

THE ROLE OF INDIVIDUAL DIFFERENCES AND INVOLVEMENT ON ATTITUDES
TOWARD ANIMAL WELFARE

by

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B.S., Valparaiso University, 2008

A THESIS

submitted in partial fulfillment of the requirements for the degree

MASTER OF SCIENCE

Department of Psychology
College of Arts and Sciences

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2010

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Abstract

Previous research has indicated that many factors influence the likelihood of using the central or peripheral routes of processing during exposure to a persuasive message, including involvement in the message. Previous research has generally focused on response involvement, which is based on outcome, while the focus of the present study is involvement based on personal investment. In the present study, 229 undergraduates were assessed on their trait empathy toward animals, and attitudes toward animals. They read a strong or weak persuasive message presented by either an attractive or less attractive writer. This design replicated previous findings by Bae (2008) on empathy and attitude change, and extended them by examining them experimentally, with a focus on issue-based involvement, which relies on moral or ego involvement. Participants were tested on several distinct DVs designed to indicate their change in attitude and behavior. Results varied for each DV, with source attractiveness predicting willingness to wear a button and display a bumper sticker, but with trait empathy predicting willingness to adopt a pet and vote to support a petition. The results imply that participants relied on different routes of processing depending on the DV, and that the role of emotion in issue involvement may inform advertisers in ways to effectively increase the likelihood of paying attention to a message.

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Acknowledgements

I would like to thank the Cognitive Research Lab Group for their input on the ongoing evolution of this project. I would like to thank LaToya Malone for her encouragement and positive attitude. I would like to thank my committee members, Drs. Laura Brannon and Lester Loschky for their critique and guidance through this process, and would especially like to thank my advisor Dr. Richard Harris for patiently reading through numerous manuscripts, for providing his very useful input throughout the project, and for encouraging me through this long and arduous process.

CHAPTER 1 - Introduction

Across the U.S., animal rescue organizations such as the Humane Society, ASPCA, and city shelters struggle to persuade pet owners to spay and neuter their animals. Advocates like Bob Barker spread the message in direct ways, while others seek to emphasize the benefits of pet sterilization in more subtle ways. However, the continual crisis of millions of homeless animals makes it apparent that persuading pet owners to change their behavior is trickier than it would seem. When the benefits are so clear, why is it so difficult to persuade people to change their ways? The topic of attitudinal and behavioral change has been thoroughly researched for decades, but little research has been done on issues of animal welfare, and there is still much to be understood about factors influencing attitudinal shifts leading to behavioral changes such as emotional valence and empathy.

Elaboration Likelihood Model: Two Routes of Processing

The most widely researched theoretical framework of attitude change is the Elaboration Likelihood Model, as first proposed by Petty and Cacioppo (1986). This model provides a basic understanding of the processes underlying the effectiveness of a persuasive communication and the resultant attitudinal change. Petty and Cacioppo propose two routes of message processing: central and peripheral.

In order to take the central route, persons must be motivated to process the information presented to them. This motivation is influenced by several factors, including perceived personal involvement, need for cognition, and personal responsibility. For the purposes of this paper, we will be focusing primarily on involvement, which will be discussed in further detail shortly. If a listener is motivated to process the information, and is subsequently able (if they have sufficient

attention to allocate, for example), they will change their attitude based on the valence of the cognitions. In other words, if favorable arguments stem from thoughts on the topic, attitude change will be favorable, but if counter-arguments are generated, the attitude will change to be less favorable toward the communication (Petty & Cacioppo, 1986).

The second route to persuasion is known as the peripheral route, and is influenced mostly by secondary cues such as the attractiveness of the speaker, the trustworthiness of the speaker (Petty & Cacioppo, 1986), and the number of arguments (Petty & Cacioppo, 1984). Peripheral cues are generally utilized when motivation for processing is low, such as when the receiver of the communication has low interest or low ability to process, such as lack of attention. Both routes can produce attitude change, but central processing tends to yield more lasting changes, while changes caused by peripheral cues tend to be more subject to reversion to the original attitude (Petty & Cacioppo, 1986). Peripheral cues are most important when involvement and other motivational factors are low.

Motivational Factors: Involvement

It would seem that the optimal situation for producing attitude change would be a situation in which a person was highly involved with the issue, because the person would be motivated to actively attend to the communication and therefore be more likely to change their thoughts. There are two types of involvement: response involvement and issue involvement (Petty & Cacioppo, 1979). Response involvement is concerned primarily with the situational rewards and outcomes, rather than the attitudinal aspects, and in much previous research it is this type of involvement that has been tested. For example, an early study on involvement manipulated an opposite-sex visitation policy argument at a college (Petty & Cacioppo, 1979). Although this may have been an important issue for some participants because of their personal

or moral views, or whether or not they had a significant other at the time of the experiment, it is equally as likely that participants were only interested in the topic due to the outcome affecting them or their peers, not because of some deeper moral involvement with the issue. Studies that look at the availability of products rely exclusively on response involvement, and although these studies may inform us about participants' willingness to buy razors, the results do not necessarily generalize to ethical, moral, or health-based issues. Conversely, issue involvement refers to the extent to which a person cares about the topic of interest; for example, a member of PETA would likely have higher issue involvement for an animal welfare cause than would a member of a human rights group. The PETA member's high issue involvement would increase motivation to process relevant information.

There have been conflicting reports on the benefits of issue involvement, however, because valence poses a problem. Increased involvement may increase counterarguing in a person who is involved with, but opposes, the stance of an argument (Miller, 1965). In other words, a person who is strongly against climate change policies may be highly motivated to listen to and process an argument, but may also be more likely to formulate rebuttals and therefore retain previously held beliefs. However, when a communication is consistent with a previously held belief, persons will be more likely to strengthen their attitude toward the position. In both cases, high involvement results in increased cognition, but the amount of change gained depends on the valence of the attitude (Petty & Cacioppo, 1979).

In order to test this theory, Petty & Cacioppo (1979) performed a series of experiments. In the first study, the researchers presented arguments on the topic of opposite sex visitation policy in college dorms, and varied involvement by manipulating whether this policy change might take place at the students' own university, or one far away from them. The results

suggested that involvement decreased the effectiveness of the counter-attitudinal message, but increased the effectiveness of the pro-attitudinal message, confirming the hypothesis that involvement increases attitude change when valence of the argument and attitude are congruent (Petty & Cacioppo, 1979). However, this poses another question, which the authors sought to address in their second study: does the strength of the argument matter? Theoretically, if an argument is strong, it will be more difficult to rebut, and therefore the increased amount of processing will affect change in the direction of the argument regardless of the original position. The researchers used strong and weak arguments to advocate a comprehensive graduation exam for college students. The results suggested that highly involved participants produced more favorable arguments and fewer counterarguments for the strong communication, and more counterarguments to the weak position. In the low involvement condition, there was no difference in the number of favorable or counterarguments produced (1979). In summary, Petty and Cacioppo concluded that if arguments are sufficiently compelling, high involvement may aid attitude change regardless of valence of the prior opinion or the argument.

If, under high involvement conditions, strong arguments yield attitude change, we must ask what types of arguments or cues are effective under low involvement conditions. Petty, Cacioppo, and Goldman (1981) again used the comprehensive exam scenario to evaluate the effects of involvement and peripheral cues. Half the participants learned that the policy changes would take effect in one year (high involvement), and the other half were told that the changes would not take place until 10 years in the future (low involvement). The researchers varied perceived expertise by telling the participants that the persuasive message had been prepared either by a local high school class (low expertise), or by the Carnegie Commission on Higher Education (high expertise), and participants heard either strong or weak arguments. The results

indicated that, in the high involvement condition, argument quality affected attitudes, but expertise was not a significant factor. However, in the low involvement condition, expertise affected attitudes, but the strength of the argument did not (1981). It is clear that involvement is an important factor in determining the route of processing a person takes, and the implications for advertising campaigns are clear: in order to be effective, advertisers need to rely on strong arguments for those who are involved, and also utilize strong peripheral cues for people who are less motivated to process information. Petty, Cacioppo, and Schumann (1983) used razor ads and manipulated involvement by suggesting that the product either would or would not be available in the participants' area in the near future and found the same pattern of results.

Clearly, involvement is vital to message processing. It is apparent that the most effective advertising campaigns should utilize strong arguments directed at highly involved individuals, or favorable peripheral cues directed at less involved individuals. However, there are some deficiencies in many of the studies discussed here. As Petty & Cacioppo (1979) discussed, there are two types of involvement and many of the studies discussed chose to experimentally manipulate only response involvement, so that participants are invested in an issue because the result affects them, but not because of any particular emotional or egoistic tie. It is possible that there is a qualitative difference between the influence these different types of involvement have on increasing the likelihood of message processing. The main downfall of this omission is that issue involvement offers a potentially greater opportunity to examine the importance of an emotional response in conjunction with the cognitive processes at work in central processing.

Issue Involvement, Empathy, and Behavioral Intention

In order to address the topic of issue involvement, Kirby, Ureda, Rose, and Hussey (1998) studied a sample of middle-aged Black women, who are considered to be at high risk for

developing breast cancer. The researchers utilized strong and weak arguments about the importance of yearly mammograms (a topic that is likely closer to these participants' hearts than a razor ad), as well as favorable and unfavorable peripheral cues, in order to evaluate willingness of high-involvement and low-involvement participants to call a toll-free number. The researchers embedded the advertisement within a half-hour segment of *The Oprah Winfrey Show* (determined to be popular with the target audience), and varied both the strength of the argument and peripheral cues, including music choice and presentation of the ad in either black and white or color. They found results consistent with previous findings. The main difference between this study and previous studies is that involvement was not manipulated, but measured, and was therefore a more natural and possibly more sensitive measure of issue involvement. This suggests that there is at least some similarity between the type of processing induced by issue involvement and outcome involvement, because, as with previous studies focusing on outcome involvement, the researchers found that participants who were more involved were more persuaded by strong messages, while those who were less involved were more persuaded by peripheral cues.

In a study on the effectiveness of educational entertainment on persuading people to sign a cornea donor card, Bae (2008) discusses the unique ability of educational entertainment to elicit both cognitive and emotional responses. Bae posits that the connection between emotions and cognitions is what makes narrative educational entertainment so effective. By eliciting sympathy, the ability to feel sad for another's misfortune, and empathy, the ability to take another's perspective cognitively and feel what they are feeling, motivation to cognitively process information is increased, and issue involvement is therefore increased. Bae suggests a mediating relationship between emotion and issue involvement (Bae, 2008). Likewise, Bae

discusses the difference between attitudinal change and intentions. According to the theory of planned behavior, behavioral intention is the best determinant of actual behavior (Ajzen, 1991). Attitudes, motivations, and perceived control combine to create intentions. Bae posits that sympathy and empathy combine to influence involvement, which influences message processing, which in turn influences intention and behavioral outcomes. Participants consisted of 1500 Korean viewers of an education-entertainment show about cornea donation. Participants viewed the show on cornea donation, and were then polled afterwards by filling out packets mailed to them. Participants' sympathy and empathy responses to the cornea program were assessed using 7-point Likert scales, and participants were assessed for their level of involvement with this issue using a 10-item inventory. Participants were then given an attitudinal measure, and were given inventories assessing subjective norm (their beliefs on norms about organ donation), perceived behavioral control, and intention to sign a cornea donation card. To test this model, the researcher used structural equation modeling and found that the data supported the theory that sympathy and empathy combined to affect involvement, which is a predictor of attitude/behavioral change. Bae's study provides an a good start toward understanding the role of emotion in involvement. Previous research on empathy supports the notion that empathy is a predictor of involvement in media (Kinkaid, 2002). Bae (2008) demonstrated through his model that this appears to be true for issue-oriented entertainment media, however since participants were selected after the fact based on people who watched the show, there could be some problems with self-selection, for example, people who chose to watch the show may have been overall more empathic or more interested in the topic than people who did not. Likewise, the study simply measured existing traits and attitudes post-hoc without any manipulation.

Research by de Waal (2008) suggests that empathy can serve as a catalyst for helping behavior. Likewise, Wurbel (2009) asserts that “[an emotional response] is triggered by our ethical principles” and that “compassion is facilitated by empathy.” In other words, we feel empathy toward people whose rights or well-being are perceived as violated according to our morals, and this facilitates compassion and therefore, action. Wurbel argues that this process is not necessarily limited to humans, but that when an animal's well-being is harmed or its rights are violated, we feel empathy for them and their plight and this triggers us to take action (Wurbel, 2009).

Signal and Taylor (2007) examined Wurbel's assertions empirically. The Interpersonal Reactivity Index (IRI), designed by Davis (1983), is a set of four subscales used to assess four distinct aspects of empathy. The Empathic Concern subscale is the scale often associated with other-oriented feelings. This includes feelings of sympathy for the misfortune of others. Using the Animal Attitude Scale (AAS) developed by Herzog, Betchart, & Pittman (1991), which assesses how favorably people feel in regard to issues such as fur usage or animal captivity, Signal and Taylor hypothesized that more empathic people would have more positive attitudes toward animals. Although the IRI was originally designed to measure empathy toward other people, Signal and Taylor verified that there is a significant positive correlation between attitudes toward animals and Empathic Concern (Signal & Taylor, 2007). Because of these findings, we believe that the topic of animal welfare will be appropriate to evoke varying amounts of involvement. However, in order to further verify the link between attitudes toward animals and empathy, we used a scale derived from Davis' IRI (Davis, 1983) with the intent of measuring empathy specifically directed toward animals.

The present study sought to examine the role of empathy in the Elaboration Likelihood Model, to examine issue involvement by looking both at prior attitudes toward spaying and neutering pets and attempting to induce involvement with the issue by using an emotional appeal, to experimentally test Bae's findings on empathy, to examine Signal and Taylor's assertion that trait empathy is correlated with positive attitudes toward animals, and to replicate Ajzen's findings on the reasoned action model. The topic of animal sterilization was chosen because of the variety of beliefs on the topic. It is an area that has not been heavily researched, and can be used to replicate and extend previous findings.

Hypotheses

Hypothesis 1 states that, in accordance with previous findings, we expect to find two two-way interactions wherein participants who view emotional captions about the spay and neuter issue (high issue involvement) will be more likely to support a law against pet owners who fail to sterilize their animals than those who view neutral captions after hearing a strong argument, and will be more likely to vote to support a petition in favor of the law, regardless of speaker attractiveness.

Likewise for hypothesis 2, we expect that participants who view neutral captions about the spay and neuter issue (low issue involvement) will be more likely to support the law when the message is delivered by an attractive source than when the source is less attractive, regardless of strength of argument.

Hypothesis 3 predicts that participants who are more empathic toward animals will reflect the pattern of results expected for those who are highly involved (H1), while less empathic participants will reflect the pattern for those who are less involved (H2).

Hypothesis 4 posits that dog and cat ownership will serve as proxy variables for the high and low involvement conditions and will demonstrate a similar pattern to the results of hypotheses 1 and 2. Hypothesis 5 states that attitudes toward animals and empathy toward animals will be positively correlated. Hypothesis 6 states that intent to support the law requiring spaying and neutering of pets will predict whether the participant votes to support an online petition.

CHAPTER 2 - Method

Participants

Participants consisted of 229 undergraduate students from the General Psychology classes at Kansas State University receiving experimental course credit. Participants ranged from 17-44 years old, with the mean age of 19.8 and the mode being 19 years. Of the participants, 143 were women and 86 were men. Approximately 86% of the participants were pet owners of some kind (dogs, cats, reptiles, fish, or rodents), while only 14% did not consider themselves pet owners of any kind. About 70% owned a cat or a dog only, less than 1% owned only a fish, rodent, or reptile, and 15% owned both a cat or dog and a rodent, fish, or reptile. 189 (83%) of participants reported that they had either had their pet spayed/neutered, or if they did not have one, that they would, and 40 participants (17%) said they either did not or would not spay/neuter their pet. The study was completed online using the Kansas State Axio system.

Materials

Empathy Toward Animals (ETA) scale

The Empathy Toward Animals scale (ETA) is a 12-item scale derived from Davis' IRI (1983) by the author, utilizing adaptations of his Empathic Concern (EC) and Perspective Taking (PT) subscales. Rather than asking the questions in Davis' IRI in regard to people, each question was slightly rephrased to make reference to animals. For the 7-item EC subscale, two examples were: "When I see an animal being taken advantage of, I feel kind of protective toward it" and "I am often quite touched by things I see happen to animals." For the 5-item PT subscale, sample questions were: "I sometimes try to understand my pets better by imagining how things look from their perspective" and "When I'm upset with my pet, I usually try to "put myself in his

shoes” for a while.” Two questions were unable to be adapted from Davis' PT subscale and were omitted, leaving 7 questions in the EC subscale and 5 items in the PT subscale. The instrument was constructed specifically for the study. See Appendix A for the complete scale.

Animal Attitude Scale

The Animal Attitude Scale (AAS) was utilized (Herzog, Betchart, & Pittman, 1991). The scale consists of 20 questions on 5-point Likert scales with responses ranging from 'Strongly Disagree' to 'Strongly Agree.' Example items included: “Wild animals should not be trapped and their skins made into fur coats,” “Basically humans have the right to use animals as they see fit,” and “The use of animals in rodeos and circuses is cruel.” High scores indicate more positive attitudes toward animal welfare (Herzog, Betchart, & Pittman, 1991, as cited in Signal & Taylor, 2007). See Appendix B for full scale.

Emotional Involvement Manipulation

Participants viewed a series of 6 photographs of dogs and cats in neutral settings (yards, homes, etc), which were captioned either with general statements about dogs and cats or statements designed to elicit empathy. For example, a neutral caption was: “Mixed breed dogs like Sam (pictured) make wonderful additions to any home. Sam's Siberian Husky side gives him an affinity for snow.” An emotional caption was: “Many accidental litters like Sam's (pictured) end up in shelters or abandoned on streets. Sam spent most of his life alone outside in his owner's yard.” See Appendix C for pictures and captions.

Persuasive Message

Participants read a persuasive message, arguing for the institution of a law requiring pet owners to spay and neuter their pets. The arguments consisted of eight facts about the benefits of spaying and neutering arranged in the form of a persuasive message arguing for the institution of

the law that would require unsterilized pets to be registered with the local municipality, and owners to be fined for each unplanned litter. In order to identify the strongest and weakest arguments in favor of spaying and neutering pets, a survey was administered to fifteen pilot pet owners, instructing them to “please rate the arguments from 1-7, with **one** being a **strong**, compelling argument, and **seven** being a **weak**, unconvincing argument.” The data were analyzed, and 16 of the most and least compelling arguments were identified. The eight strongest arguments were formulated into a persuasive message, consisting of five paragraphs arguing for the law ($M = 5.5$). The arguments included, for example, preventing unwanted puppies/kittens from being born, painful diseases, and messy menstruation. The weak argument consisted of the eight weakest arguments as identified by the survey, including arguments like dangers of cars and wild animals for strays (indirectly a product of overpopulation), the dangers of a lesser known disease, and the unattractiveness of testes on male cats and dogs ($M = 2.2$). Each argument was arranged into five paragraphs and was approximately one page in length. The introduction, as well as the closing, gave general information about spaying and neutering and were identical in both the strong and weak arguments. See Appendices D and E for complete text of the arguments.

Demographic survey and dependent measures

The demographic survey consisted of 10 questions designed to assess basic information about the participants including age, pet ownership, sex, and attitudes toward spay and neuter. See Appendix F for the full survey. The dependent measures consisted of five questions used to assess the willingness of the participants to wear a button, display a bumper sticker, sign a petition, and adopt a homeless pet. The measures for wearing a button, displaying a bumper sticker, signing a petition, and adopting a homeless pet were on a 5 point Likert type scale with 1

indicating low willingness to support and 5 indicating high willingness. Participants were also offered the opportunity to anonymously vote in a fictitious online petition to indicate whether or not they would support the proposed law. They were told that voting would be anonymous but that the votes would be counted on an off-site petition. A drop down menu appeared beneath the explanation of the fictitious petition, and participants were able to choose whether or not they would like to support the bill via the selections: 'Yes, I support the proposed law' or 'No, I do not support the proposed law.' Finally, participants were asked if they voted in order to validate the story that the petition was off-site and anonymous. See Appendix G for the dependent measures.

Attractiveness manipulation

Along with the persuasive message, participants were shown a picture of a woman who was ostensibly the author of the argument. She was identified as Melissa Barker, a former KSU student and current community member in favor of the proposed law. Participants viewed either a photo of an attractive young woman or a more average woman. The image was located using a Google search for the keyword: “attractive faces” and was attached to an article discussing new software that can transform images of average or less attractive faces into their most attractive form. The images were a demonstration of the software's capability, and the original picture was reported to be rated as less attractive than the transformed version. The photos were both of a woman in her 20s or early 30s with dark hair and eyes, wearing the same black sweater, and were presented at the top of the page before the persuasive message was viewed. See Appendix H for the photos.

Procedure

Participants clicked the link provided to enter the study, and viewed an informed consent page informing them that the purpose of the experiment was to assess certain attitudes toward an

animal welfare legislation and that participation was completely voluntary, and were told that by continuing with the experiment, they agreed that they had read and understood the informed consent (Appendix I). Participants first answered a series of demographic questions assessing their age, gender, year in school, political affiliation, whether or not they are a registered voter, number of members in the household of origin, number of pets in the household, what types of pets, whether they are spayed or neutered, and whether or not they file taxes independently (Appendix F). They next filled out the Empathy Toward Animals (Appendix A) scale before viewing the photos, in which they viewed pictures of dogs and cats with captions that were either neutral information or designed to elicit an emotional response (Appendix C). Participants then read a persuasive message which utilized either strong or weak arguments in favor of a law which would make it a finable offense to allow dogs and cats to have unplanned litters. These arguments were allegedly written by a woman who was either rated as highly attractive or less attractive. The images displayed women approximately the same age, with the same hair and eye color (Appendix H). These variables represented eight counterbalanced conditions.

Following the persuasive message, participants were asked a series of questions about their opinions about animal welfare, including the Animal Attitude Scale (Appendix B), how likely they would be to wear a button, put a bumper sticker on their car, or adopt a homeless pet (given the time and resources), and how likely they would be to sign a petition. Finally, they were given the opportunity to support the bill via an anonymous vote (Appendix G). In order to make the petition seem credible, participants were asked if they had voted (the petition vote was ostensibly anonymous), but this variable was not included in the analyses. Last, participants read a debriefing explaining the purpose of the experiment (Appendix J).

CHAPTER 3 - Results

Reliability measures

Because the Empathy Towards Animals scale was derived specifically for the purposes of this project, and was derived from Davis' (1983) human-based empathy scale, it was necessary to run reliability tests on the two subscales and the combined scale. The empathic concern (EC) subscale had a standardized Cronbach's alpha of .85; the perspective taking (PT) subscale had a standardized Cronbach's alpha of .87, and the overall ETA scale standardized Cronbach's alpha was .87. These are moderately high Cronbach's alpha scores and indicate that the Empathy Toward Animals scale is sufficiently reliable.

Hypotheses 1 & 2

Based on the first two hypotheses, we expected there would be an interaction between the emotional valence of the picture captions whereby participants viewing emotional captions would become more involved and thus rely more heavily on the strength of the argument (H1), where participants viewing the neutral captions would be more swayed by attractiveness as a peripheral cue (H2). Four 2 (emotional/neutral caption) x 2 (source: attractive/less attractive) x 2 (strong/weak argument) between subjects analyses of variance were performed, one for each DV. Overall, support for our DVs was modest, and the results suggest there were no floor or ceiling effects. See Tables 1, 2, and 3 for cell means and main effects.

Intention to support the petition

For the first DV, whether or not the participant chose to support the petition on a 1-5 scale with higher scores indicating more support, the attractiveness of the message writer was predictive of willingness to support the petition, with the highly attractive writer (M=3.63)

predicting more support overall than the less attractive writer ($M=3.25$), $F(1, 217) = 5.47$, $p = .020$, however, the means for the emotional caption ($M=3.54$) and the neutral caption ($M=3.34$) were not significant, $F(1, 221) = 1.64$, $p = .201$.

Willingness to wear a button

For the DV assessing likelihood of wearing a button to support the proposed law, we found that participants who viewed the attractive speaker ($M=2.82$) were more likely to say they would wear the button than those who viewed the less attractive speaker ($M=2.41$), $F(1, 221) = 6.13$, $p = .014$. Participants who viewed the emotional captions ($M=2.61$), were not more likely than those who viewed the neutral captions ($M=2.61$) to report being willing to wear a button, $F(1, 221) = .000$, $p = .990$.

Willingness to display a bumper sticker

We again found that participants who viewed the attractive photo were more likely to display a bumper sticker ($M=2.35$) than those who viewed the less attractive photo ($M=2.06$), $F(1, 221) = 3.781$, $p = .053$, and also found a three-way interaction between attractiveness, emotional valence of the caption, and argument, $F(1, 221) = 4.93$, $p = .027$. Probing the interaction revealed that for emotional captions, strong arguments given by the attractive speaker ($M=2.84$) produced more willingness to display a bumper sticker than the less attractive speaker ($M=1.72$), while the support was the same for attractive and less attractive speakers when the argument was weak (Figure 1a). However, for neutral captions, the weak argument produced the most willingness to display a bumper sticker, but that the effect was greatest for the attractive speaker ($M=2.57$), rather than the less attractive speaker ($M=2.32$) (Figure 1b). This interaction largely corresponded with our expected results. See Tables 1 and 2 for cell means.

Willingness to adopt a homeless pet

There were no significant main effects or interactions for willingness to adopt a homeless pet, given appropriate time and resources. Participants did not find the attractive writer ($M=3.84$) more compelling than the less attractive writer ($M=3.74$), $F(1, 221) = .387, p = .534$. Participants also didn't find the strong argument ($M=3.74$) more compelling than the weak argument ($M=3.83$), $F(1, 221) = .208, p = .649$. Likewise, the emotional captions ($M=3.82$) did not elicit more willingness than the neutral captions ($M=3.75$), $F(1, 221) = .212, p = .646$.

Decision to support the petition (actual vote)

Participants were led to believe that by choosing from the drop down menu provided in the survey that they would be able to anonymously vote in an online petition to either support the proposed law or disagree. A Chi-Square test was performed in order to assess the frequency of yes to no responses. We found that 53.8% of voters in the neutral caption condition voted to support the law, while a startling 70.4% of respondents voted to support the law in the emotional caption condition ($\chi^2(1) = 6.49, p = .011$). Of those in the strong argument condition, 53.5% voted to support the proposed law. Interestingly, 67.2% voted to support the law in the weak argument condition, but the difference was not significant ($\chi^2(1) = 3.33, p = .068$). 64.8% of respondents who viewed the more attractive picture voted to support the petition, while 59% who viewed the less attractive picture voted yes, but this was also not significant ($\chi^2(1) = .881, p = .368$). Of participants who owned pets, 61.2% voted in favor of the petition, but 64.7% of non-pet owners voted to support the petition ($\chi^2(1) = .145, p = .429$). Finally, of participants who either had their pet spayed/neutered, or who would spay/neuter their pet if they had one, 63.3% voted to support the petition, while 53.6% did not support the petition ($\chi^2(1) = .237, p = .157$). Overall, this finding supports the hypothesis that emotional involvement is an important

predictor of behavior, and that there were some differences based on argument strength, attractiveness, pet ownership, and agreement with spaying/neutering pets, but the latter were not significant. See Table 4 for frequencies.

Hypotheses 3 & 4

Multiple hierarchical regression techniques were used to test the third hypothesis, which states that empathy toward animals would predict willingness to support the bill, in a similar manner to that of the emotional involvement manipulation. In other words, as level of empathy increases, so should positive attitudes toward and willingness to support the proposed law. Hypothesis 4 states that dog and cat ownership should be predictive of willingness to help as assessed by the various dependent measures.

Intention to Support the Law

The demographic information, including whether or not the participants' pet was spayed or neutered, political information, age, sex, number of pets, and type of pet were entered in step 1, and the perspective taking, empathic concern, and animal attitude scale scores were entered in step two. The first model was not significant, but the addition of the empathy and attitudes scales added approximately 11% to the variance ($p < .001$). Women were more likely to support the petition than men (Beta = $-.207$, $p = .003$). For step 2, participants who scored higher on the empathic concern scale were more likely to support the petition than those with lower scores (Beta = $.194$, $p = .015$), and participants who scored higher on the perspective taking subscale were also more likely to report willingness to support the law (Beta = $.205$, $p = .004$).

Willingness to wear a button

A second hierarchical regression was performed, with the demographics in the first step and EC, PT, and AAS scales in the second step as before. The DV assessing the likelihood of the

participants wearing a button in support of the bill that model 1 accounted for approximately 1% of the variance ($p < .001$), and that the addition of model 2 added an additional 1% increase to the R Square ($p < .001$). Again women were more willing than men to wear the button, Beta = $-.372$, $p < .001$, however, in this instance the perspective taking sub scale of the ETA was predictive of the willingness to wear a button, with participants who engage in more perspective taking being more likely to wear the button, (Beta = $.234$, $p = .001$).

Willingness to display a bumper sticker

The likelihood of displaying a bumper sticker was assessed with the same type of hierarchical regression as in the previous analyses. Model 1 was non significant and contributed a negligible amount to explaining the variance, but model 2 added slightly more than 1.5% to the explained variance ($p < .001$). Again, women were more likely than men to display a bumper sticker (Beta = $-.220$, $p = .002$), and perspective taking was again a significant predictor (Beta = $.333$, $p < .001$).

Likelihood of adopting a homeless pet

Participants were asked, given the appropriate time and resources, how willing they would be to adopt a homeless pet. Demographic information was added in step 1 and EC, PT, and AAS were entered in step 2. Model 1 accounted for less than 1% of the variance ($p = .002$), and Model 2 accounted for slightly more than 1% ($p < .001$). Women reported being more likely to adopt a homeless pet (Beta = $-.186$, $p = .007$), and participants whose pets had been sterilized also reported being more likely to adopt a pet (Beta = $-.238$, $p = .024$), however, because of the way this variable was coded, it was examined in a separate regression, which will be discussed shortly. We also found that empathic concern significantly predicted willingness to desire a

homeless pet, with participants who scored higher on the EC scale being more likely to adopt a homeless pet (Beta = .413, $p < .001$).

The pattern of results is again quite fascinating in that different criterion variables were affected by quite different predictors. The implications of the results will be fully discussed below, but these results seem to suggest that for some types of attitudes and behaviors, participants put more weight on some predictors over others. For example, we found that empathic concern was more predictive of willingness to adopt a homeless pet, and given the emotional nature of a human-pet bond, this is unsurprising. But to engage in a more reasoned action (less emotional) like supporting a bill via a bumper sticker, perspective taking was more predictive.

Hypotheses 5 & 6

Hypotheses 5 and 6 state that attitudes toward animals and empathy toward animals will be positively correlated, and that intent to support the law will be predictive of actual support, respectively. For hypothesis 5, it was necessary to reverse the coding of the variables in order to put the AAS and ETA on the same scale so that lower scores implied less empathy and more negative attitudes toward animal welfare and higher scores indicated the reverse. As expected, we found a moderately high positive correlation ($r = .387$) between empathy toward animals and attitudes toward animals. In order to assess temporal precedence, a simple regression was performed to assess hypothesis 6, and we found that in accordance with expectations, intent was predictive of behavior (Beta = $-.418$, $p < .001$).

Additional Analyses

A series of four-way ANOVAs were performed in order to examine the relationship between sex and attractiveness, emotional valence of captions, and argument strength. We looked at the following DVs: willingness to wear a button, willingness to display a bumper sticker, likelihood of adopting a homeless pet, and likelihood of signing the petition. As expected, we found that generally women were more apt to support the law, and that those who viewed the attractive photos were most swayed, but there were no interactions between sex and the other predictors.

Likewise, because the questions about pet ownership and spaying and neutering one's pets were coded in such a way that made them difficult to interpret on the previous regression, these variables were recoded so that dog and cat owners of any kind, as well as those who also owned reptiles, fish, or rodents, were considered pet owners ($N = 194$), but those who owned only reptiles, fish, or rodents were considered non-owners ($N = 35$), and those who supported spaying and neutering regardless of whether or not they owned a pet ($N = 186$) were separated from those who owned pets but did not spay or neuter, or who did not own pets, but would not spay or neuter ($N = 43$). The same set of regressions as detailed above were re-run, but there were no differences in the predictive power of these two variables.

Figures and Tables

Figure 3.1 Willingness to display a bumper sticker after reading emotional captions for high and low attractiveness and strong and weak arguments.

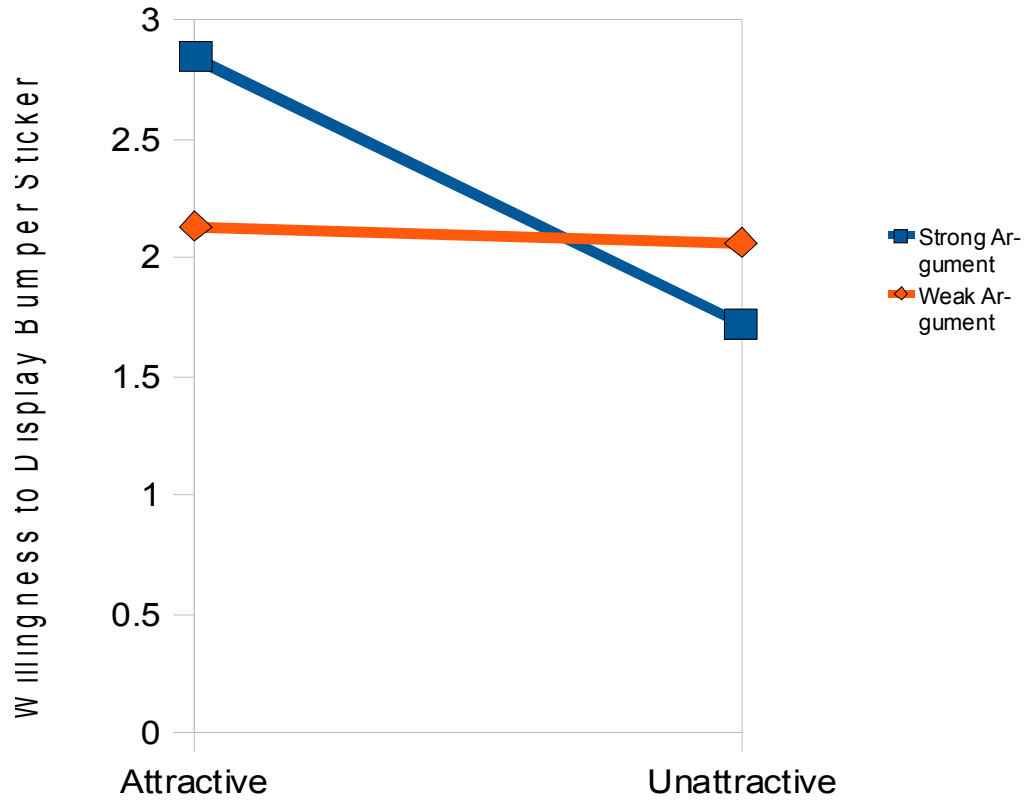


Figure 3.2 Willingness to display a bumper sticker after reading neutral captions for high and low attractiveness and strong and weak arguments.

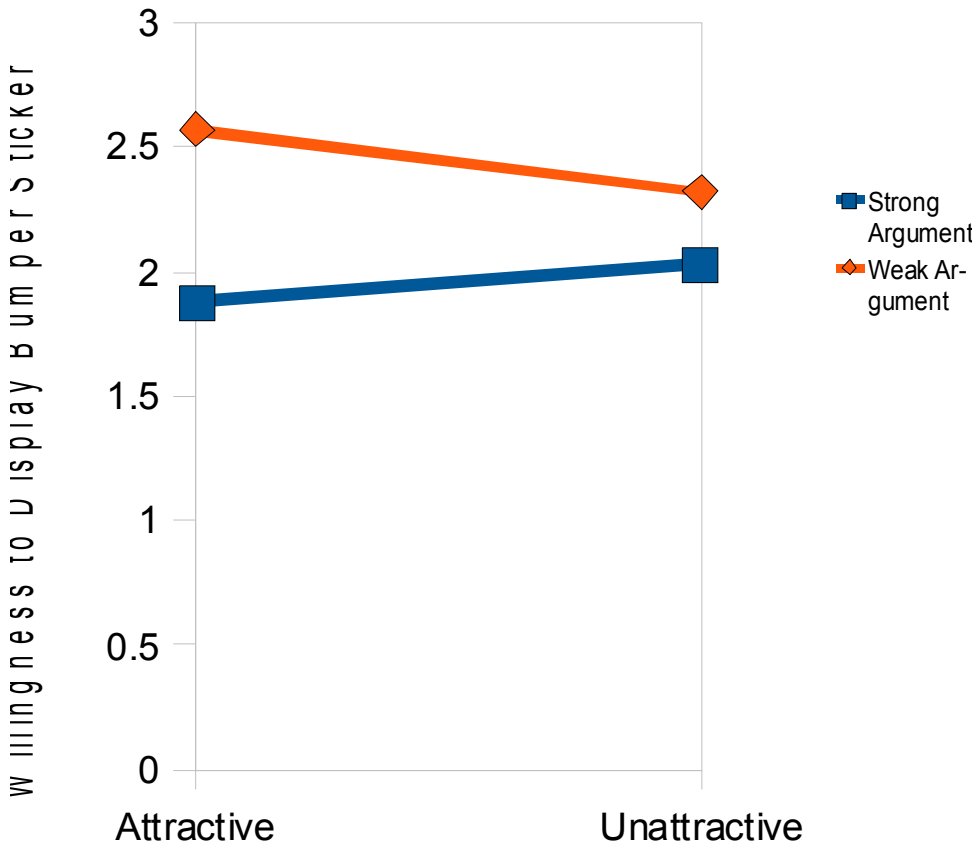


Table 3.1 Cell Means for Emotional and Neutral Captions and Strong and Weak Arguments on Willingness to Display a Bumper Sticker (Sticker), Willingness to Wear a Button (Button), Willingness to Adopt (Adopt), and Intent to Support the Petition (Intent).

DV*	Emotional Captions	Neutral Captions	Marginal Means
Sticker			
Strong	2.28	1.96	2.12
Weak	2.10	2.43	2.27
Button			
Strong	2.64	2.47	2.56
Weak	2.58	2.72	2.65
Adopt			
Strong	3.84	3.64	3.74
Weak	3.81	3.84	3.83
Intent			
Strong	3.62	3.15	3.39
Weak	3.47	3.50	3.49

*Scores on a 1-5 Likert scale, with 1 being unlikely to support and 5 being likely to support.

Table 3.2: Cell Means for Emotional and Neutral Captions and Attractive and Less Attractive Sources on Willingness to Display a Bumper Sticker (Sticker), Willingness to Wear a Button (Button), Willingness to Adopt (Adopt), and Intent to Support the Petition (Intent).

DV*	Attractive Source	Less Attractive Source	Marginal Means
Sticker			
Strong	2.36	1.88	2.12
Weak	2.34	2.20	2.27
Button			
Strong	2.84	2.28	2.56
Weak	2.80	2.51	2.66
Adopt			
Strong	3.84	3.64	3.74
Weak	3.84	3.81	3.83
Intent			
Strong	3.64	3.13	3.39
Weak	3.62	3.35	3.49

*Scores on a 1-5 Likert scale, with 1 being unlikely to support and 5 being likely to support.

Table 3.3: Main Effects For Emotional Valence, Attractiveness, and Argument Strength on Willingness to Display a Bumper Sticker (Sticker), Willingness to Wear a Button (Button), Willingness to Adopt (Adopt), and Intent to Support the Law (Intent).

DV+	Sticker	Button	Adopt	Intent
<hr/>				
Valence				
Emotional	2.18	2.61	3.82	3.54
Neutral	2.22	2.61	3.75	3.34
Attractiveness				
High	2.35*	2.82*	3.84	3.63*
Low	2.06*	2.41*	3.74	3.25*
Argument				
Strong	2.12	2.55	3.74	3.34
Weak	2.27	2.65	3.83	3.54

*Denotes a significant difference

+Scores on a 1-5 Likert scale, with 1 being unlikely to support and 5 being likely to support.

Table 3.4: Frequency of Yes and No Responses to Support the Petition for Emotional Valence, Argument Strength, Attractiveness, Pet Ownership, and Agreement with Spay/Neuter.

DV	% Yes Responses	% No Responses	Sig.
Valence			
Emotional	70.4	29.6	.011
Neutral	53.8	46.2	
Argument			
Strong	55.3	44.7	.068
Weak	67.2	32.8	
Attractiveness			
High	64.8	35.2	.368
Low	61.8	38.2	
Pet Ownership			
Owns	61.2	38.8	.429
Does Not Own	64.7	35.3	
Agree with Spay/Neuter			
Agrees	63.6	36.4	.157
Does Not Agree	53.6	46.4	

CHAPTER 4 - Discussion

The results obtained in this study were not entirely as expected across the board, but several findings conformed to predictions. Hypothesis 5 states that attitudes toward animals and empathy toward animals should be positively correlated so that more positive attitudes reflect more empathy. There are two reasons this significant correlation is meaningful. First, Signal and Taylor (2007) demonstrated that scores on Davis' Interpersonal Reactivity Instrument (1983) are positively correlated with Herzog, Betchart, and Pittman's Animal Attitude Scale (1991). Although this finding is interesting in and of itself, it fails to draw the link between empathy toward animals and attitudes toward animals, because it does not differentiate between empathy toward animals and humans. It is possible (even likely) that people who are more empathic toward humans will also be more empathic toward animals, but this study demonstrates the reliability of the animal-directed empathy scale, as well as substantiating the assertion that animal empathy and positive attitudes toward animals are related, but remain distinct constructs. The next step in this line of research might be to confirm the relationship between empathy toward animals and empathy toward humans. The second reason this correlation is important is because it suggests that empathy toward the target (animals, in this case) predicts message involvement. Bae (2008) found that people who watched the education entertainment program about corneal donation who were more emotionally impacted by the show also demonstrated greater willingness to fill out a cornea donor card. This study replicates this finding and also adds to it by obtaining this finding in an experimental study, suggesting that empathy does play a role in the willingness of a participant to act on what a persuasive communication persuades the person to do.

Likewise, the confirmation of hypothesis 6, which states that the intention to perform a behavior is predictive of the actual behavior is important to the validity of the study's findings. Ajzen (1991) found that the best predictor of a behavior is intent, and the regression results of our study replicate this assertion. Theoretically, this is important because much research in this area, due to limited funds or other resources, relies on measures that assess intent to perform a behavior, rather than the behavior itself, and in forming this link, we can confirm that these studies are measuring what we intend to measure, at least in part. Practically, this is important for this study in that it establishes that the results of this study can be adequately generalized.

In accordance with previous research, we expected that participants would hold more positive attitudes, and therefore be more likely to demonstrate these views by supporting the position of the topic when involvement was high and the arguments used were compelling (Petty & Cacioppo, 1983). Although this trend was replicated with one dependent variable (willingness to display a bumper sticker), we did not find this interaction with the other DVs (willingness to vote to support the petition and adopt a homeless animal). In fact, we found that depending on the measure, participants relied on different cues. We found that when it came to adopting an animal, whether or not the captions with the images were emotional was a significant predictor of willingness to adopt given the time and resources, and the same was true of whether the participant chose to support the petition, but that attractiveness was the most important predictor when participants were asked how likely they would be to wear a button.

This pattern of results is quite intriguing and a bit puzzling, but without further study we can only conjecture as to why we obtained this pattern. One possibility is that the level of commitment involved in the dependent measure influenced the type of processing utilized. For example, wearing a button or bumper sticker likely denotes less commitment than supporting a

petition for a law or adopting a pet for which the person will care for up to twenty years. Another possibility is how public the behavior is perceived to be. Adopting a pet and supporting a petition are of a more private nature, while displaying a button or bumper sticker are both things that reflect a particular view to others. It is also possible that different participants assign different levels of commitment, meaning, or involvement to the different dependent measures, so future research should take care to assess participants' attitudes not only toward the target but also toward whatever behavior for which the participant is requested to show support (or lack of support). However, the interaction found for the bumper sticker question reflected the pattern of results we were hoping to find for the other measures, and it is possible that something about the displaying of a bumper sticker is qualitatively different from the other measures, though it is not clear what the difference might be. Regardless, this pattern replicates previous findings, confirming that when participants are induced to be more involved, emotionally in this instance, they are more apt to rely on the strength of the argument as their cue of choice, and that the opposite pattern, wherein people rely on attractiveness when they are less involved, regardless of the strength of the argument.

The series of regression analyses testing empathy demonstrated a similar, and similarly interesting, motif. All of the regressions were run with demographics, including information about pet ownership, in the first step, and with the Empathy Toward Animals sub scales and Animal Attitude Scale in the second step. We found that sex of the participant as well as the number of pets the participants owned predicted more willingness to act in a positive way toward the proposed law. One possible reason is because women are more empathic toward animals according to the data, they experience greater message involvement and are generally processing the information more deeply. It is also possible that women are socialized to be more concerned

about the welfare of the helpless (children, animals) than men and are thus more involved. Further study is needed to illuminate this difference. We also found that, in some capacity, empathy toward animals was predictive of all the dependent measures. Empathic concern was positively related to the willingness to adopt a homeless pet, and the likelihood of signing a petition in support of the law. Perspective taking, the ability to cognitively understand an animal's point of view, was also predictive of likelihood of signing a petition, as well as willingness to wear a button or display a bumper sticker.

It was expected that higher empathic concern and perspective taking would predict intent to support the petition, and the results supported this hypothesis. The results from the Chi Square test suggest that emotion plays a role in increasing attention or desire to process information, and the results from the regression suggest that people who are more empathic and more able/willing to take another's perspective are more likely to report intentions to support the law. Together, these suggest that emotional involvement, both externally induced (by the captions) and internally induced (by one's own empathy/perspective taking), plays an important role in central processing. While EC and PT predicted intention to support a petition, being able (or inclined) to feel what an animal would feel influenced a person's willingness to commit to raising a pet or signing a petition, while being able (or inclined) to think through the animal's point of view inclined participants to wear a button or display a bumper sticker. Again, this difference might be because of the level of commitment or the private vs. public commitment of the behaviors, but it is clear that participants rely on different processes to determine varying behaviors, and that emotion is a key component to determining the type of processing used when reading a persuasive message. Nonetheless, more research is necessary to further understand why these differences exist, and what possible differences in processing elicit them.

Elaboration Likelihood Model, Involvement, and Empathy

Much of the previous research has looked at outcome involvement, which we posited might be different than involvement with the issue. The present study looked at several different variables as indicative of issue involvement, including the emotional content of the caption, pet ownership and attitudes toward spay and neuter, as well as trait empathy. Simply owning a pet did not make one more apt to support the proposed law, but we did find that the number of pets owned was a significant predictor in that the more pets the participant owned, the more likely the participant was to support the law in some way. Trait empathy toward animals, specifically the empathic concern component, also added significantly to the amount of variance that was explained in the willingness to adopt a pet and their intention to support the law. This suggests that there might be a very real benefit to 'playing to the crowd' or using targeted advertising to appeal to people with varying levels of empathy, involvement, and interest. Using emotional ploys (or other techniques to increase the involvement with the issue itself over simply the outcome) in advertising directed at certain audiences may have the effect of increasing one's willingness or ability to engage in central processing, and therefore increase the amount of attitude change possible, effectively influencing subsequent behaviors.

In regard to the Elaboration Likelihood Model, these results support the findings of earlier research. We found some effects suggesting the importance of involvement in the issue, as well as the importance of perceived attractiveness. According to the three-way interaction for willingness to display a bumper sticker (Figures 1a & 1b), participants relied more on strength of argument when they were highly involved, and attractiveness when they were less involved, however, the results do not quite mimic our expectations. In regard to the Elaboration Likelihood Model, we would expect that attractiveness would have no bearing on message processing when participants were engaged in central processing, but the interaction suggests that attractive

speakers paired with strong arguments were effective in the emotional caption condition. We would also expect that for the neutral caption condition, the attractive speaker would elicit the most change regardless of the argument strength, but we found that the weak argument was actually more persuasive. The pattern of the interaction between the emotional caption and the other variables (Fig 1a) might be explained by a general increase in attention to attractive people, but the only explanation for the second pattern (Fig 1b) is that the weak argument was not nearly weak enough, and therefore the pattern that we expected, wherein participants would rely solely on attractiveness despite a weak argument, was not found. The implications of this are quite interesting, because it suggests that attractive speakers paired with any somewhat compelling argument might be more effective than an argument paired with a less attractive speaker. The results do not exactly provide support for the model, but having less ridiculous arguments than one would usually find in this type of research may increase the face validity and make the results more generalizable.

The Chi-Square test revealed that the emotional valence of the image captions was predictive of likelihood of voting to support the law, with more participants in the emotional caption condition supporting the law than those in the neutral condition, which provides support for Bae's hypothesis that emotional involvement predicts future behavior, and also confirms that issue involvement can be induced by utilizing emotions. Unlike the interaction, this result does conform with expectations of the Elaboration Likelihood Model, and have spawned some fascinating new approaches to the issue of the relationship between empathy and involvement and provided new possibilities for how involvement might be measured. Further research will definitely be necessary to clarify the questions raised by the study.

Limitations and Implications

Further study is needed to replicate and examine some of these findings in greater depth. It is possible that some of these differences are artifactual, but if the differences are found to be replicable, there is great potential in the findings. One minor weakness was that the researcher neglected to control for how long the pictures and captions were viewed. Another possible weakness was the relative similarity of the levels of the attractiveness manipulation. Although the “attractive” face was more attractive than the other, the other face was not particularly hideous or displeasing. Stronger effects may have been found with more disparate images, but our findings suggested that this very modest difference was sufficient. Likewise, the “strong” and “weak” arguments were not so much subjectively strong and weak, but relatively so, because of how the arguments were created. In order to create them, arguments were presented to a pilot study of pet owners who rated them from strongest to weakest, and very few truly silly arguments made it through. Though it is difficult to think of silly arguments for such a serious issue, using a subjectively weaker weak argument would have likely yielded stronger effects, especially in the interactions. However, as we mentioned above, the weak argument the participants viewed was an argument that was probably more closely related to the type of message a person would generally encounter, and therefore provided face validity that would lend credibility to the research in a real-world setting, where an objectively weaker argument would have been a stronger test of the theory. Finally, one possibility for why we did not find stronger effects in the ANOVAs for the involvement manipulation, which were the emotional vs. neutral captions, was that the emotional captions may not have been emotional enough to elicit a large difference on the continuous DVs. However, we did find that the emotional valence of the captions made a difference in the actual vote (Table 4). Overall, the emotional and neutral captions were both pretty general, and although they gave the animals in the pictures names, did

not describe in great detail the animal's story. A more narrative approach to these captions might have yielded even stronger results.

Despite these weaknesses, there are far-reaching implications. First, this study not only replicates previous research by Petty & Cacioppo and their colleagues (1979, 1983, 1984, 1986), it extends their research by focusing on empathy and emotion as predictors of involvement. Likewise, it replicates aspects of Bae's (2008) study on cornea donation, but does so in an experimental way with more stringent control of message viewing and assessment. Next, although persuasion is a lively and booming area of research, very little research has been done in the area of animal welfare. Most previous research has focused on either issue involvement for a topic pertaining to the participant, such as breast cancer, cornea donation, or health/hygiene, or outcome involvement for another person. This type of research focuses expressly on an issue that is innately other focused. This different approach to the Elaboration Likelihood Model gives weight to the theory, suggesting that whatever the focus of the issue or outcome is one (self, other, animal), the underlying cognitive mechanisms remain the same.

Likewise, this type of research promises to be practically very important. This is an issue of public concern, not only for the welfare of the animals themselves, but because pet overpopulation taxes the resources of cities by overextending animal control workers, increases the spread of disease such as rabies and Rocky Mountain Spotted Fever (transmitted via ticks), and other diseases carried through animal excrement, and also increases the likelihood of disfiguring or deadly dog attacks by aggressive strays. Research will hopefully be applied in the future to design more effective animal welfare campaigns both for people who are motivated to process the message and those who are not, perhaps by suggesting to animal welfare organizations that even very mild emotional appeals can be useful, especially when paired with

attractive speakers and strong arguments. Last, this type of research can also be applied to other types of advertisements, those used to sell products, and particularly for other issues of social and health marketing, such as the spread of HIV/AIDS, environmental issues, or binge drinking/health behaviors.

Future Research and Conclusions

Future research on this topic should seek to more closely examine why we obtained the differences in the adoption/petition DVs and the bumper sticker/button DVs, perhaps focusing on the differences in public vs. private types of actions. It would also be prudent to continue exploring the relationship between empathy toward animals and empathy toward humans. Replication of the results of this study will be vital to establishing reliability and validity of the Empathy Toward Animals scale. Finally, although we found significant effects for the simple written message we used, future researchers may want to explore various mediums for the messages such as the education entertainment program utilized by Bae in order to use a message that more closely resembles actual advertisements. This research has the potential to provide valuable information theoretically and has the potential to help animals and the humans that seek to protect and care for them.

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Appendix A - Empathy Toward Animals (ETA) scale

Instructions: For each of the following statements, considering the scale ranging from 1 (Does Not Describe Me Very Well) to 5 (Describes Me Very Well). Please indicate the extent to which you agree or disagree with each statement by writing the appropriate number in the blank space to the left of each statement. Remember – there are no right or wrong answers – only those which best describe your feelings.

Does Not Describe Me Very Well			Describes Me Somewhat		Describes Me Very Well
1	2	3	4	5	

Empathic Concern scale:

- ___ 1. I often have tender, concerned feelings for animals who suffer misfortune.
- ___ 2. Sometimes I don't feel very sorry for animals in need.
- ___ 3. When I see an animal being taken advantage of, I feel kind of protective toward them.
- ___ 4. The misfortunes of animals do not usually disturb me a great deal.
- ___ 5. When I see an animal being treated unfairly, I sometimes don't feel very much pity for them.
- ___ 6. I am often quite touched by things I see happen to animals.
- ___ 7. I would describe myself as a pretty soft-hearted person.

Perspective Taking scale:

- ___ 8. Before scolding an animal, I try to imagine how I would feel if I were in their place.
- ___ 9. I sometimes try to understand my pets better by imagining how things look from their perspective.
- ___ 10. I sometimes find it difficult to see things from an animal's point of view.
- ___ 11. When I'm upset at my pet, I usually try to "put myself in his shoes" for a while.
- ___ 12. When I see an animal in need, I imagine what my life would be like if I were an animal in the same situation.

Appendix B - Animal Attitude Scale

From Herzog, Betchart, and Pittman, 1991: Listed below are 20 statements regarding the use of animals. Circle the letters than indicate the extent to which you agree or disagree with the statement.

SA = Strongly agree
A = Agree
U = Undecided
D = Disagree
SD = Strongly Disagree

1. It is morally wrong to hunt wild animals just for sport.
2. I do not think that there is anything wrong with using animals in medical research.
3. There should be extremely stiff penalties including jail sentences for people who participate in cock-fighting.
4. Wild animals, such as mink and raccoons, should not be trapped and their skins made into fur coats.
5. There is nothing morally wrong with hunting wild animals for food.
6. I think people who object to raising animals for meat are too sentimental.
7. Much of the scientific research done with animals is unnecessary and cruel.
8. I think it is perfectly acceptable for cattle and hogs to be raised for human consumption.
9. Basically, humans have the right to use animals as we see fit.
10. The slaughter of whales and dolphins should be immediately stopped even if it means some people will be put out of work.
11. I sometimes get upset when I see wild animals in cages at zoos.
12. In general, I think that human economic gain is more important than setting aside more land for wildlife.
13. Too much fuss is made over the welfare of animals these days when there are many human problems that need to be solved.
14. Breeding animals for their skins is a legitimate use of animals.

15. Some aspects of biology can only be learned through dissecting preserved animals such as cats.

16. Continued research with animals will be necessary if we are to ever conquer diseases such as cancer, heart disease, and AIDS.

17. It is unethical to breed purebred dogs for pets when millions of dogs are killed in animal shelters each year.

18. The production of inexpensive meat, eggs, and dairy products justifies maintaining animals under crowded conditions.

19. The use of animals such as rabbits for testing the safety of cosmetics and household products is unnecessary and should be stopped.

20. The use of animals in rodeos and circuses is cruel.

Appendix C - Photos and Captions Involvement Manipulation



Neutral: Mixed breed dogs like Sam make wonderful additions to any home. Sam's Siberian Husky side gives him an affinity for snow.

Emotional: Many accidental litters like Sam's end up in shelters or abandoned on streets. Sam spent most of his life alone outside in his owner's yard.



Neutral: Large breed dogs enjoy large amounts of exercise, but many dogs like Lily enjoy a good lie-out in the sun as much as a run through the park.

Emotional: Large, dark colored dogs like Lily are difficult for shelters to place in homes. Many people are scared of these gentle giants, and a disproportionate number are euthanized each year.



Neutral: Bull breed dogs like Daisy are tenacious chewers and champion sports such as weight pulling and dock jumping. These dogs need lots of affection, exercise, and patience to raise properly.

Emotional: Bull breed dogs like Daisy are one of the most overpopulated breeds in the country. Millions of Bull Terriers are euthanized in shelters because of irresponsible breeding.



Neutral: Many people find that they are allergic to cats like Cynthia, but some breeds like this hypoallergenic British Shorthair can be tolerated by allergy sufferers. Few breeds are truly hypoallergenic, but taking allergy tests before procuring a cat or kitten can help.

Emotional: Many people discover they are allergic to cats like Cynthia after purchasing a kitten, or develop the allergy later, causing them to abandon the animal. These abandoned pets can end up inadvertently having kittens if owners fail to spay and neuter.



Neutral: Many owners choose to allow their cats like Piper outside on leashes or in enclosed habitats so their cats can enjoy the great outdoors safely. Cats often enjoy hunting field mice and other small rodents.

Emotional: Many owners choose to allow their cats like Piper outside, but do not take the time to spay or neuter their animal. Many unwanted litters result from these outdoor excursions and can be euthanized in shelters.



Neutral: Kittens like Milo can be playful, social, and extremely energetic. It is important to teach proper behaviors like where to eliminate and where to scratch when they are young and easily taught.

Emotional: Kittens like Milo are purchased by the thousand each year, but once the playful, social kitten becomes a more reserved adult cat, they are often dumped on streets and in shelters.

Appendix D - Strong Argument

One of the most important issues in animal welfare is spaying and neutering pets. Spaying a female dog or cat entails removal of the ovaries and uterus. The procedure usually takes several hours, and the animal will recover fully in 2-5 days. Removing the reproductive organs of a female animal prevents her from getting pregnant and can prevent certain diseases, but does not otherwise affect the health of the animal. Neutering, or removing the testicles of a male dog, routinely takes a much shorter amount of time than a spay surgery, is less invasive, and recovery time is generally 1-2 days. The sterilization procedure should be done by a licensed veterinarian, and can be done on pups or kittens as early as 8 weeks of age. The Riley County, KS municipality proposes instituting a minor law on owners of unsterilized pets to encourage spaying and neutering, because of the benefits to both the citizens of Riley County, and the animals. The law would fine owners for unplanned litters.

There are many good reasons to spay or neuter your pet. Overpopulation is one of the most important reasons. In the U.S. each year, over six million unwanted cats and dogs will be euthanized. One dog can produce an average of eight puppies per litter, twice a year. Of those dogs, up to 75% will end up in shelters, many of which will be euthanized. Likewise, a female cat produces an average of five kittens per litter, and can litter up to three times a year. Those that are not euthanized may go on to produce more litters that will end up in shelters, increasing exponentially the number of homeless or euthanized animals. Spaying or neutering your pet can prevent unwanted litters and reduce the astounding number of animals euthanized each year.

Another good reason to spay or neuter your pets is disease prevention. Many pets suffer unnecessarily from diseases related to the reproductive organs. Because these organs are not vital to their overall health or functioning, there is no reason to neglect this simple procedure. Removal of the testicles in a male dog prevents later development of testicular cancer and prostate disease, which also requires removal of the testes and can be fatal. Spaying a female dog or cat prevents breast cancer, which is painful and may be difficult to detect. In dogs, breast cancer is fatal approximately 50% of the time, and in cats about 90%. Finally, spaying a female dog prevents development of pyometra, a condition in which the uterus becomes infected and full of pus. This condition is extremely painful for the dog, and can require a hysterectomy or result in death. All of these diseases are easily preventable by removing the reproductive organs.

Spaying dogs and cats has benefits to the owner as well as to the pet. Menstruation in cats and dogs is messy, often necessitating timely clean up and costly diapers. It can also attract males for miles around. Often times males will find a way to come inside to mate with the dog in heat, and can damage your property or injure other pets. They may also urinate in your house in order to mark their territory. Keeping a dog in heat outside might invite males to break through a fence so that your dog can escape. Female cats that are not spayed go into heat approximately every three weeks. During this time they will yowl, and urinate more frequently in order to attract a mate. This can lead to a sound nuisance and extra clean up, which can be easily prevented by fixing your pet.

Finally, for an owner who loves their pet, the biggest benefit is the quality and length of the animal's life. Dogs and cats that are spayed live an average of two to three years longer than animals that are not sterilized. Spaying and neutering can extend the life of your pet, increase the quality by preventing illness, save you time and aggravation, and prevent unwanted litters of cats and dogs. It is not costly, and in cases where payment cannot be made, many organizations like the Humane Society will subsidize costs, performing the procedure for \$20 or less! By instituting this law, the officials of Riley County believe that owners will be encouraged to spay and neuter and thus reduce the problems associated with dumping of behaviorally problematic animals, overpopulation, as well as improve the lives of many animals. There are many reasons why spaying and neutering is important, and this law will likely increase the number of pets that are sterilized by over 50%, thereby reducing animal suffering and the cost of running city shelters.

Appendix E - Weak Argument

One of the most important issues in animal welfare is spaying and neutering pets. Spaying a female dog or cat entails removal of the ovaries and uterus. The procedure usually takes several hours, and the animal will recover fully in 2-5 days. Removing the reproductive organs of a female animal prevents her from getting pregnant and can prevent certain diseases, but does not otherwise affect the health of the animal. Neutering, or removing the testicles of a male dog, routinely takes a much shorter amount of time than a spay surgery, is less invasive, and recovery time is generally 1-2 days. The sterilization procedure should be done by a licensed veterinarian, and can be done on pups or kittens as early as 8 weeks of age. The Riley County, KS municipality proposes instituting a minor law on owners of unsterilized pets to encourage spaying and neutering, because of the benefits to both the citizens of Riley County, and the animals. The law would fine owners for unplanned litters.

There are many good reasons to spay or neuter your pet. Spaying and neutering pets reduces overpopulation, which would reduce the amount of disease spread among strays. Stray cats, dumped or neglected because of overpopulation, can contract feline HIV (FIV), which suppresses the immune system. Cats with FIV can contract diseases more easily, and require separation from FIV-negative cats in the home. Their lives can be shortened and the quality of life can be diminished. Spaying and neutering also reduces roaming of cats and dogs, and prevents males from getting into territorial fights or fighting over females in heat.

Many pet owners fret over behavioral issues that dogs and cats face, such as aggression and mounting. Dogs that are neutered are less aggressive than their unneutered counterparts. They tend to get in fewer fights and be more friendly toward strangers. However, even though neutered males are less aggressive, they will still be attentive to their family and protective when necessary. Another unwanted behavior that can be curbed by neutering your male cat or dog is mounting. Unneutered male dogs and cats will often mount furniture or visitors to attempt to either mate or express dominance, but neutering often decreases or eliminates this behavior, with some training.

Stray dogs who live on the streets due to overpopulation also face a variety of other problems. Stray cats can be seriously injured by other roaming dogs, wild animals in rural settings, such as coyotes or badgers, and can be maimed or killed by traffic. Another serious problem for dogs that is a result of overpopulation is dog fighting. Stray dogs can be picked up by dog fighters and used as bait. Dog fighters will often pick up strays and put them in the ring with new fighters to hone their killing skills, or with champions to practice. These dogs can suffer terrible injuries, or die. The repercussions of overpopulation can easily be avoided by spaying and neutering pets to reduce the number of unwanted litters.

Finally, there are benefits to the owners of spayed and neutered animals. Male cats and dogs are more aesthetic after removal of testicles. Testicles can be injured accidentally during play and can look less attractive to some, and neutering a male dog or cat will prevent accidents involving the testes. Spaying and neutering is not costly, and in cases where payment cannot be made, many organizations like the Humane Society will subsidize costs, performing the procedure for \$20 or less! By instituting this law, the officials of Riley County believe that owners will be encouraged to spay and neuter and thus reduce the problems associated with dumping of behaviorally problematic animals, overpopulation, as well as improve the lives of many animals. There are many reasons why spaying and neutering is important, and this law will likely increase the number of pets that are sterilized by over 50%, thereby reducing animal suffering and the cost of running city shelters.

Appendix F - Demographic Survey

Please indicate your responses to the following questions by circling your choice or filling in the blank.

What is your year in school?

Freshmen Sophomore Junior Senior

Age: _____

Gender: Male Female

Do you file taxes independently? Y N

Political affiliation: Democrat Republican Independent

Did you vote in the last local or presidential election? Y N

Do you own a pet? Y N

How many pets? _____

If so, what kind? (circle all that apply):

Cat Dog Rabbit Rat or other rodent Fish Reptile Other

If you or your family own a cat or dog, have you had him or her neutered or spayed?

Y N

Appendix G - Dependent Measures and Post-test Survey

1 - Very unlikely | 2 – Somewhat unlikely | 3 – Neutral | 4 – Somewhat likely | 5 – Very likely

- 1.) How likely would you be to wear a button in support of the proposed law?
- 2.) How likely would you be to put a bumper sticker on your car in support of the proposed law?
- 3.) How likely are you, given the appropriate space and resources, to foster or adopt a homeless animal?
- 4.) How likely are you to sign an anonymous online petition in support of the proposed law?

In conjunction with a local petitioning group, the research group would like to present all participants with the opportunity to support the petition. If you are interested in supporting the proposed law, there is an online petition where you can anonymously cast your vote. We have set up a link directly from this site so that by selecting your choice on the drop down menu (below) you can cast your vote to support the proposed law. Please only choose your selection from the drop down menu once to avoid sending numerous votes to the petition website.

Recall that the law will fine pet owners whose dogs or cats produce litters without prior registration in order to encourage spaying and neutering.

Do you support the proposed legislation to fine pet owners whose pets produce litters without prior registration? Please make your selection below.

Yes, I support the proposed law.

No, I do not support the proposed law.

Did you vote to support the proposed legislation?

Yes No

Appendix H - Attractiveness Manipulation

Low attractive (left) and high attractive (right) photographs, identified as Melissa Barker, former KSU student and current community member



Appendix I - Informed Consent

Thank you for agreeing to participate in this study. The purpose of this study is to investigate attitudes toward legislation about animals. In this study you will be asked to fill out a series of demographic and opinion questionnaires, view pictures, and read passages related to the topic. The study should last approximately 30 minutes.

Some participants may find the topic upsetting, so it is important to note that participation is completely voluntary. If at any time you are uncomfortable with the experiment, you are free to withdraw at any time with no consequences or penalties.

All information that is collected in this experiment will be kept anonymous in order to protect confidentiality. If you have any questions or concerns about this study, you may contact the researcher using the contact information listed below.

Gwendolen Powell: gpowell1@ksu.edu

By continuing with this survey, you agree that you have read and understand the information stated above and consent to participate.

Appendix J - Debriefing

The purpose of this study was to assess how emotional messages, argument strength, and attractiveness influences message processing and attitude change in relation to spay and neuter advertising campaigns. We hope that this research will provide ways to more effectively garner interest in important issues such as animal overpopulation and more.

It is important to note that the emotion manipulation was necessary for the study. The research examined how emotional information effects how a person perceives strong and weak arguments written by attractive or less attractive people. If you found the study was unduly distressing, please contact the researchers to discuss the experiment with you or arrange contact with student counseling services.