2011

Attitude change regarding animal abuse in adults the effect of education and visual aids

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ATTITUDE CHANGE REGARDING ANIMAL ABUSE IN ADULTS: THE EFFECT OF EDUCATION AND VISUAL AIDS

by

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A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Psychology
in the College of Sciences
and in The Burnett Honors College
at the University of Central Florida
Orlando, Florida

Fall Term 2011

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Abstract

Companion animals now serve as more than tools for human use, they have become family. Many individuals now spend increasingly more money on animals than in years past and are more likely to acknowledge the animal as a family member. With this change in roles many humans have become more empathetic to animal cruelty. Studies have been conducted to examine various aspects of animal cruelty and how it relates to humans. However, few have examined attitude change regarding animal abuse. If attitudes can be positively changed in adults, these individuals are in a position to pass the information onto their children. Adults are also currently in the position to make changes in legislature regarding humane treatment of animals.

An experiment was conducted which examined adults' attitudes toward animal abuse and whether they can be changed. Text information was examined as a variable for attitude change. Additionally visual aids in the form of photographs were used in conjunction with and separate from the text information as variables. Two types of photographs were used: images of companion animals by themselves or the same animals accompanied by adult humans.

The text information used was adapted from an ASPCA presentation obtained, with permission, from the Orange County ASPCA. The power point presentation included information on the connection between animal violence and violence toward humans, how to help stop animal cruelty and how to report it. Six conditions were created using the three variables.

It was found that pictures have an immediate effect on attitude change and information affects individuals in certain measures but not others. On all measures, images had more of an effect than information alone. Only when the text was accompanied by a picture, did it produce a significant change.

Attitudes regarding the treatment of animals saw an immediate increase in both conditions in which images of humans and animals were present. Additionally, images of animals alone immediately increased attitudes regarding treatment of animals. This difference does not appear to increase further over time.

Images of animals alone appear to aid in immediately altering individuals' sense of continuity with animals. The attitude that animals and humans share some commonalities and exist in relation to each other could assist in adoption campaigns by allowing the potential owners to place themselves with the animals they are adopting. However, over time information combined with images of humans and animals significantly increase this sense of commonality.

The applications for the results depend on what type of attitude one desires to change and how soon the change has to occur. The present research reveals that images appear to affect attitude change regarding companion animals and the way they are treated more than text information.

Dedication

For my parents, Beth and Eric; you have always and continue to encourage and support me in everything I decide to do. You believed in me when I didn't believe in myself and always gave me guidance when I needed it most.

For Anthony; you never doubted me and always reminded me of what I can accomplish. You kept me going when I didn't think I could and continued to remind me to be confident in myself and my abilities.

Acknowledgements

Thank you to all of my committee members. This project would not be what it is without your experience and wisdom. Special thanks to my committee chair Dr Chin. I am very grateful you agreed to be my committee chair and helped turn rough ideas into a complete research project. Also, thank you to my other committee member Dr Sims. Your advice evolved my small project into a truly interesting and sound experiment. Thank you to my out of department committee member Dr. Jones, who was gracious enough to join my committee and advise me on possible applications for this research. I could not have done it without any of you.

Thank you to the Orange County ASPCA for allowing me to use your animal cruelty educational presentation. Without your generosity and support this study would not be possible.

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Introduction

Animals have long been found in homes around the world. Humans first hunted animals and then found different uses for animals as workers and as companions. Animals have been bread for food and domesticated for purposes suiting their owner's needs and desires. They have recently moved into a nearly solely companion role (Taylor and Signal, 2005). With the ever growing number of animal breeds and people who want to own them, comes a growing popularity for companion animals in the home.

Over half of all homes today contain at least one pet; more homes in the United States today contain pets than children (Albert and Bulcroft, 1988). In recent years, companion animals have even grown to be recognized by most caregivers as members of the family; acting as companions for family members (Albert and Bulcroft, 1988; McPhedran, 2009). Humans view companion animals as important to the family; partly because pets have the capacity to give and receive affection unconditionally. This creates a bond between animal and owner. Because of this connection, humans have the capacity for great love towards these animals but also great cruelty (Beatson et al., 2009). The human-animal relationship is complex, and negative attitudes toward companion animal welfare can potentially lead to animal abuse. Research indicates many violent offenders first abuse animals or use violence toward pets as a way to harm other humans mentally (Wright and Hensley, 2003; McPhendran, 2009).

There are increasing reports from battered women's shelters across the nation of violence toward women and children also being directed towards companion animals in the home

(DeGrue and DiLillio, 2009; McPhedran 2009). Many times the abuser is a male partner who seeks to establish and maintain dominance through forced submission and violence. This intended dominance is turned into violence directed at the animal; to create a threat of abuse for the human. For example, many women report they could not leave an abusive home because her partner threatened to hurt the pet if she attempted to leave (McPhedran, 2009). Because of these reports, studies have been conducted examining possible links between human violence and animal abuse.

Today, many researchers and animal welfare organizations work to discover more of human-animal interactions. Studies are conducted on humans' relationships with animals and the consequences of animal abuse. However, research on attitude change toward animal abuse has not been fully investigated. Is it possible to change the opinion people hold toward animal abuse and can educational material assist the change? Also, does the mode in which the intervention is presented have an effect on whether participants' attitudes can change?

Animal abuse is not a new phenomenon, but is a growing concern in psychological and social fields. In recent years, a growing amount of research has been dedicated to exposing what causes animal abuse and the effect it has on the rest of society. Studies have been conducted on the connection between animal abuse and family violence, child abuse, violence toward humans, and even bullying (McPhedran 2009; Henry 2009). Though an increasing amount of research has been designated to the study of animal cruelty, few have looked at changing attitudes toward animal abuse. While research has been conducted on this type of attitude change, no one has examined changing the opinions of adults. Thus far, programs focusing on humane education have been geared toward younger children. The goal of these programs is to facilitate better

treatment of people by teaching how to treat animals (Thompson and Gullone 2003). It is still assumed in most literature that humane treatment of animals will translate to a decrease in violent behaviors toward humans. These programs hope to instill empathy while children are young in hopes that they will grow up with decreased aggression towards people.

Animal Violence

Serpell (2004) discussed factors affecting people's attitudes toward animal welfare. He suggests humans regard animals in two ways; based on the animals' affect (emotional benefit to people) and their utility (perception of working value). Though it seems that animals can be valuable to humans, the emotions they evoke in humans contribute much more to whether they are treated well. Serpell (2004) goes on to suggest that individual characteristics of the animal contribute to how they are perceived. Humans respond best to animals that are either like humans in some way, young and baby-like in appearance, or if they are rare or threatened in some way. Humans associate more admirable qualities to things they know; which is why humans have much stronger opinions regarding the welfare of dogs and cats over other types of animals (Sims, 2007; Serpell, 2004).

McPhedran (2009) discusses the link between animal abuse and family violence. She distinguishes between intimate partner violence and child abuse as most commonly co-occurring with animal cruelty. This is because the abuser uses the human-animal connection as a tool to intimidate and control others within the family. She points out that animal abuse is categorized as a symptom of conduct disorder by the American Psychiatric Association (APA). APA has recognized that abuse towards animals in children can be a sign of much greater problems.

Cruelty to animals is even recognized as one of the earliest symptoms of conduct disorder (McPhedran, 2009).

Of reported animal abuse cases the most common victims are dogs with cats coming in second (Frasch, 2000). This is partly due to availability and partly because humans have such a strong connection with these companion animals. There are similarities in the type of offender for these crimes as well. The Society for the Prevention of Cruelty to Animal (SPCA) of Central Florida describes animal abusers as typically being young adults or adolescents. Frasch (2000) found males, teenagers and adults under the age of 30, make up over 75% of alleged abusers in the sample population, with adults under the age of 30 being the majority. It makes the likelihood high other young adults will witness or hear of an act of cruelty from a friend. Because of this trend, now may be a critical time to educate individuals on the effects of animal abuse and how to report it. Young adults can then not only recognize abuse and report it; they can pass on this knowledge to their own children.

Humane Education

Educational material regarding animal abuse focuses on the connection between animal cruelty and violence toward humans. Similar studies have been conducted with children ranging in age from 3rd grade through seniors in high school (Dilmac et al. 2007, Thompson and Gullone, 2007; Faver, 2010). In these programs the intervention uses animal cruelty education as a means to teach humane behaviors toward all living things, including other humans. Researchers have hypothesized that teaching humane interactions and empathy toward animals will naturally translate to decreased cruelty and aggression towards humans. With a growing number of reports

of children witnessing animal cruelty or conducting the abuse themselves, many are searching for a way to end the cycle of violence.

Thompson and Gullone (2007) conducted a study on humane education's effect on children's empathy and prosocial behavior. They argue that humane education is essential in children because they are not being taught about empathy for others in today's individualistic society. Little work has been conducted investigating the relation between animal abuse as children and violence toward humans as adults. However, it has been assumed in this and other similar studies that the violence can be stopped before it starts with education.

Many studies and programs on humane education also assume that the intervention and visual aids go hand-in-hand in the prevention of animal cruelty. The vast majority of information provided by animal welfare organizations depicts various animals in conjunction with the information they want people to know. Are photographs necessary for change, or could they be used as an intervention by themselves?

What if information was not necessary to create a change in attitudes regarding animals? Perhaps pictures alone could cause an increase in empathy towards animals or a stronger desire to protect or own an animal. People would not have to stop and read an information booklet or listen to a presentation if pictures alone created a desired effect. It is possible that campaigns from animal shelters and humane groups could reach a broader audience and create more of a change if it could be found that photographs were as effective as educational information in changing attitudes towards companion animals. As of yet no study found has attempted to answer these questions.

Due to the lack of research on these assumptions it is unclear if children exposed to humane education will grow into more empathetic adults. Research geared towards educating young adults could enhance research, psychological, and educational literature surrounding humane education by offering a more immediate solution to the problem of animal abuse. Adults are in the position to make changes in our society now. Therefore, if education can affect individual adults' attitudes toward animal cruelty, these individuals will be in a better position to take action preventing abuse to reporting abuse to the proper authorities.

Attitude Change

Childers and Houston (1984) explored the use of pictures in facilitating memory of a given product. They discuss that visual aids are mnemonic devices that enhances learning. Pictures have even shown to be retained longer than words used in persuasive messages. This concept is known as the picture superiority effect.

In addition to enhancing memory of a given concept, the use of pictures in which both animals and humans are depicted together offer a Paired-Associates Learning (PAL) context (Bower, 1972). PAL occurs when two objects (human and animal) are better remembered when paired together than separately. It would seem then that paired associates of companion animal and owner could facilitate better memory and reflection of the intervention material increasing attitude change.

An important factor in attitude change is how the incoming message is comprehended. One method that has proved successful in facilitating information comprehension and retention is initiating a way for the individual to openly accept and process new information. There are many ways to facilitate the learning of new material. One method that has been examined is the

use of pictures. Using photos that show an animal alone or with humans around it has the logical possibility of causing a difference in attitude change. The ability to view an image of a companion animal could allow individuals to picture the animal and the abuse. Further, the addition of a human to the picture could imply that that the animal is owned. The ability to picture an animal as owned affects the way people view abuse towards that animal. It is possible that humans react differently to an animal that they know is owned as opposed to a stray. This could facilitate retention by aiding in comprehension and retention of the incoming information based on one's own past experiences. The goal is to allow for more thoughts relating the concept of animal cruelty to the victims of the abuse, both animal and human.

Inferring that the animal in the picture is owned by the people in the picture could facilitate attitude change because the participant can empathize with the individual in the photo. It is possible that individuals could take a harsher stance on abuse because the abused animal is owned as opposed to a stray.

On the other hand, viewing a picture of an animal by itself could allow the reader to picture himself as an owner of that animal. This could create a personal reason for changing one's attitude towards animal abuse. Creating the connection to an animal, by imagining it as one's own, may cause an individual to recall the animal while answering questions on animal abuse may create cognitive dissonance. This uneasiness is created by the confliction between the positive thought of the animal and the negative one of the animal coming to harm. A way to rectify this dissonance is to change the views toward animal abuse.

While researchers increasingly examine the underlying causes and connections of animal abuse, few studies have been conducted to examine if attitudes toward this type of cruelty can be

changed through education. Of the studies that have looked at educational intervention of this type, none have conducted research on education of animal abuse with adults. So far, this type of research has been conducted with children of various ages. The current study sought to explore this, and expound upon past research. At this time there have been no studies conducted to examine if pictures could act as an intervention alone.

The present study explores if adults' attitudes regarding companion animal cruelty can be changed to reflect an increase in empathy for the animal and a harsher stance on animal abuse. The use of a visual aid such as pictures of animals and their owners, increases the attitude change was also examined. It is possible that viewing pictures of animals in conjunction with educational material on animals will facilitate retention of the message and overall attitude change. This is caused by the visual reminder of what is being injured and that this animal has a home. It is also possible the pictures remind participants of past experiences with animals, causing unease when having to think of a beloved animal in the context of animal cruelty. This could help facilitate change because the participant will want to rectify this dissonance.

What is considered abuse often differs between individuals. For the purpose of this study, animal abuse was defined as an act of physical harm to an animal (HSUS, 2011). Some research has treated the terms 'abuse' and 'cruelty' as separate terms while the majority use the same definition. For the purposes of this research, the terms were used interchangeably. Researchers and animal welfare organizations have also made the distinction between animal abuse and neglect. Neglect can be defined as the lack of providing care for a pet. This includes the neglect of providing adequate food, water, shelter, or veterinary care (HSUS, 2011). This

study did not discuss neglect in the intervention material; therefore neglect was not included in further discussions.

Four hypotheses were tested during the course of this study:

H1: Educational material will increase individuals' negative attitudes toward animal abuse. After viewing the material, participants will treat animal abuse more harshly than those who are not exposed to the intervention.

H2: The use of pictures in addition to the educational material will facilitate a greater change than when viewing educational information alone.

H3: The use of pictures that contain both animal and owner will cause the greatest increase of negative attitudes regarding animal abuse.

H4: Pictures, without the presence of the information, can act as an intervention alone. The viewing of pictures alone can facilitate an increase in negative attitudes.

Methods

Participants

A total of 232 participants were recruited. Participants were University of Central Florida students, recruited through the university's research participation website. Participants were at least 18 years of age and between the ages of 18 and 40, with the majority being under 25. Participants were told the study was examining memory of animal abuse material. This helped to ensure participants answered questions truthfully, and that they took the time to view the intervention material thoroughly. Both males and females were recruited to measure gender differences in attitudes. The students participated for Sona credit points towards their respective psychology class.

Participants were asked to log into part two of the study two weeks after they completed part one. In part two 58 participants returned to complete the study. Only individuals who had participated in part one of the study were given the invitation code to access part two.

Materials

All participants completed the two part study online. Participants were asked for demographic information. Four surveys were also used to measure participants' attitudes toward animals and animal abuse.

The first measure used was the Animal-Human Continuity Scale (AHCS). This 12 questions scale was designed by Templer et al. (2006) to measure how similar an individual views animals and humans on a continuum of very similar to completely different. The 7-point

Likert scale asks participants to rate statements such as; "People evolved from lower animals" and "Humans have a soul but animals do not."

The Pet Attitudes Scale (PAS) was used to examine attitudes toward pets. The 18-item survey contained statements such as "I frequently talk to my pet" and "I hate animals." This survey was used to measure how people feel about companion animals, how much they enjoy, or dislike owning companion animals.

The Attitudes Toward the Treatment of Animals Scale (ATTAS) examined how sensitive participants were to the mistreatment of animals. The 26 questions survey asked participants to rate how bothered they were by various scenarios on a 5-point likert scale. It contained statements such as "How much would it bother you to think about someone intentionally hurting a companion animal (pet dog, cat, and rabbit) other than for training?"

A final scale was developed from questions created by the Orlando American Society for the Prevention of Cruelty to Animals (ASPCA) for a presentation used to educate high school student of animal abuse. The seven question survey uses a 7-point Likert scale to assess participants' attitudes toward animal abusers. It asks participants to rate how strongly they agree to statements such as, "Do you think animal cruelty could lead to harmful behavior toward people?"

Participants also viewed one of six versions of educational material. The material was obtained, with permission directly from the Orlando ASPCA. The presentation was adapted from a power point presentation used to educate high school students on the facts of animal abuse, the connection between abuse and violence toward people, and how to prevent and report abuse. All presentations were presented using a white background with black text.

The photographs used were taken of adults and their adult pets. The photographs were then edited to remove any background so only the subject remained on a white background. The pictures were controlled for size by keeping the size of the head of the animal consistent across all pictures. The pictures of the animal and person were also controlled for size on the same basis. Photographs were separated into two groups: those with adults and animals, and those with only the animal. All photographs were placed in the upper right-hand corner of each slide regardless of whether text accompanied the photo or not. The same surveys were used in the same order during the pretest and posttest.

The first condition consisted of text information only. The second condition was text information with picture of a companion animal alone. A third condition was text information with pictures of companion animals with the owner. The pictures were shown without the text information in the fourth and fifth conditions. The sixth condition was a control in which participants were directed to the next section.

To help ensure participants viewed the material completely, a small test was given on the intervention material. This multiple choice test was also intended to continue giving participants the impression they were tested on memory of the material and not attitude change. The test consisted of questions taken from the intervention material. Participants were asked to answer the questions to the best of their ability. The test was given at the end of part one and part two. This helped to ensure the information in the questions did not influence participants' responses on the surveys.

A math test was used as a distractor between the intervention material and the posttest. It consisted of ten simple math equations that required the participant to add, subtract, multiply, or divide two numbers and type in the answer.

Procedure

Participants were told that they would be participating in a memory study of animal abuse material. This small deception helped to ensure participants would answer the questionnaires truthfully and read the intervention material thoroughly. To attempt to ensure there were equal numbers of male and female participants, two identical studies were created; one for men and one for women. When a sufficient number of female participants had signed up for the study, the female version was turned off so no more females could sign up, but males still could.

After viewing the informed consent, participants were directed to the demographics questionnaire and the four surveys and asked to answer each question as honestly as possible. After completing the surveys, participants were randomly assigned to one of the six conditions in which they viewed the slide presentation. Participants were told to view each page carefully and completely. Participants were able to move at their own pace and press a key to continue to the next slide.

Upon completion of the final slide, all participants were directed to the math test. All participants then completed the post-test. It consisted of the four surveys, presented in the same order, and the test on the intervention materials at the end. After the post-test participants were thanked for their participation and told to check their email account for an invitation to take part two in two weeks.

Two weeks after the participants completed part one, they were sent an email inviting them to participate in part two using a log in password. In part two participants completed the same surveys they completed in part one. They also completed the same test on the intervention material. Upon completion of the test they were directed to a debriefing form explaining the true purpose of the study and thanking them for their participation.

Results

Comparing Part One Pre-Test to the Post-Test

To analyze the data the difference scores were first found for each survey by subtracting the total score of each dependent variable from the post-test to the pre-test, the part two totals to the post-test and the part two totals to the pre-test. The post test was subtracted from the pre-test. Three different scores for each of the four surveys were used to examine the data. A one-way between groups ANOVA compared the difference score to the condition the participant was in. The conditions acted as an independent variable and the scores on each survey was the dependent variable.

When examining the difference scores for the AHCS no significant change was found in the between groups comparison of the AHCS scale separated by the six conditions (F (5,225) =1.89, *n.s.*). The LSD Post Hoc found that scores of participants in the animal picture only condition (M=5.27, SD= 16.43) were significantly higher than after viewing the material which had information and picture of humans with the animal (M= .46, SD= 6.77) (F (5,225) =4.81, p< .05). Participants also had higher scores than those who viewed just information on animal abuse (M=.32, SD=6.69) (F (5,225) =4.95, p<.05). There was a highly significant difference between those who viewed only pictures of animals and pictures of humans and animals (M= -.80, SD=12.57) (F (5,225) =6.08, p<.01) as well as the control (M= -.62, SD=6.59) (F (5,225) =5.89, p=.01).

When viewing the difference scores on the ATTAS, there was no significant change between groups (F (5,224) =.62, *n.s.*). The Post-Hoc also revealed no significant differences in comparisons of the scores based on condition placement.

No significant between groups difference were found on scores in the PAS (F (5,225) =1.83, *n.s.*) When comparing groups using the LSD Post Hoc it was found that participants who were in the Human-Animal picture with information condition (M=1.97, SD=5.44) scored significantly higher on the PAS than those who were in the animal picture with information condition (M= -1.76, SD=7.20) (F (5,225) =3.74, p<.05). Participants in this condition also scored significantly higher than the control condition (M= -2.43, SD=13.23) (F (5,225) = 4.40, p<.05).

The scores from the ASPCA questionnaire was not significantly different in the ANOVA between groups comparison (F (5,225) =.33, *n.s.*). The LSD Post Hoc revealed no significant differences among the mean change scores for each condition.

To asses differences in the amount of change within each condition a One Sample T-Test was used to analyze the change scores within each condition from a no difference score of zero. When examining the AHCS, it was found, that the animal only picture condition (M=5.27, SD=16.43) was marginally significant (t (36) =1.95, p<.10).

The ATTAS was analyzed using a One Sample T-Test. The human-animal picture (M=4.63, SD=7.96) condition was significantly higher than the no difference score of zero (t (40) =3.59, p<.01). The animal only picture condition (M=2.42, SD=5.58) also scored significantly higher than zero (t (35) =2.60, p<.05). Additionally, the human-animal information condition (M=2.33, SD=7.25) was marginally significant (t (38) =2.01, p<.10).

Using a One Sample T-Test the PAS difference scores were analyzed. It was found that the human-animal information condition (M=1.97, SD=5.44) was significantly higher than the no difference score of zero (t (38) =2.27, p<.05). The ASPCA survey was also analyzed, and no significant differences were found.

Comparing the Part One Pre-Test to the Part Two Post-Test

When comparing the part one pre-test part two post-test change scores a different pattern emerges. The post-test was subtracted by the pre-test to obtain the change scores for each participant. The mean of these results was then compared by condition. The results between the pre-test, before participants were placed in a condition, and part two, two weeks after completing part one were compared. Using a one-way between groups ANOVA, these difference scores were analyzed.

When looking at the mean change score from part one to part two, no significant differences were found on the AHCS (F (5, 53) =.45, *n.s.*). An LSD Post Hoc comparison was also used to analyze individual differences. No significant differences were found. It appears that difference scores do not change any further with time.

The between groups ANOVA for the ATTAS saw no significant differences (F (5, 53) =1.26, *n.s.*). The LSD Post Hoc revealed that participants in the human/animal picture condition (M=6.33, SD=11.86) had a mean score that was significantly higher than the information condition (M=-4.89, SD= 14.07) (F (5, 53) = 11.22, p<.05).

In examining the mean change scores on the PAS, no significant between group differences were found (F (5, 53) =.15, *n.s.*). There were also no significant differences found in

the Post Hoc comparison of differences between the conditions. The mean difference scores on the ASPCA also had no significant differences (F (5, 53) = .85, *n.s.*) on the ANOVA.

A One Sample T-Test was used to analyze the change scores within each condition compared to a no difference score of zero. When examining the AHCS, it was found that the human-animal information condition (M=3.86, SD=3.29) was significantly higher than the no difference score of zero (t (6) =3.10, p<.05). The ATTAS was examined and found no significant differences. Additionally, the PAS had no significant differences from zero. The control (M=2.87, SD=4.70) was found to be significantly higher than zero for the ASPCA survey (t (14) =2.36, p<.05).

Comparing the Part One Post-Test to the Part Two Post-Test

A one-way ANOVA was used to analyze the mean difference scores that assessed the change from the end of the part one assessment to the assessment done in part two. No significant differences were found on the AHCS (F (5, 53) =1.00, *n.s.*). There were also no significant differences on the ATTAS (F (5, 53) =.77, *n.s.*), the PAS (F (5, 53) =.47, *n.s.*), or the ASPCA (F (5, 53) =.39, *n.s.*) as well.

To analyze the change within the conditions compared to a no difference score of zero, a One Sample T-Test was used. No significant differences were found for the AHCS, ATTAS, and ASPCA scale. The t-test found that the animal information condition (M=6.29, SD=5.85) changed significantly from zero during the time between part one and part two (t (6) =2.84, p<.05).

Discussion

The results indicate that images have an immediate effect on attitude change regarding feelings of animals. However, this effect does not increase further after immediate exposure. The specific effect the material has depends on what specific attitude is being measured.

Pictures of just the animal have an effect on an individual's feelings of continuity towards animals. The increase in scores on the AHCS indicates people viewing these images view themselves and animals as having many similarities. Meaning, these individuals are able to view animals and themselves as belonging on the same continuum. This could be caused by the ability to identify oneself with the animal as opposed to having to picture another person with the animal. Adults are able to associate a greater connection with animals without a human present and this occurs regardless of whether information was present. These individuals are better able to picture themselves with the animal and therefore better able to connect with the animal without the presence of another human in the picture. This change does not appear to last across time as scores did not continue to significantly increase during the time between part one and part two.

When examining the scores from part one to part two, the human-animal information condition was the only condition to have significantly increased change scores for the AHCS. This indicates that it is important to have both images and information to make a more lasting change in feelings continuity with animals. Participants appeared to require the time to reflect upon what they learned and make significant changes in attitudes.

This supports the hypothesis that photographs alone can act as an intervention creating attitude change. These results also fail to support the hypothesis that photographs with a person and animal will cause a greater change. While pictures may increase an individual's sense of continuity more-so than other conditions, educational material regarding animal abuse does not significantly affect individuals' feelings of continuity. It seems that the images have a greater effect than information.

Results are quite different when viewing the PAS. Those who viewed information accompanied by pictures of humans and animals had a larger immediate change in how they view pets. It is possible that viewing the animal and human allows individuals to see a pet with an owner and make a more positive association. This could increase empathy when viewing the information, allowing for a stronger connection to companion animals and higher ratings on questions that assesses attitudes toward pets.

It seems that visual aids can have an effect on immediately increasing attitudes regarding companion. When comparing conditions significant, immediate effects were found for the AHCS and PAS scale. This would indicate that specific conditions (i.e. pictures) increase individuals' empathy toward companion animals.

When examining how time affects attitudes regarding companion animals, change scores for participants in the animal picture with information condition significantly increased during the time from part one post-test to the part two post-test. While the scores for individuals in the human-animal picture with information condition did not continue to increase, the animal picture information condition required time to significantly change. This indicates that without the

presence of a human in the picture, participants may have required more time to make the association that the animal is a pet and creates the attitude change regarding pets.

The scales measuring attitudes toward animal mistreatment are significantly changed when participants view material with images in it. The ATTAS measures participants' attitudes toward negative treatment of animals. Results indicate that images with humans and animals experience the greatest change, but images of animals alone also affect attitudes regarding treatment of animals. Participants had an increased sensitivity to different acts of animal cruelty than before they began the experiment.

When comparing the scores on the ATTAS over time the increase in scores did not continue. This change indicates that photographs have an immediate effect on attitude change regarding the treatment of animals more than information, but it does not appear to continue increasing after exposure. Additionally, scores in the information only condition for the ATTAS decreased with time. This may indicate that the information may create a negative effect on participants' views of animal cruelty. It is possible that because animal abuse information is increasingly seen in many different media sources, people are turned off by the increasing amount of information on this negative topic. Individuals consequently begin to have a negative reaction to material and respond opposite to the desired effect. Therefore, interventions need to be altered to evoke more of an emotional response than a purely logical, fact driven, response.

Additionally, the ASPCA scale examines participants' ratings of punishment for animal abusers, the likelihood of escalation to human violence, etc. There was no significant change immediately following exposure. The between group scores suggest that while empathy toward

animals appears to increase, attitudes regarding mistreatment of animals do not positively change immediately after viewing the material.

Comparing the difference scores of the ASPCA scale to a no difference score of zero reveal that immediately following the presentation of the intervention, scores significantly decline. Additionally, scores do not significantly change in conditions across time. These results may indicate that having to think of this type of material puts participants in a negative mood. They then consequently score lower on a measure of empathy for the animal and punishment for the abuser. These results could also indicate that changing a human's desire to punish other humans for cruelty to a non-human animal is more difficult than changing attitudes on animal cruelty.

While many significant results appear when examining the immediate effect of conditions of attitudes regarding animals, the effects do not continue to increase over time. The lack of significant change in the two week period indicates that the changes that are made are immediate and are not affected by time. It also does not appear to be the information that causes a greater change but the pictures. Only when the text information is paired with images does it cause a change in attitudes.

Applications

Ultimately it appears that how one applies these results depends on what attitudes one wants to change. If increasing empathy towards animals and increasing compassion towards companion animals is the goal, then photographs of companion animals with humans, with or without educational information, would cause the most significant increase. This could be used by shelters and organizations wishing to promote adoption of animals. These groups could

create a campaign featuring the animals with owners, to prompt more people to adopt. Showing the pictures may increase empathy or allow the individual to see the connection between owner and pet.

This is a crucial step in any adoption. As the number of people who view companion animals as members of the family increase, so does the need to give people the opportunity to see this animal as a member of their personal family. The accompaniment of information on animal cruelty may prompt individuals to want to protect or rescue the animal and adopt one.

If an organization is more interested in decreasing the rate of animal cruelty, more information does not appear to be the best route to an immediate attitude change. Increasing sensitivity to the treatment of animals would best be done by presenting images of people with their pets. However, images of animals alone also cause a significant change. The effect seen would indicate that it is the images, not the information, that increases the likelihood an individual will become more sensitive to this type of cruelty.

The information only groups' scores decreasing after viewing the material may indicate a needed change for this type of advocacy. It is possible that by confronting people with the harshness of animal cruelty, it creates cognitive dissonance, the discomfort held from holding conflicting ideas. The conflict occurs as individuals view something they know is wrong happening to something they hold dear (i.e. a pet). Many times to cope with these feelings, people decide not to think of it at all. Pushing themselves away from the problem also pushes away the empathy they had before viewing the information.

Programs for animal cruelty prevention may benefit from decreasing the amount of information and increasing the amount of material that focuses on the healthy owner-pet

relationship. This may bring any variation from this image of a good relationship, such as any acts of mistreatment, more to the forefront of the mind if encountered and makes it more susceptible to change.

Future Research

Future research could build upon these results and examine more factors of attitude change. Different types of information could be used, perhaps from other animal welfare organizations. It is possible that highlighting other aspects of abuse, besides how it affects humans, could cause more of a change. The information could also be presented in a different format, such as video, audio, etc. The different format could allow participants to become attuned to different aspects of the material. Including audio with the text could cause more of a change because the information is being inputted through more than one channel, auditory and visual. Additionally, it is possible that a video could hold the attention of individuals longer and allow for retention and comprehension of more information. As many animal welfare organizations use commercials to reach individuals, this format should be studied further to examine if the desired effect is obtained.

Future studies may also want to expose participants to the conditions more than once. Additional exposure could enhance the possibility of change by reminding participants of animal cruelty and by increasing the probability of retention of the material. It would be worthwhile to examine how many exposures it takes to maximize the desired effects. This could help welfare organizations create campaigns that efficiently and effectively reach the most people by allowing them to adjust where and when to show the information based on how often people view the material.

As main effects were found primarily for photographs, future studies may also want to use eye tracking to examine what participants are spending the most time looking at in these pictures. This may help to determine if specific features of the animals (such as the animal's face or the body language of the human and animal) assist in attitude change more so than other features.

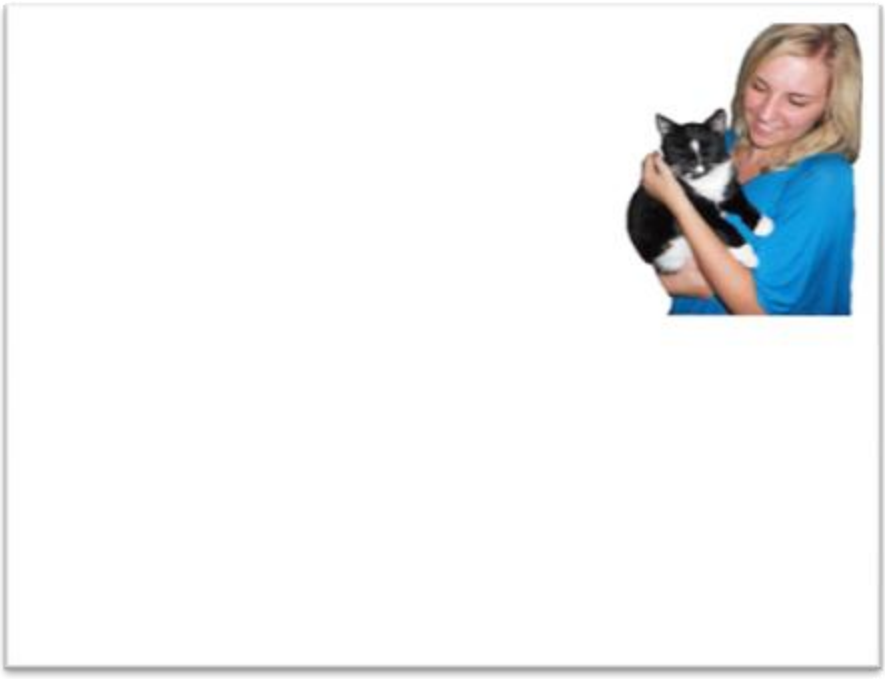
Additional research could build upon this study through manipulation of the images. By examining different aspects of the images, it can be found what features have the largest effect of attitudes regarding animal abuse. The images could be manipulated by changing the animals, the background, and the theme of the photographs. It is common to see animal cruelty advocates use images of beaten, neglected, or otherwise "sad" looking animals in hopes of increasing the empathy towards the animals. Does this have more of an effect than images of healthy, "happy" looking animals? These aspects have not been studied in depth and require more research to maximize the effect.

It is clear that more research should be done regarding attitude change for animal abuse. Many variables have yet to be studied. Fully understanding what causes negative attitudes towards animals to be increased can positively influence animal welfare groups' future campaigns on the topic as well as material promoting kindness for fellow humans. Promoting an increase in empathy for these creatures can have significant influences on other aspects of humanity. As past research has suggested, it is possible that increasing empathy towards humans may correlate to more humane interactions with other humans (Dilmac et al., 2007).

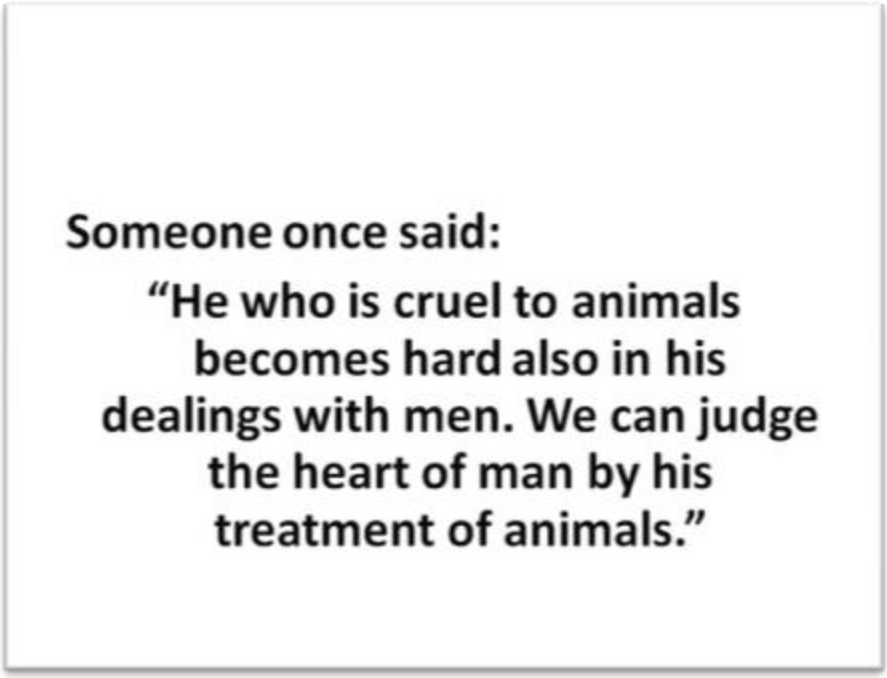
Appendix A: Examples of Intervention Materials

An Example of the Human Animal Picture with Information Condition

An Example of the Human-Animal Picture Alone Condition

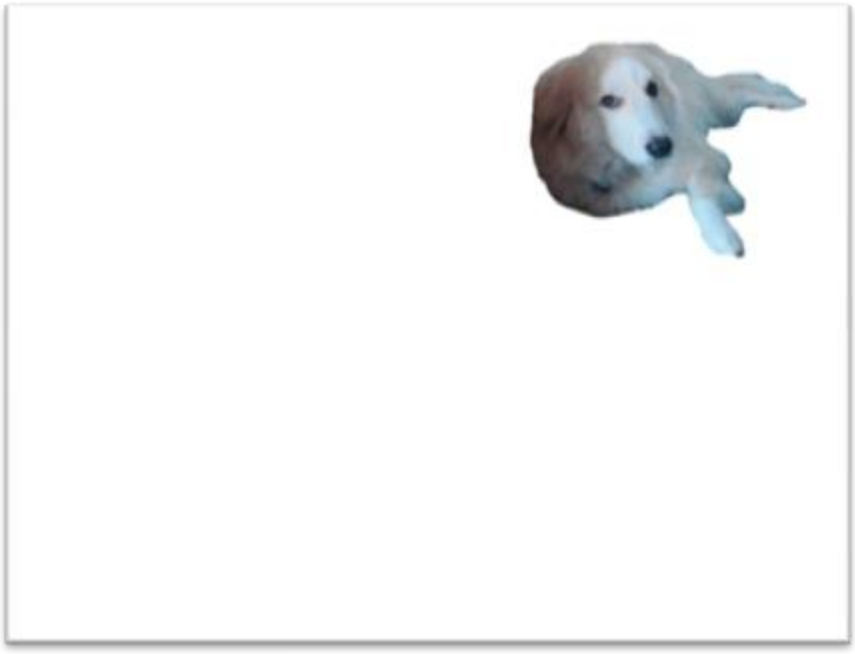


An Example of the Text Information Alone Condition



An Example of the Animal Picture with Information Condition

An Example of the Animal Only Picture Condition



Appendix B: Surveys

Questions Included in the Attitudes toward the Treatment of Animals Scale

On a 1-5 Scale rate how much it would bother you to think about the following:

1. How much would it bother you to think about someone intentionally killing a domestic stock animal (horse, cow, pig) other than for food or to help the animal because the animal was hurt, old, or sick?
2. How much would it bother you to think about someone intentionally killing a wild animal (deer, rabbit, squirrel) other than for food, while hunting, or to help the animal because the animal was hurt or sick?
3. How much would it bother you to think about someone intentionally killing a companion animal (pet dog, cat, rabbit) other than to help the animal because the animal was hurt, old or sick?
4. How much would it bother you to think about someone intentionally killing a domestic stock animal or wild animal for food?
5. How much would it bother you to think about someone intentionally killing a wild animal while hunting?
6. How much would it bother you to think about someone intentionally killing an animal because the animal was hurt, old, or sick (euthanasia)?
7. How much would it bother you to think about someone intentionally killing (euthanizing) a companion animal or domestic stock animal because the owner is unable to care for the animal (the person is moving out of state and cannot take the animal to the new home)?

8. How much would it bother you to think about someone intentionally hurting a domestic stock animal (horse, cow, pig) other than for training, branding?

9. How much would it bother you to think about someone intentionally hurting a wild animal (deer, rabbit, squirrel)?

10. How much would it bother you to think about someone intentionally hurting a companion animal (pet dog, cat, rabbit) other than for training?

11. How much would it bother you to think about someone having sexual contact with an animal?

12. How much would it bother you to think about someone using mice/birds/reptiles in research that results in serious injury, illness, or death of the animal? Animal Cruelty, Delinquency, and Treatment of Animals

13. How much would it bother you to think about someone using mice/birds/reptiles in research that does NOT result in serious injury, illness, or death of the animal?

14. How much would it bother you to think about someone using dogs or cats in research that results in serious injury, illness, or death of the animal?

15. How much would it bother you to think about someone using dogs or cats in research that does NOT result in serious injury, illness, or death of the animal?

16. How much would it bother you to think about someone using primates (monkeys, chimpanzees) in research that results in serious injury, illness, or death of the animal?

17. How much would it bother you to think about someone using primates (monkeys, chimpanzees) in research that does NOT result in serious injury, illness, or death of the animal?

18. How much would it bother you to think about someone failing to provide medical care for a domestic stock animal who is clearly injured or ill?

19. How much would it bother you to think about someone failing to provide medical care for a companion animal who is clearly injured or ill?

20. How much would it bother you to think about someone failing to provide domestic stock animals or companion animals with food or water for 24 hours?

21. How much would it bother you to think about someone leaving domestic stock animals outside without shelter for 24 hours?

22. How much would it bother you to think about someone leaving companion animals outside without shelter for 24 hours?

23. How much would it bother you to think about someone leaving a companion animal in a locked car with the windows cracked with an outside temperature of 70° for one hour?

24. How much would it bother you to think about someone intentionally hurting a domestic stock animal for the purposes of training the animal (hitting the animal to encourage it to behave in a particular manner)?

25. How much would it bother you to think about someone intentionally hurting a companion animal for the purposes of training the animal (using a shock collar to train a dog)?

26. How much would it bother you to think about someone intentionally encouraging or causing animals to fight one another (dog fighting, cock fighting, etc.)?

Questions Included in the Animal Human Continuity Scale

On a scale of 1-7 rate how much you agree to the following

1. Humans have a soul but animals do not
2. Humans can think but animals cannot
3. People have a life after death but animals do not
4. People are animals
5. Animals are afraid of death
6. People evolved from lower animals
7. People are superior to animals
8. Animals can fall in love
9. People have a spiritual nature but animals do not
10. The needs of people should always come before the needs of animals
11. It's ok to use animals to carry out tasks for humans
12. It's crazy to think of an animal as a member of your family

Questions Included in the Pet Attitude Scale

On a scale of 1-7 rate how you feel about the following

1. I really like seeing pets enjoy their food
2. My pet means more to me than any of my friends
3. I would like a pet in my home
4. Having a pet is a waste of money
5. House pets add happiness to my life (or would if I had one)
6. I feel that pets should always be kept outside
7. I spend time everyday playing with my pet everyday (or would if I had one)
8. I have occasionally communicated with my pet and understood what it was trying to express.
9. The world would be a better place if people would stop spending so much time caring for their pets and started caring more for other human beings instead
10. I like to feed animals out of my hand
11. I love pets
12. Animals belong in the wild or in zoos, but not in the home
13. If you keep pets in the house you can expect a lot of damage to the furniture
14. I like house pets
15. Pets are fun but it's not worth the trouble of owning one
16. I frequently talk to my pet
17. I hate animals

18. You should treat your house pets with as much respect as a human member of the family

Questions Included in the ASPCA Survey

On a scale of 1-7 rate the following

1. Do you think that a person who is violent towards animals will eventually be violent toward people?
2. If a person harms or kills an animal, how much should he be punished?
3. Should the penalty for the death of an animal be as severe as for the same crime to a human?
4. Would this punishment (question 3) prevent further acts of violence by the perpetrator?
5. Should animal abusers be barred from ever owning another animal?
6. Should a community be notified if an abuser lives in their neighborhood?
7. Do you think animal cruelty could lead to harmful behavior towards people?

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