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The Pet Exposure Effect: Exploring the Differential Impact of Dogs Versus Cats on Consumer Mindsets

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Abstract

Despite the ubiquity of pets in consumers' lives, scant research has examined how exposure to them (e.g., recalling past interactions with dogs and cats, viewing ads featuring a dog or a cat) influences consumer behavior. The authors demonstrate that exposure to dogs (cats) reminds consumers of the stereotypical temperaments and behaviors of the pet species, which activates a promotion- (prevention-) focused motivational mindset among consumers. Using secondary data, Study 1 shows that people in states with a higher percentage of dog (cat) owners Google more promotion- (prevention-) focused words and report a higher COVID-19 transmission rate. Using multiple products, Studies 2 and 3 demonstrate that these regulatory mindsets, when activated by pet exposure, carry over to influence downstream consumer judgments, purchase intentions, and behaviors, even in pet-unrelated consumption contexts. Study 4 shows that pet stereotypicality moderates the proposed effect such that the relationship between pet exposure and regulatory orientations persists to the extent consumers are reminded of the stereotypical temperaments and behaviors of the pet species. Studies 5–7 examine the role of regulatory fit and evince that exposure to dogs (cats) leads to more favorable responses toward advertising messages featuring promotion- (prevention-) focused appeals.

Keywords

pets, regulatory orientation, advertising, COVID-19

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Pets are prevalent and play important roles in consumers' daily lives (Amiot and Bastian 2015; Cavanaugh, Leonard, and Scammon 2008; Hirschman 1994; Holbrook and Woodside 2008; Serpell and Paul 2011). According to the survey of the American Pet Products Association (APPA 2018), 68% of U.S. households, or 84.6 million homes, own a pet. Dogs and cats are the most popular pets, with 48% of U.S. households (60 million homes) owning at least one dog and 37% of U.S. households (47 million homes) owning at least one cat. Pet adoption rates have climbed significantly, with about one in five households having acquired a dog or cat since the outbreak of the COVID-19 pandemic (American Society for the Prevention of Cruelty to Animals [ASPCA] 2021). Pets also frequently appear in popular culture, mass media, and marketing communications. For example, Target uses a dog as its brand mascot, Microsoft features dogs in its 2020 holiday commercial to inspire people to find joy, and Wells Fargo uses a cat in its commercial to advertise its suspicious card activity alert services.

Despite the significance of pets in people's lives and in mass media, popular culture, and marketing communications, scant research has examined how pets may influence consumers' judgments, decisions, and behaviors. Existing research on pet–human relationships largely revolves around examining how owning a pet influences the owner's pet-related judgments and behaviors. For example, attesting to a strong tie between owners and their pets (Amiot and Bastian 2015; Cavanaugh, Leonard, and Scammon 2008), this stream of literature suggests that pets provide not only companionship but also a sense of safety and belongingness for their owners (Zeifman and

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Hazan 1997). Pet owners have significantly greater physical and psychological well-being than non-pet owners (Amiot and Bastian 2015) and are more likely to endorse causes protecting animal rights (Kidd, Kidd, and Zasloff 1995).

Research that examines how pets may influence consumer behavior beyond the immediate context of pet ownership is lacking, however. Such knowledge would provide novel and important insights to marketers and allow them to develop marketing strategies based on pet exposure situations. For example, marketers might choose to recommend more fitting products or services or craft appropriate communication messages to effectively target consumers depending on the type of pets to which they are exposed. Consider the following scenario: A newly opened massage center is pondering the language to use in direct mail to potential customers and whether to focus on how its therapies help reduce fatigue and stress or how its therapies promote metabolism and energy levels. Which strategy might be more effective if the company features a cat (dog) figure in its advertisement? This article provides a theory-based answer to this question.

In our research, we focus on the effects of exposure to pets (e.g., recalling consumers' past interactions with dogs or cats, viewing ads featuring a dog or a cat) and examine how such experience influences consumers' judgments and decision making through the lens of regulatory focus theory. Drawing from literature on human–animal relationships, research on regulatory orientation, and work on mindset, we suggest that exposure to pets will remind consumers of the stereotypical personality traits, temperaments, and behaviors of the pets and thus will evoke different regulatory mindsets among consumers. Specifically, we predict and find that exposure to dogs fosters a more promotion-focused motivational mindset whereas exposure to cats activates a more prevention-focused motivational mindset. We further identify pet stereotypicality as a moderator for our findings, such that our results on the relationship between pet exposure and regulatory orientations persist only when consumers are reminded of the stereotypical temperaments and behaviors of the pet species, and that our main proposed effects dissipate when consumers are reminded of information inconsistent with the pet stereotypes. Moreover, we show that these regulatory mindsets, when activated by pet exposure, carry over to influence downstream consumer judgments, purchase intentions, and behaviors, even in pet-unrelated consumption contexts.

Theoretical Framework

Regulatory Orientation and Its Social Origin

Regulatory focus theory suggests that consumer judgments, decisions, and behaviors are motivated by two regulatory orientations: promotion and prevention focus (Higgins 1997; Lee, Aaker, and Gardner 2000; Pham and Avnet 2004; Wang and Lee 2006). A promotion focus in self-regulation reflects consumers' motivations to attain growth and nurturance in an effort to align their actual selves with their ideal selves (achieving accomplishments and fulfilling aspirations; Higgins 1987, 1997). Promotion-focused consumers are characterized by an eagerness regulatory system during behavioral regulation (Crowe and Higgins 1997; Lee, Keller, and Sternthal 2010; Pham and Chang 2010; Wang and Lee 2006). For example, they are sensitive to the presence or absence of positive outcomes (gains and successes; Higgins 1997), concerned about reducing errors of omission (Croe and Higgins 1997), and more risk seeking when processing information and rendering decisions (Zhou and Pham 2004). By contrast, self-regulation with a prevention focus reflects consumers' motivations to attain safety and security in an attempt to bring their actual selves into alignment with their "ought" selves (fulfilling duties and obligations; Higgins 1987, 1997). Thus, prevention-focused consumers are more vigilant and cautious during behavior regulation (Crowe and Higgins 1997; Lee, Keller, and Sternthal 2010; Pham and Chang 2010; Wang and Lee 2006). In this system, consumers are sensitive to the presence or absence of negative outcomes (losses and failures; Higgins 1997), concerned about reducing errors of commission (Crowe and Higgins 1997), and more risk averse (Zhou and Pham 2004) when processing information and making decisions.

More germane to our research is the finding that social influences play a pivotal role in shaping people's regulatory orientations. For example, interactions with childhood caretakers and parents' parenting style can influence the formulation of consumers' regulatory orientations during the socialization process (Crowe and Higgins 1997; Higgins 1996). Social exclusion causes a shift toward prevention motivation (Park and Baumeister 2015), whereas making choices for other people instigates a promotion focus (Polman 2012). In addition, distinct social relationships can activate alternative regulatory orientations, such that reminders of friends activate a promotion focus while reminders of family members engender a prevention focus (Fei, You, and Yang 2020). Similarly, positive role models induce a promotion focus, whereas negative role models instigate a prevention focus (Lockwood, Jordan, and Kunda 2002).

Given pets' prevalence in consumers' daily lives, we posit that consumers' interactions with pets are also an important part of socialization that can influence their regulatory orientations. These socialization activities can involve direct or indirect interactions with pets (e.g., observing pets' interactions with other people). Indeed, research on human–animal relationships evinces that pets play an important part in people's socialization process, influencing the development of various cognitive and social abilities (e.g., worldviews, empathy; Amiot and Bastian 2015; Myers 1999; Purewal et al. 2017).

Exposure to Pets and Regulatory Orientations

As we have mentioned, dogs and cats are two primary types of pets (APPA 2018). Despite within-species breed differences, research on animal behavior has identified systematic cross-species differences between domesticated dogs and

cats (Bradshaw 2012, 2013; Jardim-Messeder et al. 2017). This stream of research suggests that a promotion-oriented eagerness system better captures dogs' temperaments and behavioral characteristics, whereas a prevention-focused cautious system better describes cats' temperaments and behavioral characteristics. For example, on a temperament level, dogs tend to be open and expressive, while cats are elusive and cautious (Bradshaw 2012, 2013; Potter and Mills 2015). Consistent with the promotion orientation's receptivity to change (Boldero and Higgins 2011; Liberman et al. 1999), dogs (vs. cats) cope better with and adapt quicker to changes in the environment, such as moving into a new house or having a new person in the household (Bradshaw 2012, 2013; Langenfeld 2020). In line with the prevention orientation's preference for the status quo (Boldero and Higgins 2011; Chernev 2004), cats (vs. dogs) appear more concerned with the protection their owners provide and the consistency and stability of their social and physical surroundings (Bradshaw 2012, 2013). Similarly, consistent with the eagerness prediction of a promotion regulatory system (Cesario, Grant, and Higgins 2004), dogs are more responsive to rewards (e.g., food, praise, petting) than cats and thus are easier to train (Miklósi et al. 2005).

When interacting with human beings and other pets, dogs are more eager to please their owners and socialize with other dogs, whereas cats are more cautious, suspicious, boundary setting, and anxious when surrounded by unfamiliar people or other cats (Bradshaw 2012, 2013; Potter and Mills 2015). Indeed, research has shown that dogs are more attentive and responsive to human's social cues (e.g., gestures) than cats (Miklósi et al. 2005; Wynne, Udell, and Lord 2008). Dogs' eagerness can be exemplified by the spike in oxytocin (a hormone mammals release when they feel love or affection for someone) when their owners are around (Nagasawa et al. 2015). A study conducted by scientists at BBC shows that dogs produce five times more oxytocin than cats upon seeing their owners (Farand 2016).

We further predict that through repeated socialization episodes with pets (through either direct or indirect interaction with pets), the traits and motivational characteristics of dogs (cats) are gradually associated with a promotion-focused (prevention-focused) eagerness (cautiousness) system. These learned associations are brought to mind and thus accessible when consumers interact with pets or encounter stimuli featuring pets (e.g., ads) in their daily lives. To confirm the associations of dogs and cats with promotion and prevention orientations, we conducted a pilot study, which found that participants indeed associated promotion-focused words with dogs and prevention-focused words with cats (for details of the pilot study, see Web Appendix A).

Hypotheses

Drawing from research on motivational mindset, which we review next, we further predict that exposure to dogs (cats) or stimuli featuring them (e.g., ads) will remind consumers of the temperaments and behaviors of the dogs (cats), which will in turn activate a promotion-focused (prevention-focused) mindset among consumers and guide their subsequent judgment and decision making. Mindset reflects "the activation and use of a procedure that is stored in memory as part of declarative knowledge" (Wyer and Xu 2010, p. 110). That is, engaging in a particular operation when pursuing a goal in a prior task may give rise to a mindset (e.g., a promotion-focused mindset) that remains accessible in consumers' memory and, in turn, guides their pursuit of a different goal in a subsequent, unrelated context.

A growing body of literature has found considerable evidence of the role of mindset across a wide range of information-processing activities, from comprehension, to judgment, to decision making (Ma and Roese 2014; Wyer and Xu 2010; Xu et al. 2020). In some situations, mindsets involve cognitive procedures induced by engaging in a prior task that spills over to influence a subsequent, unrelated context. For example, Xu et al. (2020) show that managers during election years are more likely to adopt a comparative mindset due to the omnipresence of comparative political advertisements. Accordingly, they spend more money on their managerial decisions because the comparative mindset accentuates "which option to spend money on" and forgoes the "whether or not to spend" consideration. More germane to our theorizing, mindsets may also be based on motivation (Wyer and Xu 2010), such that the motivational mindset induced by pursuing a goal in a prior task will guide consumers' subsequent behavior in an unrelated context (e.g., pursuit of a different goal). For example, Wyer and Xu (2010) assert that the promotion (prevention) regulatory mindset can be induced procedurally by, for example, making salient participants' desire to achieve their ideal (ought) self. When activated, the promotion (prevention) regulatory mindset produces a cross-domain effect, making consumers, for example, more likely to approach positive (avoid negative) consequences in their decision making.

Drawing on this stream of literature, we posit that exposure to pets (e.g., recalling an interaction with a pet, viewing ads featuring a pet as the spokescharacter) in a prior task may render different regulatory mindsets salient. Specifically, because the stereotypical personality traits, temperaments, and behaviors of dogs (cats) brought to mind by the pet exposure are associated with eagerness (cautiousness) strategies commonly employed by a promotion (prevention) orientation, consumers' different regulatory orientations (promotion vs. prevention) will be activated. When evoked, these motivational regulatory mindsets will carry over to influence consumers' subsequent, unrelated judgments and decision making, rendering them more eager (cautious) during behavioral regulation, leading them to pursue promotion- (prevention-) focused goals such as growth and advancement (safety and stability), and making them more risk seeking (more risk averse) in decision making. Thus,

H_1: Pet exposure activates different regulatory motivational mindsets among consumers, such that (a) exposure to dogs or dog-featuring stimuli (vs. cats or cat-featuring stimuli) activates a

more promotion-focused mindset and (b) exposure to cats or cat-featuring (vs. dogs or dog-featuring) stimuli activates a more prevention-focused mindset.

A key premise of our theorizing that exposure to pets activates different regulatory mindsets is that such exposure will remind consumers of the stereotypical temperaments and behavioral characteristics of dogs (cats), giving rise to a promotion-focused (prevention-focused) mindset. In other words, through repeated socialization, consumers have developed preestablished mental connections between dogs' (cats') typical temperaments and behaviors and the promotion (prevention) focus, and exposure to pets or pet-featuring stimuli can render these stereotypical associations accessible, thus activating the corresponding regulatory-focus mindset among consumers. Prior research has shown that established mental associations are likely to be temporarily weakened, nullified, or even reversed when presented with information inconsistent with the original associations. For example, Gorn, Jiang, and Johar (2008) reversed the association between baby-faceness and unintentionality by presenting counterassociation information about a baby-faced person intentionally harming others. Thus, if our reasoning that mental associations between dogs (cats) and promotion- (prevention-) focused mindsets is right, our proposed effects should persist to the extent consumers are reminded of the stereotypical behaviors and temperaments of the pet species; when consumers are reminded of pet information inconsistent with the stereotypes of the species (e.g., dogs [cats] unlike a stereotypical dog [cat]), we are likely to show that our results are attenuated. More formally,

H_2: Pet stereotypicality moderates the effect of pet exposure on regulatory mindsets, such that the effect dissipates when consumers are exposed to pets that are inconsistent with the stereotypes of the species.

We expect that the impact of pet exposure on consumers' motivational mindsets will carry over to influence downstream variables, including ad evaluation, purchase intention, and real purchasing behavior, even in pet-unrelated consumption contexts. We anticipate that the effects of pet exposure on these variables will stem from the activation of a regulatory mindset and regulatory fit. Regulatory fit occurs when the regulatory strategies individuals employ during goal pursuit are compatible with their regulatory orientations (Higgins 2000; Hong and Lee 2007); it usually results in favorable effects on downstream consumer responses, such as enhanced value of the product (Avnet and Higgins 2006), brand attitudes (Labroo and Lee 2006), self-regulation (Hong and Lee 2007), and decision making (Zhou and Pham 2004).

Therefore, in accordance with this literature, we anticipate that consumers who are exposed to dogs or dog-featuring stimuli will experience higher regulatory fit and develop more favorable product evaluations when presented with ad messages featuring promotion-focused claims. By contrast, consumers who are exposed to cats or cat-featuring stimuli will experience higher regulatory fit and develop more favorable product evaluations when presented with ad messages featuring prevention-focused claims. Thus,

H_3: There is an interaction between pet exposure and the regulatory focus of an ad on consumers' evaluations of the advertised product, such that (a) when exposed to ads with promotion-focused claims, exposure to dogs or dog-featuring stimuli (vs. cats or cat-featuring stimuli) leads consumers to form more favorable product evaluations, and (b) when exposed to ads with prevention-focused claims, exposure to cats or cat-featuring stimuli (vs. dogs or dog-featuring stimuli) leads consumers to form more favorable product evaluations.

H_4: Regulatory fit mediates the interaction between pet exposure and ads' regulatory focus proposed in H_3 on product evaluations.

Overview of Studies

Studies 1 and 2 provide initial evidence for our prediction by showing that long-term exposure to dogs (cats) is associated with a promotion (prevention) focus. Specifically, using secondary data gathered from the American Veterinary Medical Association, Google Trends, and Centers for Disease Control and Prevention (CDC), Study 1 finds that people in states with a higher percentage of dog (cat) owners search more promotion- (prevention-) focused words (Study 1a) and show a higher COVID-19 transmission rate (Study 1b). Study 2 shows that dog (vs. cat) owners are more likely to invest in stocks and are less likely to invest in mutual funds in financial decision making. Studies 3a–3d establish the basic effect that exposure to dogs (cats) activates a promotion- (prevention-) focused motivational mindset by employing multiple experimental manipulations of pet exposure and different measures of regulatory orientation in both pet-related and pet-unrelated contexts, including incentive-compatible choices. Study 4 explores a moderating effect for our findings, showing that our hypothesized effects will dissipate when consumers are exposed to pet information inconsistent with the stereotypes of the pet species. Study 5 examines the downstream effects of pet exposure on consumers' incentive-compatible behaviors, showing that consumers exposed to dogs (cats) bid higher for products framed with a promotion (prevention)

Table 1. Study 1a: Results from the Multiple Regression Model.

	b	t	p
Pet ownership index[a]	.36	2.62	.012
Median household income	−.15	−.63	.534
Per capita GDP	−.25	−1.26	.214
Political orientation[b]	−.05	−.29	.774

[a]Higher scores indicate more dog (vs. cat) owners.
[b]1 = Democratic, 2 = Republican.
Notes: Dependent variable = Regulatory-focus index: high scores indicate more promotion- (vs. prevention-) focused.

focus. Studies 6 and 7 provide additional support for our theorizing by examining the mediation effect of regulatory fit. Table 1 in Web Appendix B provides a summary of all studies.

Study 1: Pet Ownership and Regulatory Orientations—Evidence from Google Trends and COVID-19 Cases

Relying on secondary data and operationalizing pet exposure as pet ownership, Study 1 aims to provide preliminary evidence for our prediction that exposure to dogs and cats is associated with different regulatory mindsets. We collected aggregated state-level data on pet owner statistics, public interest in promotion- versus prevention-oriented behaviors, and per capita COVID-19 cases during the pandemic. We expect that at the state level, having a relatively higher dog-owning (cat-owning) population will be related to more search interests in promotion-oriented (prevention-oriented) behaviors in general (Study 1a) and more per capita COVID-19 cases during the pandemic (Study 1b).

Study 1a: Pet Ownership and Search Interests in Regulatory Behaviors

For pet ownership, we obtained the latest (2016) state-level pet ownership data set (n = 49) from the *U.S. Pet Ownership and Demographics Sourcebook* released by the American Veterinary Medical Association (2018). This data set provides the most complete data on pet population demographics, covering the 48 U.S. continental states and the District of Columbia (excluding Alaska and Hawaii). For each state, we divided the percentage of dog-owning households by the percentage of cat-owning households to obtain a pet-owning index, with a higher score indicating more dog-owning (vs. cat-owning) households in the state.

To obtain a proxy for citizens' public interest in regulatory-oriented behaviors in each state, we examined the search interest scores data from Google Trends (Du, Hu, and Damangir 2015; Kozinets, Patterson, and Ashman 2017). Google is the most often-used internet search engine in the United States (accounting for 88% of the market share; Schultheiß and Lewandowski 2021), and Google Trends counts how often a particular search term is entered relative to the total search volume across various geographic regions. After a search term, period, and interested geographic area are entered, Google Trends displays how often that search term appears on Google in that geographic area and in that period relative to the total search volume on a standardized scale ranging from 0 (lowest search volume) to 100 (highest search volume). Given its viable role in monitoring public interests, Google Trends has become an increasingly used data source for research in psychology (MacInnis and Hodson 2015), political sciences (Mellon 2013; Weeks and Southwell 2010), and marketing (Du, Hu, and Damangir 2015; Kozinets, Patterson, and Ashman 2017).

To build the state-level regulatory orientation index, we first selected ten representative promotion-focused words (i.e., "growth," "gain," "achievement," "aspiration," "pleasure," "proud," "hope," "earn," "win," and "spontaneous") and ten representative prevention-focused words (i.e., "privacy," "safety," "loss," "prevention," "pain," "stable," "saving," "frugal," "rules," and "risky"), in line with literature on regulatory focus (Higgins 1997, 2000, 2002; Scholer, Cornwell, and Higgins 2019). We then obtained search interest scores of these words on Google Trends from January 1, 2016, to December 31, 2020, across the 48 continental states plus the District of Columbia. For each state, we calculated the average search interest score for the ten promotion-focused words ($\alpha = .85$) and the ten prevention-focused words ($\alpha = .74$). Finally, we built a regulatory orientation index for each state by dividing the promotion search interest score by the prevention search interest score (i.e., higher numbers indicate a higher promotion focus).

To demonstrate the ecological validity of our findings, we also controlled for state-level microeconomic influence (income), macroeconomic influence (gross domestic product [GDP]), and political orientations. Specifically, we included the (state-level) covariates median household income in 2016 (U.S. Bureau of the Census 2017), per capita GDP in 2016 (U.S. Bureau of Economic Analysis 2019), and political orientation based on the 2016 presidential election results (*The New York Times* 2017).

We conducted a multiple linear regression with the pet ownership index as the independent variable, regulatory-orientation index as the dependent variable, and median household income, per capita GDP, and political orientation as covariates. Table 1 shows the results. The results reveal that our regression model was significant ($F(4, 44) = 4.86$, $p = .002$), suggesting that the independent variables significantly explained the variance in regulatory orientation. More importantly, after controlling for the covariates, the pet ownership index ($b = .36$, $t = 2.62$, $p = .012$) significantly predicted the regulatory-orientation index, showing that at the state level, a relatively higher dog-owning (cat-owning) population is associated with more search interests in promotion-oriented (prevention-oriented) behaviors in general (for additional analyses, see Web Appendix C).

Study 1b: Pet Ownership and Per Capita COVID-19 Cases During the Pandemic

Study 1b uses the same pet-ownership data from Study 1a but focuses on per capita COVID-19 cases (CDC 2020) as a proxy for regulation-related behaviors. Considering the findings that promotion- (prevention-) focused people are more risk seeking (risk averse; Zhou and Pham 2004), we expect that dog owners will have an increased probability to engage in promotion-focused, relatively risky behaviors that may result in COVID-19 transmission (e.g., more willing to dine in restaurants, letting their guard down when following social distancing); by contrast, cat owners will have an increased probability to be more cautious and engage in less risky, prevention behaviors (e.g., behaving extra

cautiously, practicing social distancing, wearing face masks). Accordingly, we predict that states with more dog (cat) owners will report a higher (lower) number of per capita COVID-19 cases.

To obtain a state-level proxy for regulatory-oriented behavior, we examined each state's COVID-19 cases per 100,000 people reported to the CDC from January 21, 2020 (the earliest available date) to November 1, 2020 (the date Study 1b was conducted). As of November 1, 2020, the 48 continental states and the District of Columbia had reported 2,819 COVID-19 cases per 100,000 people, on average, with Vermont being the lowest (348 per 100,000) and North Dakota the highest (6,054 per 100,000).

We performed a linear regression on COVID-19 cases (per 100,000), with the pet ownership index as the independent variable, and controlled for the same covariates as in Study 1a. The results reveal that our regression model was significant ($F(4, 44) = 8.93$, $p < .001$), suggesting that the independent variables significantly explained the variance in COVID-19 cases. As Table 2 shows, the pet ownership index was significantly related to an increase in COVID-19 cases per 100,000 people ($b = .38$, $t = 3.15$, $p = .003$), suggesting that, at the state level, a relatively higher dog-owning (cat-owning) population was associated with more reported per capita COVID-19 cases. Consistent with this finding, our ancillary analyses (for detailed analyses and results, see Web Appendix D) also suggest that the pet ownership index (higher scores indicating more dog [vs. cat] owners) significantly increased search interests (per Google Trends during the same period as the COVID-19 data) in promotion-focused behaviors, such as dining in, but significantly reduced search interest in prevention-focused behaviors, such as face mask and social distancing.

Discussion

Using aggregated state-level data across different data sources, Study 1 provides support for our prediction of a significant association between long-term pet exposure and people's regulatory orientations, such that dog (cat) exposure is associated with a promotion (prevention) focus. Specifically, we find that, at the state level, a relatively higher dog-owning (cat-owning) population is associated with more search interests in promotion- (prevention-) focused behaviors in general (Study 1a) and more reported per capita COVID-19 cases (Study 1b). In subsequent studies, we use individual-level data to provide additional support for our prediction.

Table 2. Study 1b: Results from the Multiple Regression Model.

	b	t	p
Pet ownership index[a]	.38	3.15	.003
Median household income	.09	.56	.579
Per capita GDP	.13	.97	.336
Political orientation[b]	.53	3.71	.001

[a]Higher scores indicate more dog (vs. cat) owners.
[b]1 = Democratic, 2 = Republican.
Notes: Dependent variable = number of COVID-19 cases per 100,000 people.

Study 2: Pet Ownership and the Choice Between Stocks and Mutual Funds

Study 2 also operationalizes pet exposure as pet ownership and examines whether consumers' pet-owning situations are associated with different regulatory mindsets. Unlike Study 1, which used aggregate, state-level data, Study 2 relies on individual-level pet ownership data. In addition, we used an established measure of regulatory orientation (Sengupta and Zhou 2007), which involved participants in a financial decision-making task choosing between two investment options: stock (a proxy for promotion focus) and mutual fund (a proxy for prevention focus).

We recruited 145 pet owners from Amazon Mechanical Turk (MTurk) ($M_{age} = 35.3$ years; 53.1% female; 53% dog owners and 47% cat owners). We recruited only participants who own dogs only or cats only; owners of both dogs and cats were excluded (for the screening criteria, see Web Appendix E). We asked participants to partake in a financial decision-making task, which served as our measure of regulatory orientation (Zhou and Pham 2004). We first gave them basic definitions of stocks and mutual funds and told them that stock investments were typically associated with a higher level of risk, whereas mutual fund investments were typically associated with a lower level of risk and therefore more conservative. Next, we asked participants to imagine that they had $2,000 and were considering investing in two assets: a stock and a mutual fund. Afterward, we asked them to indicate which asset they would invest in if they could choose only one asset and then to indicate the amount of money they would invest. Given that prior research has shown that the activation of a promotion- (vs. prevention-) focused mindset entails greater risk taking (vs. risk aversion; Zhou and Pham 2004), we expected that dog (vs. cat) owners would be more willing to take risks in their financial investments and choose the stock option. After the financial decision-making task, participants completed measures of their mood using PANAS (Positive Affect Negative Affect Schedule; Watson, Clark, and Tellegen 1988) and a few demographic measures, including their age, gender, ethnicity, and income level (Web Appendix F presents the measures used).

Results

A logistic regression showed a significant effect of pet ownership (cat owners = 0, dog owners = 1) on investment choice, such that dog owners (36.4%) were more likely to choose to invest in the riskier stock option than cat owners (20.6%; $b = .79$, $SE = .38$, $\chi^2 = 4.73$, $p = .039$, Exp (B) = 2.20). Similarly, a one-way analysis of variance (ANOVA) revealed a significant effect of pet ownership on money allocations. As we expected, dog owners allocated more money to the stock option ($M_{dog} =$ \$796.10, SD = \$524.45) than cat owners ($M_{cat} =$ \$603.69, SD = \$474.90; $F(1, 143) = 5.31$, $p = .023$, $\eta_p^2 = .04$).

To rule out possible alternative explanations that participants' mood, gender, age, ethnicity, or income level accounted

for our findings, we controlled for these variables simultaneously. Our results for both choice ($\chi^2 = 5.47$, $p = .019$) and money allocations ($F = 5.74$, $p = .018$) remained significant even after we controlled for these covariates.

Discussion

Study 2's findings show that dog (vs. cat) owners were more likely to take risks in their financial decisions, showing more preference for stock investment. Importantly, incorporating the demographic variables age, ethnicity, gender, and income as covariates did not change the results. Taken together, using pet ownership as an operationalization, Studies 1 and 2 provide initial support for our prediction that exposure to pets is associated with different regulatory mindsets. However, despite the extra steps taken, such as controlling for demographic variables (e.g., income) to rule out alternative explanations, Studies 1 and 2 were correlational in nature. To provide stronger causal evidence for our prediction, in the subsequent studies, we manipulate exposure to pets in various ways.

Study 3: Effects of Pet Exposure on Consumers' Regulatory Orientations

The purpose of Study 3 is twofold. First, the study aims to establish causality between pet exposure and the formation of regulatory motivation mindsets by using multiple manipulations of pet exposure. Second, the study operationalizes regulatory orientations in various ways and across different (pet-related and pet-unrelated) contexts.

In a pet-related domain, Study 3a shows that participants exposed to dogs (vs. cats) will be more likely to prefer a pet toothpaste ad with promotion- (vs. prevention-) focused benefits. Studies 3b–3d test the effect in pet-unrelated domains. Consistent with prior research showing that the activation of a promotion- (prevention) focused mindset entails greater risk taking (risk aversion) (Zhou and Pham 2004), participants who are exposed to dogs (vs. cats) will be more willing to take risks to participate in a lottery (an incentive-compatible behavior; Study 3b) and in their financial investment decisions (Study 3c). In a health product context, Study 3d demonstrates that participants who are exposed to dogs (vs. cats) will be more likely to prefer a vitamin product with promotion- (vs. prevention-) focused benefits.

In this and subsequent studies, participants completed mood measures and demographic measures, including pet ownership, gender, age, income level, and ethnicity, at the end of study. Incorporating these variables as covariates did not influence our results (for the exact measures used, see Web Appendix F; for results pertaining to the impact of pet ownership across studies, see Web Appendix G), and thus we do not discuss them further.

Study 3a

In Study 3a, we examine our prediction in the context of pet-related decisions: pet toothpaste choice. One hundred eighty-three participants recruited from MTurk completed the study, which featured a two-cell (pet exposure: dog vs. cat) between-subjects design, for a small financial compensation ($M_{age} = 37.4$ years; 54.6% female). To manipulate pet exposure (dog vs. cat), under the cover story that we wanted to examine consumers' day-to-day experiences, participants were asked to recall and write down a past experience in which they interacted with a dog or cat (for details of the recall instructions, see Web Appendix H).

Afterward, participants were told that a pet toothpaste brand was testing advertisements for its new product and needed their opinions on two ad versions (adapted from Wang and Lee [2006]). Corresponding to their assigned pet exposure condition, participants in the dog (cat) condition viewed dog (cat) toothpaste ads. Ad A, which featured a promotion-focused claim, read, "Our product helps your dog [cat] freshen breath and strengthen tooth enamel!" Ad B, which emphasized the prevention-focused benefits of the product, read, "Our product helps your dog [cat] prevent gingivitis and fight plaque buildup!" A separate pretest confirmed that Ad A (B) was indeed perceived as more promotion (prevention) focused (Web Appendix H).

After viewing the two ads, participants indicated their preference for one of the two ads on three seven-point scales (1 = "definitely/for sure/certainly Ad A," and 7 = "definitely/for sure/certainly Ad B"). We created a preference index by averaging participants' responses to the three items ($\alpha = .99$), with higher scores indicating a preference for Ad B, the prevention-focused version.

As we expected, a one-way ANOVA revealed a significant effect of exposure to pets on ad preference. Specifically, participants in the dog condition indicated a stronger preference for the promotion-focused ad ($M_{dog} = 4.10$, $SD = 2.06$) than those in the cat condition ($M_{cat} = 4.85$, $SD = 1.83$; $F(1, 181) = 6.78$, $p = .010$, $\eta_p^2 = .04$).

Study 3b

Study 3b aims to examine our prediction using an incentive-compatible behavior in a pet-unrelated domain. One hundred eighty MTurk workers completed the study, which featured a two-cell (pet exposure: dog vs. cat) between-subjects design, in exchange for a small financial compensation ($M_{age} = 39.5$ years; 60% female). We told participants that the study was about people's general knowledge about pets and their past experiences with pets. We randomly assigned them to one of the two conditions (dog vs. cat). Participants first answered five quiz questions about dogs (cats; see Web Appendix I) and then recalled a past experience interacting with a dog (cat) and wrote it down (following the same instructions as in Study 3a).

We next told participants that they could participate in a lottery and explained the options they had as follows. If they chose not to participate in the lottery, they would still get paid the initial amount ($.40) as described in the study, so there was nothing to lose. If they chose to participate in the lottery,

they had a 50% chance to receive a bonus ($.20) in addition to the base pay; however, they also had a 50% chance to lose half the base pay ($.20). A separate pretest confirmed that the lottery participation (nonparticipation) option was indeed perceived as more promotion- (prevention-) focused (Web Appendix I).

Because the promotion (prevention) focus prompts people to focus more on gains (losses) and thus be more risk seeking and open to change (risk averse and status quo oriented) (Liberman et al. 1999; Zhou and Pham 2004), we expected participants who were exposed to dogs to be more likely to participate in the lottery than their counterparts who were exposed to cats. A logistic regression showed a significant effect of pet exposure (cat = 0, dog = 1) on lottery participation, such that participants in the dog condition showed a higher likelihood to take part in the lottery (63.4%) than participants in the cat condition (44.8%; b = .76, SE = .31, $\chi^2 = 6.20$, $p = .013$, Exp (B) = 2.14).

Study 3c

Two hundred twenty-five MTurk workers completed Study 3c in exchange for a small financial compensation ($M_{age} = 38$ years; 49% female). The study featured the same two-cell (pet exposure: dog vs. cat) between-subjects design and manipulated pet exposure by asking participants to view a series of four print ads, one per screen, that featured either dogs or cats as the spokescharacter (see Web Appendix J) and to provide their thoughts and feelings after viewing the ads. We then measured participants' regulatory orientation using the same financial decision-making task (Sengupta and Zhou 2007) as in Study 2.

A logistic regression showed a marginally significant effect of exposure to pets (cat = 0, dog = 1) on investment choice, such that participants in the dog condition were more likely to choose to invest in the riskier stock option (29.8%) than participants in the cat condition (18.9%; b = .60, SE = .32, $\chi^2 = 3.57$, $p = .059$, Exp(B) = 1.82). Similarly, a one-way ANOVA revealed a significant effect of exposure to pets on money allocation. Participants in the dog condition allocated more money to the stock option ($M_{dog} = \$790.35$, SD = 514) than those in the cat condition ($M_{cat} = \$613.06$, SD = 429; $F(1, 223) = 7.86$, $p = .005$, $\eta_p^2 = .03$).

Study 3d

One hundred fifty-seven MTurk workers completed Study 3d in exchange for a small financial compensation ($M_{age} = 42$ years; 61% female). Study 3d employed the same two-cell (pet exposure: dog vs. cat) between-subjects design. To manipulate pet exposure, participants watched a short video featuring either dogs or cats. Both videos had the same theme—pets "shopping" around in a store (see Web Appendix K).

After participants watched the video, we presented them with a choice scenario. Specifically, we asked them to imagine that they were buying vitamins and that two brands were available (Zhou and Pham 2004). Brand A was rich in vitamin C and iron and could promote high energy. Brand B was rich in antioxidants and could reduce the risk of cancer and heart disease. A separate pretest confirmed that Brand A (Brand B) was perceived as more promotion- (prevention-) focused (see Web Appendix K).

After viewing the two brands, participants then indicated their preference for one of the two brands on three seven-point scales (1 = "definitely/certainly/for sure Brand A," and 7 = "definitely/certainly/for sure Brand B"). We created a preference index by averaging and reverse coding participants' responses to the three items ($\alpha = .99$; a higher rating indicating a stronger preference for Brand A, the promotion-focused brand).

A one-way ANOVA revealed a significant effect of exposure to pets on brand preference. As expected, participants in the dog condition indicated a stronger preference for the promotion-focused brand ($M_{dog} = 3.96$, SD = 2.34) than those in the cat condition ($M_{cat} = 3.19$, SD = 2.02; $F(1, 155) = 4.93$, $p = .028$, $\eta_p^2 = .03$).

Discussion

Using a variety of methods to manipulate exposure to pets (i.e., pet knowledge, viewing print ads featuring pets, watching a short pet video, and recalling the experience of interacting with a pet), Studies 3a–3d provide converging support for H_1 and show that exposure to dogs can lead to behaviors consistent with a promotion-focused mindset, whereas exposure to cats can prompt behavior patterns more aligned with a prevention-focused mindset. Specifically, in Study 3a, consumers preferred the ad with promotion-focused (prevention-focused) benefits for a dog (cat) toothpaste product. In Studies 3b–3d, we extended this finding to pet-unrelated domains. In Studies 3b and 3c, consumers exposed to dogs (vs. cats) were more willing to take risks in their decisions. In Study 3d, exposure to dogs (vs. cats) prompted consumers to prefer a vitamin brand with promotion-focused benefits. These findings provide converging support for our basic prediction that in both pet-related and pet-unrelated contexts, exposure to dogs can activate more of a promotion-focused mindset, whereas exposure to cats can activate more of a prevention-focused mindset.

Importantly, in Studies 3a–3d, we found no systematic differences between the dog- and cat-exposure conditions in terms of mood, age, gender, ethnicity, income, and pet ownership. In addition, including these variables as control variables does not change our results anyway; thus, we do not discuss these variables further. Although some stimuli used in these studies may not be completely balanced (e.g., the pet pictures used in Study 3c may differ on certain dimensions, and the energy-boosting benefits of the vitamin seem less consequential than the cancer-risk-reducing benefits of the product in Study 3d), these studies taken together show convergent evidence for our main hypothesis and suggest that the proposed effect is robust across different contexts.

Study 4: Moderating Role of Pet Stereotypicality

The primary purpose of Study 4 is to examine the moderating effect of pet stereotypicality on the activation of regulatory-

focus mindsets (H_2). We predict that making nonstereotypical information (i.e., pets that do not possess the stereotypical characteristics of their species) available to consumers will attenuate the effect of pet exposure on regulatory-focus mindsets.

Method

Three hundred eighty MTurk participants (57% female; M_{age} = 40.3 years) completed the study for a small monetary compensation. Study 4 featured a 2 (exposure to pets: dog vs. cat) × 2 (pet stereotypicality: stereotypical vs. nonstereotypical) between-subjects factorial design.

We used a recall task similar to Study 3a. Specifically, we told participants that we were interested in consumers' experience with a pet. Participants then read that some dogs (cats) possess stereotypical characteristics of a dog (cat) and some of them do not. To manipulate pet stereotypicality, in the stereotypical conditions, participants were asked to describe an experience interacting with a dog (cat) that reminds them of the stereotypical characteristics of a dog (cat) (i.e., with personality, temperament, and behavior like a stereotypical dog [cat]). In the nonstereotypical conditions, participants were asked to describe an experience interacting with a dog (cat) that does not have the stereotypical characteristics of a dog (cat) (i.e., with personality, temperament, and behavior unlike a stereotypical dog [cat]). (See Web Appendix L for the detailed manipulation).

After the recall task, participants completed the financial decision scenario used in Study 2 and Study 3c. Specifically, participants imagined they had $2,000 and considered investing in two assets: a stock and a mutual fund. They indicated their preference between the two options on a nine-point scale (1 = "stock," and 9 = "mutual fund"; reverse-coded with a higher rating indicating a stronger preference for the promotion-focused option [i.e., stock]) and then indicated the amount of money they would invest.

Results

Preference. A 2 × 2 ANOVA revealed a significant two-way interaction of pet exposure with pet stereotypicality on investment preference ($F(1, 376) = 8.11$, $p = .005$, $\eta_p^2 = .021$). Planned contrasts showed that, after pets were described as consistent with their stereotypes, the prior findings were replicated. That is, participants in the dog condition demonstrated higher preference for the stock ($M_{dog} = 4.21$, $SD = 2.69$) than those in the cat condition ($M_{cat} = 3.06$, $SD = 2.14$; $F(1, 376) = 11.72$, $p < .001$, $\eta_p^2 = .03$). However, after pets were described as inconsistent with their stereotypes, the prior findings of pet exposure disappeared in that participant did not show preferences for the stock ($M_{dog} = 3.40$, $SD = 2.47$; $M_{cat} = 3.66$, $SD = 2.36$; $F(1, 376) = .53$, $p = .466$).

Money allocation to the stock. A 2 × 2 ANOVA on money allocation to the stock also revealed a significant two-way interaction ($F(1, 376) = 4.72$, $p = .031$, $\eta_p^2 = .012$). Planned contrasts showed that, after pets were described as consistent with their stereotypes, the prior findings were again replicated such that participants in the dog condition allocated more money to the stock option ($M_{dog} = \$765.82$, $SD = 523.89$) than those in the cat condition ($M_{cat} = \$623.39$, $SD = 466.25$; $F(1, 376) = 4.20$, $p = .041$, $\eta_p^2 = .011$). However, after pets were described as inconsistent with their stereotypes, the prior findings of pet exposure disappeared in that the amount of money allocated to the stock option was not statistically different between the dog and cat conditions ($M_{dog} = \$606.80$, $SD = \$477.79$; $M_{cat} = \$688.04$, $SD = \$527.19$; $F(1, 376) = 1.14$, $p = .286$). Thus, the results support H_2.

Discussion

Providing support for our theorizing that associations triggered by pet exposure evoke different regulatory motivational mindsets, Study 4 shows that information related to pet stereotypicality moderates the effect of pet exposure on the activation of regulatory-focus mindsets. Specifically, Study 4 demonstrates that exposing participants to pet information consistent with their stereotype replicated the findings in the previous studies; by contrast, exposure to pets inconsistent with their stereotype nullified the effect of pet exposure on the activation of regulatory-focus mindsets.

Having established the basic effect of pet exposure on consumers' regulatory motivational mindsets, in subsequent studies we aim to further examine the downstream effects of pet exposure on consumer behavior, including product evaluations, purchase intentions, and real incentive-compatible behaviors. Specifically, as we predict in H_3, which is based on the regulatory fit between pet exposure and ad frames, because exposure to dogs (cats) activates a promotion (prevention) regulatory mindset among consumers, they should form more favorable evaluations and show more purchase intentions of products framed with promotion-focused (prevention-focused) benefits.

Study 5: Pet Exposure, Product Feature Frames, and Bidding Behavior

Study 5 aims to provide evidence for H_3, which predicts that there is an interaction between pet exposure and the regulatory focus of an ad on consumers' evaluations of the advertised product by using incentive-compatible behaviors. The study also uses a different ad to further augment the robustness of our findings. Two hundred eighty-three undergraduate students from a large midwestern U.S. university participated in the study for partial course credit (45.9% female; M_{age} = 20.5 years). Study 5 employed a 2 (pet exposure: dog vs. cat) × 2 (regulatory focus: promotion vs. prevention) between-subject factorial design.

Similar to the previous studies, to manipulate pet exposure, under the cover story that we wanted to understand consumers' day-to-day experiences, we first asked participants to recall a past experience in which they interacted with a dog or a cat

and to write it down. We then told participants that they would read a message from a local massage center. We varied the message to accentuate either a promotion or a prevention focus (see Web Appendix M). The promotion-focused message emphasized that massages performed by therapists help people increase metabolism, boost immunity, and build a rejuvenated body. The prevention-focused message indicated that massages performed by therapists help soothe body aches, relieve tensions, and reduce stress from school and work. We conducted a separate pretest to confirm the success of our regulatory focus manipulation (see Web Appendix M).

Next, we told participants that the local massage center would offer $50 gift cards to several survey participants. They were asked to bid on the gift cards and were told that the top bidders would be contacted later and offered the gift cards at the bidding price (though later the top bidders received the gift cards for free). Participants were then instructed to write down the dollar amount they were willing to bid on a $50 gift card.

A 2 × 2 ANOVA on participants' bidding amount revealed only a significant interaction between regulatory focus and pet exposure ($F(1, 279) = 8.91$, $p = .003$, $\eta_p^2 = .03$). Planned contrasts showed that after exposure to the promotion-focused version of the ad message, participants in the dog condition bid significantly higher ($M_{dog} = \$20.31$, $SD = \$14.57$) than those in the cat condition ($M_{cat} = \$14.98$, $SD = \$13.20$; $F(1, 279) = 4.77$, $p = .030$, $\eta_p^2 = .017$). By contrast, after exposure to the prevention-focused version of the ad message, participants in the cat condition placed significantly higher bids ($M_{cat} = \$20.51$, $SD = \$15.35$) than those in the dog condition ($M_{dog} = \$15.67$, $SD = \$13.68$; $F(1, 279) = 4.14$, $p = .043$, $\eta_p^2 = .02$).

Discussion

Using a behavioral study with an incentive-compatible measure, Study 5 confirmed the robustness of our findings that exposure to pets activates different regulatory mindsets among consumers. After viewing the promotion-focused version of an ad promoting a local massage center, participants who recalled exposure to a dog placed higher bids on the gift card; by contrast, after viewing the prevention-focused version, participants who recalled exposure to a cat placed higher bids. These results provide support for H_3.

Study 6: Pet Exposure and Product Frames Induce Regulatory Fit and Persuasion

The goal of Study 6 is threefold. First, Study 6 aims to augment robustness for H_3 by conceptually replicating the findings of Study 5 using a different context (bidding for a product). Second, Study 6 aims to test H_4, which predicts that regulatory fit will mediate the interaction of exposure to pets with ads' regulatory focus on consumer behavior. Third, it uses a new method to manipulate exposure to pets, such that dogs (cats) are directly incorporated into the stimuli as an integral part of the ad message.

Method

Two hundred sixty-four undergraduate students from a large southeastern U.S. university participated in the study in exchange for course credit ($M_{age} = 20.2$ years; 52% female). Study 6 featured a 2 (pet exposure: dog vs. cat) × 2 (regulatory focus: promotion vs. prevention) between-subjects factorial design.

The experimental procedure was similar to Study 5 except that a new ad with a new product (sneaker) was employed and that pets (dogs or cats) were referenced in the ad. We told participants that they would review a message from a sneaker brand. Dependent on the assigned condition, participants next viewed one of the four versions of the ad (adapted from Fei, You, and Yang [2020]). The promotion-focused version of the ad read, "Be a dog (cat) person! Reach your health goal with eagerness. Our sneakers feature H-Ergy synthetic material, which improves breathability of the shoes and promotes strong support for your feet." The prevention-focused version of the ad read, "Be a dog (cat) person! Reach your health goal with caution. Our sneakers feature N-Ergy synthetic material, which is anti-skid and reduces the possibility of foot pain." We conducted a separate pretest to confirm the success of our regulatory focus manipulation and the believability of the stimuli.

Two hundred sixty undergraduate students ($M_{age} = 20.3$ years; 56% female) were randomly assigned to one of the four conditions. Participants first indicated the extent to which the advertised sneakers had benefits that could help people attain something positive and the extent to which the advertised sneakers had benefits that could help people avoid something negative (adapted from Mogilner, Aaker, and Pennington [2008]; 1 = "strongly disagree," and 9 = "strongly agree"). Participants then rated the extent to which the message was reasonable/appropriate/believable as an ad (1 = "strongly disagree," and 9 = "strongly agree"; $\alpha = .91$; averaged to form a believability index). The ANOVA on manipulation check measures revealed only main effects, such that the promotion-focused message ($M_{promotion} = 7.53$, $SD = 1.19$) was deemed as having benefits that helped people attain something positive to a greater extent than the prevention-focused message ($M_{prevention} = 6.71$, $SD = 1.51$; $F(1, 256) = 23.76$, $p < .001$, $\eta_p^2 = .09$), and that the prevention-focused message ($M_{prevention} = 6.46$, $SD = 1.93$) was perceived as having benefits that helped people avoid something negative to a greater extent than the promotion-focused message ($M_{promotion} = 5.56$, $SD = 2.51$; $F(1, 256) = 10.58$, $p = .001$, $\eta_p^2 = .04$). A one-sample t-test on the believability index revealed a significant difference against the mid-point of the scale (5; $M = 5.40$; $t(259) = 3.10$, $p = .002$; $d = .19$) such that participants perceived the ad message they viewed as believable. There was no significant difference on the believability index across conditions ($F = .03$, n.s.).

Next, after revealing that the suggested retail price for the sneakers was $50, we asked participants to bid on the advertised sneakers and told them that the top bidders would be offered the sneakers based on the price they bid. After entering the bidding

amount, participants then responded to regulatory fit measures (Lee and Aaker 2004) on two nine-point scales ("It was easy to process the message" and "It was difficult to understand the message (reverse coded)"; r = .84)

Results

A 2 × 2 ANOVA on participants' bidding amount revealed only a significant interaction between regulatory focus and pet exposure ($F(1, 260) = 8.38$, $p = .004$, $\eta_p^2 = .03$). Planned contrasts showed that after exposure to the promotion-focused version of the ad message, participants in the dog condition bid significantly higher (M_{dog} = \$33.74, SD = \$11.81) than those in the cat condition (M_{cat} = \$28.23, SD = \$15.61; $F(1, 260) = 5.49$, $p = .020$, $\eta_p^2 = .02$). By contrast, after exposure to the prevention-focused version of the ad message, participants in the cat condition placed significantly higher bids (M_{cat} = \$32.45, SD = \$13.61) than those in the dog condition (M_{dog} = \$28.40, SD = \$12.66; $F(1, 260) = 3.05$, $p = .082$, $\eta_p^2 = .012$).

A 2 × 2 ANOVA on regulatory fit revealed only a significant interaction between exposure to pets and regulatory focus ($F(1, 260) = 9.80$, $p = .002$, $\eta_p^2 = .036$). Specifically, planned contrasts showed that for the promotion-focused ad, the dog version elicited higher regulatory fit ($M_{dog} = 5.21$, SD = 2.53) than the cat version ($M_{cat} = 4.19$, SD = 2.37; $F(1, 260) = 5.37$, $p = .021$, $\eta_p^2 = .02$). By contrast, for the prevention-focused ad, the cat version elicited higher regulatory fit ($M_{cat} = 5.15$, SD = 2.40) than the dog version ($M_{dog} = 4.24$, SD = 2.62; $F(1, 260) = 4.45$, $p = .036$, $\eta_p^2 = .017$).

To test the mediation prediction in H_4, we conducted a moderated mediation analysis using 5,000 bootstrapped samples (PROCESS Model 8; Hayes 2018), with exposure to pets as the independent variable, regulatory fit as the mediator, regulatory focus as the moderator, and bidding amount as the dependent variable. The index of moderated mediation was significant (b = 1.68, 95% confidence interval [CI]: [.30, 3.70]). Specifically, for the promotion-focused ad, the conditional indirect effect of pet exposure on bidding amount through regulatory fit was positive and significant (b = .89, 95% CI: [.05, 2.11]). By contrast, for the prevention-focused ad, the conditional indirect effect of pet exposure on bidding amount through regulatory fit was negative and significant (b = −.80, 95% CI: [−2.05, −.003]). Thus, the data support H_4.

Discussion

Using a new method (featuring a dog/cat as an integral part of the ad) to manipulate exposure to pets, we provide further evidence for our theorizing of an interactive effect between exposure to pets and regulatory focus of an ad on consumer responses. For sneaker ads featuring promotion-focused (prevention-focused) claims, consumers exposed to dogs (cats) formed higher bidding amount than those exposed to cats (dogs). Importantly, the findings of Study 6 also provide support for H_4, such that the influence of exposure to pets on bidding amount was mediated by the regulatory fit between the activated regulatory mindset and the regulatory focus of the ad claim. We also conducted an additional study to conceptually replicate this study in the financial decision-making context (for details, see Web Appendix P).

Study 7: Pet Exposure and Product Frames Induce Regulatory Fit and Choice

Study 7 has two objectives. First, it aims to lend additional support to H_3 and H_4 using a within-subject design. Second, to augment the robustness of our findings, we employ a different product category (toothpaste) and a new manipulation of pet exposure (pet pictures).

Method

Two hundred thirty-seven undergraduate students from a large southeastern U.S. university completed the study in exchange for partial course credit (M_{age} = 20 years; 45% female). The study featured a 2 (pet exposure: dog vs. cat) × 2 (products' regulatory focus: promotion- vs. prevention-focused) mixed ANOVA design, with pet exposure a between-subjects factor and products' regulatory focus a within-subjects factor.

Participants were randomly assigned to one of two conditions (pet exposure: dog vs. cat). We told participants that an online calendar company was interested in people's feedback on several dog (cat) pictures that it planned to incorporate into a dog- (cat-) themed calendar. Participants then were shown a series of dog (cat) pictures, one on each screen (order counterbalanced). Afterward, participants were again shown all the pictures they had seen on one screen and were instructed to pick one of the pets to imagine interacting with. (For the stimuli used, see Web Appendix N.)

Next, in an ostensibly different task, we presented participants with the descriptions of two toothpaste products (Wang and Lee 2006): Toothpaste A had strong promotion but weak prevention product claims, and Toothpaste B had strong prevention but weak promotion product claims (see Web Appendix O). We counterbalanced the order of the two toothpaste products across all participants. We then asked participants to evaluate each of the two products on four nine-point scales (1 = "dislike very much/very unfavorable/very unattractive/very bad," and 9 = "like very much/very favorable/very attractive/very good").

Afterward, we presented participants with all the strong feature claims and asked them to evaluate each of the features on a nine-point scale (1 = "not at all attractive," and 9 = "very attractive"). The features were evaluated as generic features of the product category, rather than as the features of a specific brand, and served as measures of regulatory fit (Wang and Lee 2006). That is, if participants relied more on (promotion or prevention) features that fit their regulatory orientations in their evaluation, they should find strong feature claims consistent with their regulatory orientations more attractive than claims that do not fit their orientations.

Results

We averaged participants' evaluations of the toothpaste products on the four items to form a brand attitude index for each product ($\alpha_A = .94$, $\alpha_B = .95$). We expected that participants assigned to the dog exposure condition would evaluate Toothpaste A (with the strong promotion claims) more favorably than those assigned to the cat exposure condition. By contrast, participants assigned to the cat exposure condition would evaluate Toothpaste B (with the strong prevention claims) more favorably than those assigned to the dog exposure condition. A mixed ANOVA with toothpaste attitudes as the within-subject variable and pet exposure as the between-subjects variable first revealed a significant main effect of toothpaste attitudes ($F(1, 235) = 4.47$, $p = .036$, $\eta_p^2 = .02$), such that, overall, participants evaluated Toothpaste A (with the strong promotion claims; $M = 6.94$) more positively than Toothpaste B (with the strong prevention claims; $M = 6.61$). Importantly, the predicted interaction also emerged ($F(1, 235) = 29.76$, $p < .001$, $\eta_p^2 = .11$). We found that participants who were exposed to dogs evaluated Toothpaste A more positively ($M = 7.41$, $SD = 1.25$) than Toothpaste B ($M = 6.29$, $SD = 1.74$, $t(235) = 5.74$, $p < .001$; $d = .52$). By contrast, participants who were exposed to cats formed more positive attitudes toward Toothpaste B ($M = 6.94$, $SD = 1.63$) than Toothpaste A ($M = 6.45$, $SD = 1.73$, $t(235) = -2.21$, $p = .029$; $d = -.21$).

We then analyzed participants' feature attractiveness ratings, which served as our regulatory fit measure. Because both feature type and toothpaste were measured within subject, we calculated a relative feature attractiveness index by dividing participants' attractiveness ratings of promotion features by their ratings of prevention features. With the index as the dependent variable, a one-way ANOVA revealed that participants in the dog exposure condition ($M_{dog} = 1.27$, $SD = .83$) perceived the promotion features as more attractive than participants in the cat exposure condition ($M_{cat} = 1.09$, $SD = .35$; $F(1, 235) = 4.66$, $p = .032$, $\eta_p^2 = .02$).

To further investigate the mediating role of regulatory fit, we conducted mediation analyses to examine whether perceived attractiveness of the product features mediated the effect of pet exposure on product evaluation. Given the within-subjects design, we used MEMORE macro developed by Montoya and Hayes (2017). With 5,000 bootstrapped samples, the analysis revealed a significant indirect effect of feature attractiveness ($b = .41$, $SE = .09$, 95% CI: [.23, .59]), indicating that regulatory fit mediated the effect of pet exposure on product evaluation.

Discussion

Using a within-subject design and a new product category for the dependent variable, Study 7 conceptually replicates the previous studies. Moreover, it provides additional support for H_3 in that exposure to pets interacted with an ad's regulatory focus to influence consumer responses and for H_4 in that such an effect is driven by regulatory fit.

General Discussion

Across 11 studies, employing different methods (secondary data, lab experiments, and real behavior), different operationalizations of pet exposure (pet ownership; viewing pet-featuring pictures, videos, or ads; and recalled experience with pets), and different measures and contexts of regulatory focus (e.g., financial, service, consumer products), we find converging evidence that pet exposure influences consumer judgments and behaviors through regulatory focus and regulatory fit. Specifically, we show that pet exposure fosters divergent regulatory orientations among consumers, such that exposure to dogs activates a promotion-focused motivational mindset while exposure to cats activates a prevention-focused motivational mindset (Studies 1–3). In Study 4, we further show that this effect is moderated by pet stereotypicality, such that the effects of pet exposure on regulatory mindsets dissipate when consumers are reminded of a pet that is inconsistent with the stereotypes of the species. These regulatory mindsets, when activated by pet exposure, carry over to influence downstream pet-unrelated consumer judgments, purchase decisions, and behaviors through regulatory fit (Studies 5–7), even in pet-unrelated consumption contexts.

Theoretical Contributions

Our research contributes to the literature in several ways. First, it recognizes pets as an important source of social influence on consumers' judgments and behaviors (Cavanaugh, Leonard, and Scammon 2008; Hirschman 1994; Holbrook and Woodside 2008). Prior research on marketplace social influence has examined the contexts of consumer-to-consumer and marketer-to-consumer interactions (e.g., Argo, White, and Dahl 2006; Chan and Sengupta 2010; Duclos, Wan, and Jiang 2013; Lee and Shrum 2012; Mead et al. 2011; White and Argo 2011; White and Dahl 2006, 2007). As examples of consumer-to-consumer interactions, Duclos, Wan, and Jiang (2013) show that social exclusion prompts riskier financial decisions because interpersonal rejection heightens the instrumentality of money to obtain benefits in life; Lee and Shrum (2012) find that social exclusion can lead to conspicuous consumption or prosocial behavior. As an example of marketer-to-consumer interactions, Chan and Sengupta (2010) find that consumers who receive insincere flattery from marketers still form favorable implicit evaluations of the marketer, but their explicit evaluations of the marketer are negative. Beyond these human-to-human contexts, our research suggests that the context of pet–human interactions as a source of social influence can similarly affect consumers' motivations, judgments, and behaviors.

Second, our research diverges from extant literature on human–animal relationships by going beyond the immediate context of pet ownership and investigating how pet exposure affects the way people render subsequent pet-unrelated judgments and decisions. Prior research on the effects of human–animal relationships has mainly focused on the immediate

context of pets and their owners, such as pet owners' health and psychological well-being (Amiot and Bastian 2015), their awareness and protection of animal rights (Kidd, Kidd, and Zasloff 1995), and their relationship satisfaction with pets (Cavanaugh, Leonard, and Scammon 2008). Going beyond this immediate context between pets and their owners, we posit and find that exposure to pets or pet-featuring stimuli fosters divergent regulatory orientations, which in turn influence downstream pet-unrelated judgments and decisions in the consumption domain. We hope that this research will stimulate further research to gain a more nuanced understanding of the impact of human–animal relationships.

Third, prior research identifies several antecedent variables of regulatory focus, such as one's cultural background (Lee, Aaker, and Gardner 2000), impulse purchase (Sengupta and Zhou 2007), and choosing for oneself versus others (Polman 2012). Most of these factors, however, are intrapersonal. Only recently have researchers begun exploring the interpersonal drivers of regulatory focus (e.g., social exclusion [Park and Baumeister 2015], reminders of friends vs. family members [Fei, You, and Yang 2020]). Contributing to this stream of research, we uncover a novel social source of regulatory orientation: exposure to pets. We find that dog exposure is associated with a promotion orientation, whereas cat exposure is associated with a prevention orientation. Additional research is necessary to further explore the social and interpersonal impact on people's regulatory orientation.

Practical Implications

Our findings also offer novel implications to marketers. First, marketers should consider crafting their advertising messages differently or recommending different products and services when they target consumers depending on their pet exposure situations. For example, to enhance the effectiveness of their advertising appeals or communication messages, marketers should emphasize promotion-focused goals such as gains and nongains if they are targeting dog owners or after consumers are exposed to dogs or dog-featuring stimuli (e.g., after just watching an ad about dogs). Conversely, they should focus on prevention-focused goals such as losses and nonlosses if they are pursuing cat owners or after consumers who are exposed to cats or cat-featuring stimuli. Importantly, our findings show that this advice holds even when the advertised product or service has nothing to do with pets or pet products.

Second, our findings offer important insights into how to incorporate pets into marketing communications. Dogs and cats frequently appear in advertisements and marketing campaigns. For example, Subaru has been running the "Dog Tested, Dog Approved" campaign since 2009 (Subaru 2020), and Sainsbury's "Mog the Cat" campaign raised a great amount of attention during the 2015 Christmas season (Hendriksz 2015). One consideration factor, according to our findings, is the type of products or services being advertised. For products or services mainly perceived as promotion-focused (e.g., stock investment, sports cars), featuring dogs in the ad is likely to increase the ad's persuasiveness. For products or services deemed more prevention-focused (e.g., mutual fund investment, insurance), featuring cats may increase the ad's appeal. According to the findings of the pet stereotypicality study, a caveat is that marketers should ensure that stereotypical pet temperaments are made salient in the message (e.g., the eagerness [cautiousness] aspect of the dog [cat] should be highlighted). Otherwise, the intended effects of featuring pets in the ad may not be achieved.

Third, pet-related marketing strategies are especially relevant in today's big-data era, in which marketers likely know more about consumers, including which types of pets they own or interact with. For example, marketers could obtain consumers' pet exposure information from the pet-related products purchased, the YouTube pet videos watched, or the Instagram pet photos posted and use this data to decide what type of marketing information to highlight. Alternatively, census information can provide marketers with an aggregated level of information about pets, as certain states or zip codes may have a higher concentration of dog (cat) owners. Marketers could use this information to determine the design of regional marketing campaigns.

Lastly, our findings that pets and pet ownership are potentially related to COVID-19 transmission rate and prevention behaviors could shed new light on policies related to prevention of COVID-19 and potentially other infectious diseases. For example, policy makers in states with more dog owners could design more customized educational programs and materials related to the diseases. Alternatively, when designing ads to prevent the transmission of COVID-19 and other infectious diseases, cats could be incorporated as a spokesperson and/or their temperaments can be referenced in the message to enhance the effectiveness of the ad.

Future Research Directions

This research indicates that pets can exert a strong social influence on consumers. Future research could examine the strength of the influence of pets versus people on consumer behavior. On the one hand, one may argue that pets' influence on consumers is weaker than other human influences, because people are more influenced by similar others (Andsager et al. 2006; Bandura 2002). On the other hand, it is also possible that pets may occasionally exert a stronger influence, especially considering that many pet owners admit that they prefer spending time with their pets over other people (Pasquini 2019).

Another possible research direction is to examine other differences between dog and cat exposure. For example, exposure to dogs may be more likely to lead to conspicuous consumption than cat exposure. This follows because many people likely perceive dogs (vs. cats) as less seclusive and more social. Along similar lines, research could examine the different effects of dog versus cat stimuli. For example, using a dog (cat) as a spokescharacter can increase a brand's perceived excitement. Although our research focuses on examining the effect of pet exposure on consumers' regulatory orientations, future research could investigate the reverse relationship of whether promotion-

(prevention-) focused consumers are more likely to adopt a dog (cat) or prefer dog- (cat-) related stimuli.

Research could also examine additional moderators for our findings. One example is pet anthropomorphism, or people's tendency to assign human characteristics to pets (Amiot and Bastian 2015). One prediction is that our findings that dog (cat) exposure evokes a promotion (prevention) orientation would be more salient among consumers who engage in pet anthropomorphism, because these consumers are more likely to be influenced by the pets. Another possible moderator is the role of culture. We conducted our studies primarily with American participants, and the United States is a culture in which the majority of people treat their pets as friends and family members (Sanders and Hirschman 1996). In many other cultures however, pets are not elevated to the same level, and thus consumers may treat their pets as possessions or servants (Beverland, Farrelly, and Lim 2008). Future research could examine whether our identified findings still hold in such cultures.

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Supplemental material

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References

American Veterinary Medical Association (2018), *US Pet Ownership & Demographics Sourcebook*. Schaumburg, IL: American Veterinary Medical Association.

Amiot, Catherine E. and Brock Bastian (2015), "Toward a Psychology of Human–Animal Relations," *Psychological Bulletin*, 141 (1), 6–47.

Andsager, Julie L., Victoria Bemker, Hong-Lim Choi, and Vitalis Torwel (2006), "Perceived Similarity of Exemplar Traits and Behavior: Effects on Message Evaluation," *Communication Research*, 33 (1), 3–18.

APPA (2018), *APPA National Pet Owners Survey 2017-2018*. Greenwich, CT: APPA.

Argo, Jennifer J., Katherine White, and Darren W. Dahl (2006), "Social Comparison Theory and Deception in the Interpersonal Exchange of Consumption Information," *Journal of Consumer Research*, 33 (1), 99–108.

ASPCA (2021), "New ASPCA Survey Shows Overwhelming Majority of Dogs and Cats Acquired During the Pandemic Are Still in Their Homes," press release (May 26), https://www.aspca.org/about-us/press-releases/new-aspca-survey-shows-overwhelming-majority-dogs-and-cats-acquired-during.

Avnet, Tamar and E. Tory Higgins (2006), "How Regulatory Fit Affects Value in Consumer Choices and Opinions," *Journal of Marketing Research*, 43 (1), 1–10.

Bandura, Albert (2002), "Social Cognitive Theory in Cultural Context," *Applied Psychology*, 51 (2), 269–90.

Beverland, Michael B., Francis Farrelly, and Elison Ai Ching Lim (2008), "Exploring the Dark Side of Pet Ownership: Status- and Control-Based Pet Consumption," *Journal of Business Research*, 61 (5), 490–96.

Boldero, Jennifer M. and E. Tory Higgins (2011), "Regulatory Focus and Political Decision Making: When People Favor Reform Over the Status Quo," *Political Psychology*, 32 (3), 399–418.

Bradshaw, John (2012), *Dog Sense: How the New Science of Dog Behavior Can Make You a Better Friend to Your Pet*. New York: Basic Books.

Bradshaw, John (2013), *Cat Sense: How the New Feline Science Can Make You a Better Friend to Your Pet*. New York: Basic Books.

Cavanaugh, Lisa A., Hillary A. Leonard, and Debra L. Scammon (2008), "A Tail of Two Personalities: How Canine Companions Shape Relationships and Well-Being," *Journal of Business Research*, 61 (5), 469–79.

CDC (2020), "CDC COVID Data Tracker," (accessed November 1, 2020), https://covid.cdc.gov/covid-data-tracker/#cases_casesper100k.

Cesario, Joseph, Heidi Grant, and E. Tory Higgins (2004), "Regulatory Fit and Persuasion: Transfer from 'Feeling Right,'" *Journal of Personality and Social Psychology*, 86 (3), 388–404.

Chan, Elaine and Jaideep Sengupta (2010), "Insincere Flattery Actually Works: A Dual Attitudes Perspective," *Journal of Marketing Research*, 47 (1), 122–33.

Chernev, Alexander (2004), "Goal Orientation and Consumer Preference for the Status Quo," *Journal of Consumer Research*, 31 (3), 557–65.

Crowe, Ellen and E. Tory Higgins (1997), "Regulatory Focus and Strategic Inclinations: Promotion and Prevention in Decision-Making," *Organizational Behavior and Human Decision Processes*, 69 (2), 117–32.

Du, Rex Yuxing, Ye Hu, and Sina Damangir (2015), "Leveraging Trends in Online Searches for Product Features in Market Response Modeling," *Journal of Marketing*, 79 (1), 29–43.

Duclos, Rod, Echo Wen Wan, and Yuwei Jiang (2013), "Show Me the Honey! Effects of Social Exclusion on Financial Risk-Taking," *Journal of Consumer Research*, 40 (1), 122–35.

Farand, Chloe (2016), "Which Love Us More – Cats or Dogs?" *The Independent* (January 31), https://www.independent.co.uk/news/

uk/bbc-documentary-answers-age-old-question-which-love-us-more-cats-or-dogs-a6844846.html.

Fei, Xianzheng, Yanfen You, and Xiaojing Yang (2020), "'We' Are Different: Exploring the Diverse Effects of Friend and Family Accessibility on Consumers' Product Preferences," *Journal of Consumer Psychology*, 39 (3), 543–50.

Gorn, Gerald J., Yuwei Jiang, and Gita Venkataramani Johar (2008), "Babyfaces, Trait Inferences, and Company Evaluations in a Public Relations Crisis," *Journal of Consumer Research*, 35 (1), 36–49.

Hayes, Andrew F. (2018), *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. New York: Guilford Press.

Hendriksz, Vivian (2015), "Sainsbury's 'Mog the Cat' Wins the Christmas 2015 Advert Battle," FashionUnited (December 23), https://fashionunited.uk/news/fashion/sainsbury-s-mog-the-cat-wins-the-christmas-2015-advert-battle/2015122318828.

Higgins, E. Tory (1987), "Self-Discrepancy: A Theory Relating Self and Affect," *Psychological Review*, 94 (3), 319–40.

Higgins, E. Tory (1996), "The 'Self Digest': Self-Knowledge Serving Self-Regulatory Functions," *Journal of Personality and Social Psychology*, 71 (6), 1062–83.

Higgins, E. Tory (1997), "Beyond Pleasure and Pain," *American Psychologist*, 52 (12), 1280–1300.

Higgins, E. Tory (2000), "Making a Good Decision: Value from Fit," *American Psychologist*, 55 (11), 1217–30.

Higgins, E. Tory (2002), "How Self-Regulation Creates Distinct Values: The Case of Promotion and Prevention Decision Making," *Journal of Consumer Psychology*, 12 (3), 177–91.

Hirschman, Elizabeth C. (1994), "Consumers and Their Animal Companions," *Journal of Consumer Research*, 20 (4), 616–32.

Holbrook, Morris B. and Arch G. Woodside (2008), "Animal Companions, Consumption Experiences, and the Marketing of Pets: Transcending Boundaries in the Animal-Human Distinction," *Journal of Business Research*, 61 (5), 377–81.

Hong, Jiewen and Angela Y. Lee (2007), "Be Fit and Be Strong: Mastering Self-Regulation Through Regulatory Fit," *Journal of Consumer Research*, 34 (5), 682–95.

Jardim-Messeder, Débora, Kelly Lambert, Stephen Noctor, Fernanda M. Pestana, Maria E. de Castro Leal,, Mads F. Bertelsen, et al. (2017), "Dogs Have the Most Neurons, Though Not the Largest Brain: Trade-Off Between Body Mass and Number of Neurons in the Cerebral Cortex of Large Carnivoran Species," *Frontiers in Neuroanatomy*, 11, https://doi.org/10.3389/fnana.2017.00118.

Kidd, Aline H., Robert M. Kidd, and R. Lee Zasloff (1995), "Developmental Factors in Positive Attitudes Toward Zoo Animals," *Psychological Reports*, 76 (1), 71–81.

Kozinets, Robert, Anthony Patterson, and Rachel Ashman (2017), "Networks of Desire: How Technology Increases Our Passion to Consume," *Journal of Consumer Research*, 43 (5), 659–83.

Labroo, Aparna A. and Angela Y. Lee (2006), "Between Two Brands: A Goal Fluency Account of Brand Evaluation," *Journal of Marketing Research*, 43 (3), 374–85.

Langenfeld, Shane (2020), "Why Dogs Adapt to Their Environment," Wag! (accessed December 15, 2020), https://wagwalking.com/behavior/why-dogs-adapt-to-their-environment.

Lee, Angela Y. and Jennifer L. Aaker (2004), "Bringing the Frame into Focus: The Influence of Regulatory Fit on Processing Fluency and Persuasion," *Journal of Personality and Social Psychology*, 86 (2), 205–18.

Lee, Angela Y., Jennifer L. Aaker, and Wendi L. Gardner (2000), "The Pleasures and Pains of Distinct Self-Construals: The Role of Interdependence in Regulatory Focus," *Journal of Personality and Social Psychology*, 78 (6), 1122–34.

Lee, Angela Y., Punam Anand Keller, and Brian Sternthal (2010), "Value from Regulatory Construal Fit: The Persuasive Impact of Fit Between Consumer Goals and Message Concreteness," *Journal of Consumer Research*, 36 (5), 735–47.

Lee, Jaehoon and L.J. Shrum (2012), "Conspicuous Consumption Versus Charitable Behavior in Response to Social Exclusion: A Differential Needs Explanation," *Journal of Consumer Research*, 39 (3), 530–44.

Liberman, Nira, Lorraine Chen Idson, Christopher J. Camacho, and E. Tory Higgins (1999), "Promotion and Prevention Choices Between Stability and Change," *Journal of Personality and Social Psychology*, 77 (6), 1135–45.

Lockwood, Penelope, Christian H. Jordan, and Ziva Kunda (2002), "Motivation by Positive or Negative Role Models: Regulatory Focus Determines Who Will Best Inspire Us," *Journal of Personality and Social Psychology*, 83 (4), 854–64.

Ma, Jingjing and Neal J. Roese (2014), "The Maximizing Mind-Set," *Journal of Consumer Research*, 41 (1), 71–92.

MacInnis, Cara C. and Gordon Hodson (2015), "Do American States with More Religious or Conservative Populations Search More for Sexual Content on Google?" *Archives of Sexual Behavior*, 44 (1), 137–47.

Mead, Nicole L., Roy F. Baumeister, Tyler F. Stillman, Catherine D. Rawn, and Kathleen D. Vohs (2011), "Social Exclusion Causes People to Spend and Consume Strategically in the Service of Affiliation," *Journal of Consumer Research*, 37 (5), 902–19.

Mellon, Jonathan (2013), "Where and When Can We Use Google Trends to Measure Issue Salience?" *Political Science & Politics*, 46 (2), 280–90.

Miklósi, Ádám, Péter Pongrácz, Gabriella Lakatos, József Topál, and Vilmos Csányi (2005), "A Comparative Study of the Use of Visual Communicative Signals in Interactions Between Dogs (Canis familiaris) and Humans and Cats (Felis catus) and Humans," *Journal of Comparative Psychology*, 119 (2), 179–86.

Mogilner, Cassie, Jennifer L. Aaker, and Ginger L. Pennington (2008), "Time Will Tell: The Distant Appeal of Promotion and Imminent Appeal of Prevention," *Journal of Consumer Research*, 34 (5), 670–81.

Montoya, Amanda K. and Andrew F. Hayes (2017), "Two-Condition Within-Participant Statistical Mediation Analysis: A Path-Analytic Framework," *Psychological Methods*, 22 (1), 6–27.

Myers, Eugene Olin (1999), "Human Development as Transcendence of the Animal Body and the Child-Animal Association in Psychological Thought," *Society & Animals*, 7 (2), 121–40.

Nagasawa, Miho, Shouhei Mitsui, Shiori En, Nobuyo Ohtani, Mitsuaki Ohta,, Yasuo Sakuma, et al. (2015), "Oxytocin-Gaze Positive Loop and the Coevolution of Human-Dog Bonds," *Science*, 348 (6232), 333–36.

The New York Times (2017), "2016 Presidential Election Results," (accessed November 1, 2020), https://www.nytimes.com/elections/2016/results/president.

Park, Jina and Roy F. Baumeister (2015), "Social Exclusion Causes a Shift Toward Prevention Motivation," *Journal of Experimental Social Psychology*, 56, 153–9.

Pasquini, Maria (2019), "Over 70 Percent of Dog Owners Admit They Prefer Spending Time with Their Pets over Other People," *People* (August 26), https://people.com/pets/over-70-percent-of-dog-owners-admit-they-prefer-spending-time-with-their-pets-over-other-people/.

Pham, Michel Tuan and Tamar Avnet (2004), "Ideals and Oughts and the Reliance on Affect Versus Substance in Persuasion," *Journal of Consumer Research*, 30 (4), 503–18.

Pham, Michel Tuan and Hannah H. Chang (2010), "Regulatory Focus, Regulatory Fit, and the Search and Consideration of Choice Alternatives," *Journal of Consumer Research*, 37 (4), 626–40.

Polman, Evan (2012), "Self–Other Decision Making and Loss Aversion," *Organizational Behavior and Human Decision Processes*, 119 (2), 141–50.

Potter, Alice and Daniel Simon Mills (2015), "Domestic Cats (Felis silvestris catus) Do Not Show Signs of Secure Attachment to Their Owners," *PLoS One*, 10 (9), e0135109.

Purewal, Rebecca, Robert Christley, Katarzyna Kordas, Carol Joinson, Kerstin Meints,, Nancy Gee, et al. (2017), "Companion Animals and Child/Adolescent Development: A Systematic Review of the Evidence," *International Journal of Environmental Research and Public Health*, 14 (3), 234.

Sanders, Clinton R. and Elizabeth C. Hirschman (1996), "Guest Editors' Introduction: Involvement with Animals as Consumer Experience," *Society & Animals*, 4 (2), 111–19.

Scholer, Abigail A., James F.M. Cornwell, and E. Tory Higgins (2019), "Regulatory Focus Theory and Research: Catching up and Looking Forward After 20 Years," in *Oxford Handbook of Human Motivation*, Vol. 2, Richard M. Ryan, ed. New York: Oxford University Press.

Schultheiß, Sebastian and Dirk Lewandowski (2021), "How Users' Knowledge of Advertisements Influences Their Viewing and Selection Behavior in Search Engines," *Journal of the Association for Information Science and Technology*, 72 (3), 285–301.

Sengupta, Jaideep and Rongrong Zhou (2007), "Understanding Impulsive Eaters' Choice Behaviors: The Motivational Influences of Regulatory Focus," *Journal of Marketing Research*, 44 (2), 297–308.

Serpell, James A. and Elizabeth S. Paul (2011), "Pets in the Family: An Evolutionary Perspective," in *The Oxford Handbook of Evolutionary Family Psychology*, C.A. Salmon and T.K. Shackelford, eds. New York: Oxford University Press, 298–309.

Subaru (2020), "Dog Tested. Dog Approved," Subaru (accessed December 10, 2020), https://www.subaru.com/pets/our-videos.html.

U.S. Bureau of Economic Analysis (2019), "Per Capita Real GDP by State," U.S. Department of Commerce (accessed November 1, 2020), https://apps.bea.gov/iTable/index_nipa.cfm.

U.S. Bureau of the Census (2017), "Household Income: 2016," American Community Survey Briefs.

Wang, Jing and Angela Y. Lee (2006), "The Role of Regulatory Focus in Preference Construction," *Journal of Marketing Research*, 43 (1), 28–38.

Watson, David, Lee Anna Clark, and Auke Tellegen (1988), "Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales," *Journal of Personality and Social Psychology*, 54 (6), 1063–70.

Weeks, Brian and Brian Southwell (2010), "The Symbiosis of News Coverage and Aggregate Online Search Behavior: Obama, Rumors, and Presidential Politics," *Mass Communication and Society*, 13 (4), 341–60.

White, Katherine and Jennifer J. Argo (2011), "When Imitation Doesn't Flatter: The Role of Consumer Distinctiveness in Responses to Mimicry," *Journal of Consumer Research*, 38 (4), 667–80.

White, Katherine and Darren W. Dahl (2006), "To Be or *Not* Be? The Influence of Dissociative Reference Groups on Consumer Preferences," *Journal of Consumer Psychology*, 16 (4), 404–14.

White, Katherine and Darren W. Dahl (2007), "Are All Out-Groups Created Equal? Consumer Identity and Dissociative Influence," *Journal of Consumer Research*, 34 (4), 525–36.

Wyer, Robert S. Jr., and Alison Jing Xu (2010), "The Role of Behavioral Mind-Sets in Goal-Directed Activity: Conceptual Underpinnings and Empirical Evidence," *Journal of Consumer Psychology*, 20 (2), 107–25.

Wynne, Clive D.L., Monique A.R. Udell, and Kathryn A. Lord (2008), "Ontogeny's Impacts on Human–Dog Communication," *Animal Behavior*, 76 (4), e1–4.

Xu, Alison Jing, Christine Moorman, Vivian Yue Qin, and Akshay R. Rao (2020), "Four More Years: Presidential Elections, Comparative Mindset, and Managerial Decisions," *Academy of Management Journal*, 63 (5), 1370–94.

Zeifman, Debra and Cindy Hazan (1997), "Attachment: The Bond in Pair-Bonds," in *Evolutionary Psychology*, Jeffry A. Simpson and Douglas T. Kenrick, eds. Mahwah, NJ: Lawrence Erlbaum Associates, 237–62.

Zhou, Rongrong and Michel Tuan Pham (2004), "Promotion and Prevention Across Mental Accounts: When Financial Products Dictate Consumers' Investment Goals," *Journal of Consumer Research*, 31 (1), 125–35.