 1998). The present study employed an IAT using Cats and Dogs as categories, which were then paired with positively- (e.g., Gorgeous) and negatively-valenced words (e.g., Putrid). Participants completed 7 blocks, with blocks 3–4 and 6–7 being the key test trials. Test blocks 3 and 6 both had 20 trials and blocks 4 and 7 had 40 trials. The practice trials (blocks 1, 2, and 5) involved simply practicing the correct response for each association (e.g., pressing the correct key for 'Cat' when a picture of a cat came up). Blocks 3–4 and 6–7 com-

bined these responses such that each trial had four categories with various pairings, allowing the examination of implicit associations with cats and dogs. Scoring of the IAT data was conducted using two separate methods, a *D* (or 'difference') measure and a Probabilistic Index (PI). The *D* measure looks at the difference in response times between two blocks by subtracting one from the other (e.g., practice blocks minus key test blocks), and dividing the result by the standard deviation of the scores in both conditions (Greenwald et al., 2003). In our case, a positive *D* score represents a faster categorization for cats when paired with positive words over negative words, implying a more positive attitude towards cats compared to dogs. Although the *D* measure is the original scoring and the one employed most often, others have argued that there are superior ways to score the IAT that are more robust to outliers and skew (De Schryver et al., 2018). Thus, we repeated our analyses using the PI, which gives the probability that a trial's response time is faster than another trial, with PI scores ranging from 0 to 1. In our case, scores above 0.5 and closer to 1 indicate a greater probability that trials pairing cats with positive terms were responded to faster than when paired with negative terms. Scores below 0.5 and closer to 0 indicate that trials pairing dogs with positive terms were likely faster than those paired with negative terms. And a score of 0.5 means there is no difference between the two. Note that the PI only gives information about which trial is likely to be responded to more quickly, but not the magnitude of this difference (De Schryver et al., 2018).

Social Dominance Orientation. SDO was measured using a shortened version of the Social Dominance Orientation scale (Pratto et al., 1994; α = .81). A total of 12 items were rated on a 6-point scale from *Strongly Disagree* to *Strongly Agree*. Example items included: "Some people are just inferior to others," "In getting what you want, it is sometimes necessary to use force against other groups," and "All groups should be given an equal chance in life (reverse-scored)."

Right Wing Authoritarianism. RWA was measured using 20 items from the Right Wing Authoritarianism scale (Altemeyer, 1996; α = .93). Example items included: "What our country REALLY needs, instead of more 'civil rights,' is a good stiff dose of law and order," "Our country will be destroyed someday if we do not smash the perversions eating away at our moral fiber and traditional beliefs," and "It is important to protect fully the rights of radicals and deviants (reverse-scored)." All items were rated on a 6-point scale ranging from *Strongly Disagree* to *Strongly Agree*.

Conscientiousness and Openness to Experience. Both Conscientiousness and Openness to Experience were measured using their respective subscales from the Big Five Inventory (John & Srivastava, 1999). Items measuring Conscientiousness included "I see myself as a person who perseveres until the task is finished" and "I see myself as a person who is a reliable worker" (α = .86). Example items measuring Openness to Experience include "I see myself as a person who has as an active imagination," and "I see myself as a person who values artistic, aesthetic experiences" (α = .85). Items from both subscales were answered using a 6-point scale ranging from *Strongly Disagree* to *Strongly Agree*.

Demographics. Participants also answered questions regarding their age, sex, citizenship, residence, class, education, English fluency, ethnicity, income, occupation, religion, and religiosity. Detailed demographic information can be seen in Table 2. Further, age, sex, income, and ethnicity were controlled for in the analyses, to determine if the effects still hold after considering demographics. These variables were chosen for analysis as age, sex, and ethnicity have all been shown to affect cat and dog ownership. Income was also included as there are mixed results as to whether it affects cat and dog ownership (Endenburg et al., 1990; Martins et al., 2013; Murray et al., 2010; Siegel, 1995).

Procedure

Participants were recruited online and began by answering the demographic questions. Following this, participants completed the 7 IAT blocks before answering the explicit questions about their attitudes towards cats and dogs. Finally, a subset of participants completed the SDO scale, RWA scale, and BFI.

Data Analysis

Our main analysis was conducted with structural equation modeling. Political identity was specified as an observed, exogenous variable, and liking for cats and dogs were specified as latent variables, indicated by the cat and dog evaluation items, respectively. Difference scores between cat and dog evaluation items were computed by subtracting cat items from dog items. We then used these difference scores to indicate a latent variable representing a preference for dogs over cats. Regressions paths were specified between political identity and pet latent variables in separate models. Demographic variables were subsequently included as control variables. Next, a similar analysis was conducted using the IAT scores, exploring whether political identity predicts a stronger implicit bias toward dogs over cats. These analyses allowed us to examine the main hypothesis that greater conservativism is associated with a stronger liking for dogs, and a stronger preference for dogs over cats.

We also thought it might be possible that only very strong political beliefs will trickle down to influence distal everyday opinions like pet preferences. To examine this possibility, we investigated whether those with either strongly liberal or strongly conservative beliefs differ in their pet preferences (i.e., scores at the end of the scale, +3 or -3). Unfortunately, this analytic approach meant analyzing a far smaller sample size (e.g., fewer than 65 staunch conservatives), resulting in a loss of statistical power and a contingent decrease in sensitivity to detect effects. As a result, the details of these analyses are reported in the Appendix and they should be interpreted cautiously.

Lastly, we examined SDO, RWA, Conscientiousness, and Openness to Experience as potential mediators. We first examined the raw correlations between the mediators, political identity, and pet preference, preregistering that we would test mediators that correlate with both political identity and pet preference at .10 or greater. In practice, none of the potential mediators correlated with all measures, however, RWA, SDO, and Openness to Experience correlated

Table 3. Mean Scores on Pet Evaluation Items

	Mean	*SD*	Mean	*SD*
	Cat		Dog	
Gut Feelings	6.51	2.93	7.84	2.36
Actual Feelings	6.66	2.75	8.00	2.13
Positive Feelings	6.52	2.85	7.97	2.16
Warmth	6.54	2.78	7.97	2.20
Overall Liking	6.81	2.78	7.91	2.28
Only Positive Feelings	4.59	1.41	5.27	1.10

Note. Responses to all items were made on a 10-point scale, except for "only positive feelings" which was a 6-point scale.

above .10 on some of the measures of political identity and pet evaluations (see Table A1). We therefore deviated from our preregistration and examined RWA, SDO, and Openness to Experience as potential mediators. Bootstrapped mediation analyses were used to test whether likely mediators help to explain any association between political identity and pet preference. However, because of the small samples available for these analyses, we also recommend interpreting them cautiously. Our pre-registration, analysis scripts, and all associated materials are on OSF (https://osf.io/d3f7y/).

Results

Mean scores of the pet evaluation items are reported in Table 3; there was a greater preference for dogs over cats across all items. We first hypothesized that greater conservativism would predict a stronger liking for dogs. To examine this, we created a structural equation model with political identity predicting evaluations of dogs. This model had good fit (RMSEA = 0.02, SRMR = 0.03, CFI = 1.00, TLI = 1.00). Political identity was a weak and statistically nonsignificant predictor of evaluations of dogs (b = 0.05, 95% CI [-0.01, 0.11], SE = 0.03, p = .07). We then included our control variables of age, gender, income, and ethnicity and (RMSEA = 0.02, SRMR = 0.03, CFI = 0.99, TLI = 0.98). After controlling for these variables, political identity remained a weak predictor of evaluations of dogs, falling right on the threshold for statistically significance (b = 0.06, 95% CI [-0.001, 0.12], SE = 0.03, p = .05; Figure 1). Though approaching statistical significance, these weak associations are not strong support for our hypothesis.

Next, we built models examining how evaluations of cats relate to political identity. The first model, which included political identity and evaluations of cats, had good fit (RMSEA = .005, SRMR = 0.02, CFI = 1.00, TLI = 1.00). Although not explicitly hypothesized, but still in line with our reasoning, greater conservativism predicted more negative evaluations of cats (b = -0.18, 95% CI [-0.26, -0.11], SE = 0.04, p < .001). Re-running this model with our control variables (i.e., age, gender, income, and ethnicity) produced a model with good fit (RMSEA = .006, SRMR = 0.02, and CFI = 1.00, TLI = 1.00), and conservatism continued to predict more negative evaluations of cats after accounting for these control variables (b = -0.17, 95% CI [-0.25, -0.10], SE = 0.04, p < .001).

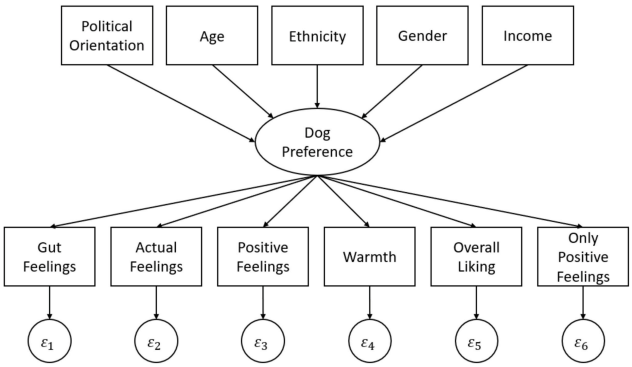

Figure 1. Structural equation model for political identity predicting preference for dogs

Note. All the models shared the same structure, with the sole difference being whether evaluations of dogs, cats, or preference for dogs over cats was being predicted. Age, ethnicity, gender, and income are included as control variables.

Lastly, we hypothesized that conservatism would predict a stronger preference for dogs over cats. To examine this possibility, we first created a difference score by subtracting the evaluations of cats from dogs, with higher scores indicating a greater preference for dogs. The first model, including just political identity and this difference score, had good fit (RMSEA < 0.001, SRMR = 0.03, and CFI = 1.00, TLI = 1.00). Greater conservativism predicted a stronger preference for dogs over cats (b = 0.25, 95% CI [0.15, 0.35], SE = 0.05, p < .001). In a second model that included the control variables this relationship remained (RMSEA = 0.01, SRMR = 0.02, CFI = 1.00, TLI = 1.00), confirming our hypothesis (b = 0.24, 95% CI [0.14, 0.34], SE = 0.05, p < .001). When examining the single item of pet preference, greater conservatism also correlated with a preference for dogs over cats (r(1765) = .11, 95% CI [.06, .15], p < .001). This correlation barely changed after control variables were taken into account (pr(1711) = .10, 95% CI [.05, .15], p < .001). Together, these results provide evidence in favor of our hypothesis that conservativism predicts more negative evaluations of cats and a stronger preference for dogs over cats. These effects, however, are generally small in magnitude.

When comparing only those who espoused strong liberal or conservative beliefs, the same pattern of results was observed. Strong conservatism was not associated with evalu-

ations of dogs, but it did predict more negative evaluations of cats and a preference for dogs over cats. Because of the small sample for this analysis, however, these results should be interpreted with great caution; the details of these analyses appear in the Appendix.

IAT Scores

Next, we examined whether political identity predicts IAT scores, using both the D and PI scoring method (n = 1869). The D score, representing a more positive attitude towards cats over dogs, was correlated with political identity (r(1759) = -.09, 95% CI [-.14, -.05], p < .001). Consistent with our reasoning, those who were more conservative had a more negative implicit evaluation of cats compared to dogs. This association held even after controlling for age, sex, income, and ethnicity (pr(1701) = -.07, 95% CI [-.12, -.03], p = .002).

We repeated these analyses with the PI scoring, in which a score closer to 1 suggests a more positive evaluation of cats and a score closer to 0 a more positive evaluation of dogs. There was a statistically significant relationship between PI score and political identity (r(1759) = -.09, 95% CI [-.14, -.05], p < .001), and this effect remained after including the control variables (pr(1701) = -.07, 95% CI [-.12, -.03] p = .002). In line with our prediction, conservatives had a more positive evaluation of dogs over cats.

Mediation via Individual Differences

Finally, we examined three potential mediators for these relationships: RWA, SDO, and Openness to Experience, with 67, 88, and 101 individuals completing these measures, respectively. Mediation analyses were conducted with structural equation models using bootstrapped standard errors (5000 bootstraps; Table 4). These models found that RWA acted as a mediator of the relationship between political identity and cat evaluations, and the relationship between political identity and a preference for dogs over cats. However, for Openness and SDO, the confidence intervals for the indirect effect included 0 for all models, indicating no evidence of mediation. The model fit statistics for the RWA models are adequate, but SRMR indicates there are error residuals not captured by the model. This, combined with the small samples, mean that these results should be interpreted with great caution.

Discussion

In line with our hypotheses, conservativism is related to an overall preference for dogs over cats. Further, consistent with our overall reasoning (though not explicitly hypothesized), conservativism is also related to a negative evaluation of cats. These relationships remain even after controlling for relevant demographic information (i.e., age, gender, income, and ethnicity). Although people across the political spectrum show a greater liking for dogs overall (see Table 3), those who tend to be more conservative show less of an explicit liking for cats and have a stronger liking for dogs relative to cats. A similar pattern of results was seen with the results of the IAT score, with conservatives having a more positive implicit evaluation of dogs relative to cats. Our mediation analysis found evidence that RWA mediated the relationship between political identity and cat evaluations, and the relationship between political identity and a preference for dogs over cats (no mediation was observed for evaluations of dogs). But Openness to Experience and SDO did not mediate any of the relationships between political identity and pet preferences. Importantly, however, the magnitude of these effects was small, with a one unit change in political identity (on a 7-point scale) predicting about a 1% to 2% change in pet evaluations and preferences. This is to be expected, as pet preference is likely a rather distal reflection of other, more specific, traits that are captured indirectly by political identity.

The question of whether pet preferences coincide with differences in political identity continues to attract great public interest. In fact, after the 2020 federal election in the US, articles were written about how then-president-elect Biden was hoping to unite the country and "[bridge] the chasm between the nation's cat people and dog lovers" by adopting a cat in addition to bringing his two dogs when moving into the White House (Luscombe, 2020). Though primarily meant to amuse, this anecdote does illustrate how the divide between cat and dog people is often associated with political divides. Our study provides the first direct and preregistered evidence that political identity is indeed associated with pet preferences, with respect to cats and dogs.

Our results are also consistent with much of the extant research on this topic. Cat ownership is higher in more liberal states (Bratskeir, 2016) and voting for McCain in 2008 (the conservative candidate) was related to state-level ownership of dogs, fish, horses, ferrets, and rodents, but not cats (Mutz, 2010). Interestingly, however, past findings associating liberalism with a liking for cats deviates from our own examination of state-level data, which found that cat ownership was not statistically significantly associated with voting for Trump.

Although the current research demonstrates that political identity predicts cat and dog preferences, the goal of this work is not to increase the already large divide between political partisans. In fact, pets may actually help bring together people of different political stripes. In a 2020 survey of cat and dog owners, for example, 64% of respondents reported that they would be more likely to talk to a person from a different political party if the person had a pet (Banfield Pet Hospital, 2020). In addition, knowing the other person has a pet had helped 45% of participants end an argument with those with differing political opinions (Banfield Pet Hospital, 2020).

Limitations and future directions

The main limitation of the present study was the large amount of missing data, an unavoidable outcome of the study design over which we had no control. Because our analyses were preregistered before we had an opportunity to see the actual data, we did not know how many participants completed each component until after pre-registration. As a result, some of the analyses we pre-registered proved to be too underpowered to be reliable (i.e., exploration of potential mediators and extreme scores). This is indeed unfortunate, as these analyses would have helped us

Table 4. Mediation analyses for RWA, SDO, and Openness to Experience

Dog Evaluations		RWA		SDO		Openness	
Direct Effect		*B*	95% CI	*B*	95% CI	*B*	95% CI
	Pol. ID → Dog	0.04	[-0.20, 0.45]	0.09	[-0.24, 0.32]	0.10	[-0.01, 0.23]
Indirect Effect							
	Pol. ID → M → Dog	0.01	[-0.38, 0.25]	-0.04	[-0.26, 0.28]	-0.05	[-0.16, 0.04]
Paths							
	Pol. ID → M	0.35*	[0.19, 0.47]	0.18*	[0.04, 0.29]	-0.15*	[-0.26, -0.02]
	M → Dog	0.04	[-1.06, 0.70]	-0.22	[-2.29, 2.43]	0.32	[-0.28, 0.96]
Fit Statistics	RMSEA	0.02		0.02		0.02	
	SRMR	0.13		0.11		0.10	
	CFI	0.94		0.97		0.97	
	TLI	0.94		0.96		0.96	
Cat Evaluations		RWA		SDO		Openness	
Direct Effect		*B*	95% CI	*B*	95% CI	*B*	95% CI
	Pol. ID → Cat	0.16	[-0.12, 0.70]	-0.34*	[-0.60, -0.05]	-0.10	[-0.24, 0.06]
Indirect Effect							
	Pol. ID → M → Cat	-0.35*	[-0.88, -0.07]	0.15	[-0.12, 0.41]	-0.09	[-0.23, 0.03]
Paths							
	Pol. ID → M	0.33*	[0.18, 0.46]	0.17*	[0.03, 0.28]	-0.15*	[-0.26, -0.03]
	M → Cat	-1.04*	[-2.33, -0.31]	0.90	[-0.68, 7.23]	0.58	[-0.18, 1.32]
Fit Statistics	RMSEA	0.02		0.02		0.02	
	SRMR	0.11		0.11		0.09	
	CFI	0.95		0.98		0.98	
	TLI	0.94		0.97		0.98	
Pet Preference		RWA		SDO		Openness	
Direct Effect		*B*	95% CI	*B*	95% CI	*B*	95% CI
	Pol. ID → Pref.	-0.25	[-0.84, 0.17]	0.42*	[0.06, 0.73]	0.21*	[0.03, 0.38]
Indirect Effect							
	Pol. ID → M → Pref.	0.49*	[0.09, 1.09]	-0.18	[-0.47, 0.18]	0.04	[-0.10, 0.19]
Paths							
	Pol. ID → M	0.34*	[0.19, 0.46]	0.17*	[0.04, 0.28]	-0.14*	[-0.26, -0.02]
	M → Pref.	1.45*	[0.32, 2.82]	-1.04	[-6.79, 1.12]	-0.28	[-1.17, 0.64]
Fit Statistics	RMSEA	0.02		0.02		0.02	
	SRMR	0.11		0.10		0.08	
	CFI	0.95		0.98		0.98	
	TLI	0.95		0.97		0.98	

Note. * CI does not include 0. Pol. ID = Political identity. M = Mediator. Pet Preference refers to the preference of dogs over cats. All analyses are run with 5000 bootstraps.

to answer many interesting questions. Future research remains necessary to examine whether certain traits mediate the relationship between political identity and pet ownership. A second limitation is the measure of political identity employed in these archival data, which was a single item. Employing several items can help reduce measurement error and also allow for a greater breadth of construct coverage. Thus, studies designed to examine this question should include more items to measure political identity. Finally, the current study employed a cross-sectional design, making it difficult to make causal claims about the nature of this relationship between political identity and pet preferences.

Conclusion

Based on a large sample, we found that greater conservatism predicts less liking for cats and a greater preference for dogs over cats. The fact that our results were consistent across explicit and implicit measures, and also after controlling for relevant demographic factors, means that this analysis provides the strongest and most direct evidence to date that political identity is a robust predictor of pet pref-

erences. One implication of this research is that the differences represented across the political spectrum would seem to filter down into everyday life, influencing even rather distal phenomena like pet preferences. A greater understanding of why and how these differences emerge will hopefully provide a greater understanding of why partisan differences seem so difficult to bridge.

Data Accessibility Statement

The stage 1 report, preregistration, participant data, and analysis scripts can be found on this paper's project page on OSF (https://osf.io/d3f7y/). Because this was a secondary data analysis we do not have the original stimuli and presentation materials.

Competing Interests

The authors declare no conflict of interest.

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REFERENCES

Agiesta, J. (2017, October 5). *Democrats, Republicans see eye-to-eye on almost nothing, according to an extensive new poll*. CNN Politics. https://www.cnn.com/2017/10/05/politics/poll-partisans-growing-apart/index.html

Alba, B., & Haslam, N. (2015). Dog people and cat people differ on dominance-related traits. *Anthrozoös*, *28*(1), 37–44. https://doi.org/10.2752/089279315X14129350721858

Altemeyer, B. (1996). *The Authoritarian Specter*. Harvard University Press.

Banfield Pet Hospital. (2020, May 26). *New survey reveals effects stay-at-home order may have on pets and their owners*. Banfield Pet Hospital. https://www.banfield.com/about-us/news-room/press-releases-announcements/new-survey-suggests-human-animal-bond-stronger-tha

Blankenhorn, D. (2018, May 16). *The top 14 causes of political polarization*. The American Interest. https://www.the-american-interest.com/2018/05/16/the-top-14-causes-of-political-polarization/

Bratskeir, K. (2016, March 29). *7 quirky differences between democrats and republicans*. HuffPost. https://www.huffingtonpost.ca/entry/democrat-republican-differences-lifestyle_n_56e979fee4b0b25c918406e0

Bulkeley, K. (2012). Dream recall and political ideology: Results of a demographic survey. *Dreaming*, *22*(1), 1–9. https://doi.org/10.1037/a0026170

Carney, D. R., Jost, J. T., Gosling, S. D., & Potter, J. (2008). The secret lives of Liberals and Conservatives: Personality profiles, interaction styles, and the things they leave behind. *Political Psychology*, *29*(6), 807–840.

Čirjak, A. (2020, August 20). *The most popular animals owned as pets in the US*. World Atlas. https://www.worldatlas.com/articles/the-most-popular-animals-owned-as-pets-in-the-us.html

CNN. (2016). *Presidential Results*. CNN Politics. https://www.cnn.com/election/2016/results/president

Coren, S. (2013, June 25). *Do politics matter when it comes to loving cats or dogs?* Psychology Today. https://www.psychologytoday.com/us/blog/canine-corner/201306/do-politics-matter-when-it-comes-loving-cats-or-dogs

Coren, S. (2019, August 27). *Dog ownership predicts voting behavior — Cats do not*. Psychology Today. https://www.psychologytoday.com/ca/blog/canine-corner/201908/dog-ownership-predicts-voting-behavior-cats-do-not

Dallago, F., Cima, R., Roccato, M., Ricolfi, L., & Mirisola, A. (2008). The correlation between right-wing authoritarianism and social dominance orientation: The moderating effects of political and religious identity. *Basic and Applied Social Psychology*, *30*(4), 362–368. https://doi.org/10.1080/01973530802502333

De Schryver, M., Hussey, I., De Neve, J., Cartwright, A., & Barnes-Holmes, D. (2018). The PIIRAP: An alternative scoring algorithm for the IRAP using a probabilistic semiparametric effect size measure. *Journal of Contextual Behavioral Science*, *7*, 97–103. https://doi.org/10.1016/j.jcbs.2018.01.001

Doherty, C. (2017, October 5). *Key takeaways on Americans' growing partisan divide over political values*. Pew Research Center. https://www.pewresearch.org/fact-tank/2017/10/05/takeaways-on-americans-growing-partisan-divide-over-political-values/

Endenburg, N., Hart, H., & de Vries, H. W. (1990). Differences between owners and nonowners of companion animals. *Anthrozoös*, *4*(2), 120–126. https://doi.org/10.2752/089279391787057242

Gosling, S. D., Sandy, C. J., & Potter, J. (2015). Personalities of self-identified "dog people"and "cat people." *Anthrozoös*, *23*(3), 213–222. https://doi.org/10.2752/175303710X12750451258850

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology*, *74*(6), 1464–1480. https://doi.org/10.1037/0022-3514.74.6.1464

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and Using the Implicit Association Test: I. An Improved Scoring Algorithm. *Journal of Personality and Social Psychology*, *85*(2), 197–216. https://doi.org/10.1037/0022-3514.85.2.197

Hussey, I., Hughes, S., & Nosek, B. A. (2018). *The implicit and explicit Attitudes, Identities, and Individual Differences (AIID) Dataset* [Data set]. https://osf.io/pnjwf/

John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and Research* (2nd ed., pp. 102–138). Guilford.

Luscombe, R. (2020, November 28). *Dogs and cats living together: Joe Biden says feline will join White House pets*. The Guardian. https://www.theguardian.com/us-news/2020/nov/28/joe-biden-cat-white-house-dogs

MacWilliams, M. (2016, January). *The one weird trait that predicts whether you're a Trump supporter*. Politico Magazine. https://www.politico.com/magazine/story/2016/01/donald-trump-2016-authoritarian-213533

Martins, C. M., Mohamed, A., Guimarães, A. M. S., de Barros, C. da C., Pampuch, R. dos S., Svoboda, W., Garcia, R. de C. M., Ferreira, F., & Biondo, A. W. (2013). Impact of demographic characteristics in pet ownership: Modeling animal count according to owners income and age. *Preventive Veterinary Medicine*, *109*(3–4), 213–218. https://doi.org/10.1016/j.prevetmed.2012.10.006

McGreal, S. A. (2014, June 30). *Are dog people more prejudiced than cat people?* Psychology Today. https://www.psychologytoday.com/ca/blog/unique-everybody-else/201406/are-dog-people-more-prejudiced-cat-people

Murray, J. K., Browne, W. J., Roberts, M. A., Whitmarsh, A., & Gruffydd-Jones, T. J. (2010). Number and ownership profiles of cats and dogs in the UK. *Veterinary Record*, *166*(6), 163–168. https://doi.org/10.1136/vr.b4712

Mutz, D. C. (2010). The dog that didn't bark: The role of canines in the 2008 campaign. *PS: Political Science & Politics*, *43*(4), 707–712. https://doi.org/10.1017/s1049096510001125

Pew Research Center. (2017, October 4). *Growing gaps between Republicans and Democrats across domains*. Pew Research Center. https://www.people-press.org/2017/10/05/1-partisan-divides-over-political-values-widen/1_1-18/

Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social Dominance Orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, *67*(4), 741–763. https://doi.org/10.1037/0022-3514.67.4.741

San Filippo, M. (2018, December 3). *Where the (not-so) wild things are: AVMA releases data on top, bottom states for dog, cat and overall pet ownership*. American Veterinary Medical Association. https://www.avma.org/News/PressRoom/Pages/2018-top-and-bottom-states-for-pet-ownership.aspx

Schönbrodt, F. D., & Perugini, M. (2013). At what sample size do correlations stabilize? *Journal of Research in Personality*, *47*(5), 609–612. https://doi.org/10.1016/j.jrp.2013.05.009

Siegel, J. M. (1995). Pet ownership and the importance of pets among adolescents. *Anthrozoös*, *8*(4), 217–223. https://doi.org/10.2752/089279395787156572

Tarr, H., & Lorr, M. (1991). A comparison of right-wing authoritarianism, conformity and conservatism. *Personality and Individual Differences*, *12*(3), 307–311. https://doi.org/10.1016/0191-8869(91)90117-T

Wilson, C., & Haidt, J. (2014, February 18). *It's true: Liberals like cats more than Conservatives do*. Time. https://time.com/8293/its-true-liberals-like-cats-more-than-conservatives-do/

APPENDIX A
Additional Preregistered Analyses

The following analyses were all pre-registered. However, after receiving the data we found that the sample sizes for these analyses were too low to support reliable inferences, as covariance estimates only begin to stabilize at around 250 participants (Schönbrodt & Perugini, 2013) and very wide confidence intervals can be observed for all point estimates. These results should thus be interpreted with extreme caution.

Strong Political Identities

In addition to our main analyses, we preregistered that we would examine whether those who rated themselves on the far ends of the political spectrum differed in their evaluations of cats and dogs. In our dataset, 309 participants rated themselves as strongly liberal (i.e., score of +3) and only 64 reported being strongly conservative (i.e., score of -3). Given the few number of strongly conservative participants, these SEM models should be cautiously interpreted.

The first model, based on those who report strong political beliefs and evaluations of dogs, had good fit (RMSEA < 0.001, SRMR = 0.04, and CFI = 1.00, TLI = 1.01), but strong political identities did not predict evaluations of dogs (b = 0.21, 95% CI [-0.39, 0.81], SE = 0.30, p = .49). A parallel model looking at the evaluations of cats also had good fit, and in this model, there was an association between strong political identities and evaluations of cats (RMSEA < 0.001, SRMR = 0.03, and CFI = 1.00, TLI = 1.01; b = -1.26, 95% CI [-2.01, -0.51], SE = 0.38, p = .001). Strongly conservative respondents had more negative evaluations of cats, consistent with our reasoning. Finally, we repeated this analysis looking at preference for dogs over cats. This model also had good fit (RMSEA < 0.001, SRMR = 0.03, and CFI = 1.00, TLI = 1.00) and found that strong political identities predicted a preference for dogs over cats (b = 1.51, 95% CI [0.53, 2.50], SE = 0.50, p = .003). Those with strong conservative beliefs, preferred dogs over cats.

Finally, we re-examined these relationships using the IAT scores. The D score was statistically significantly related to strong political identities (t(80.02) = 2.82, p = .006) and a similar effect was found when examining the PI score (t(78.37) = 2.77, p = .007). Those with strong conservative views had more negative implicit associations with cats than those with strong liberal beliefs.

Table A1. Correlations between variables of interest and potential mediators

	Political Identity	Dog Evaluations	Cat Evaluations	Difference Score	SDO	RWA	Conscientiousness	Openness
Political Identity	1.00	.04 [-.00, .09]	-.11 [-.15, -.06]	.11 [.06, .16]	.41 [.22, .58]	.59 [.40, .73]	-.05 [-.24, .16]	-.29 [-.47, -.10]
Dog Evaluations		1.00	-.04 [-.09 .00]	.63 [.60, .66]	.06 [-.16, .27]	.03 [-.22, .27]	-.01 [-.21, .19]	.07 [-.12, .26]
Cat Evaluations			1.00	-.80 [-.82, -.78]	.01 [-.20, .22]	-.37 [-.56, -.14]	.00 [-.20, .20]	.19 [-.01, .37]
Difference Score				1.00	.02 [-.19, .23]	.34 [.11, .54]	-.01 [-.21, .19]	-.10 [-.29, .10]

Note. Higher scores for political identity reflect greater conservatism. Correlations are missing between mediator variables because participants only completed one mediator measure. Values in square brackets indicate the 95% confidence interval for each correlation.

SUPPLEMENTARY MATERIALS

Peer Review History

Download: https://collabra.scholasticahq.com/article/28391-pets-and-politics-do-liberals-and-conservatives-differ-in-their-preferences-for-cats-versus-dogs/attachment/71713.docx?auth_token=7Ve1BnxrfgP8GqKFBW4U