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THE PERSUASIVE IMPACT OF DISGUST-PROVOKING
IMAGES IN ANIMAL-RIGHTS CAMPAIGNS

presented by

CHELSEA FRISTOE

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of the requirements for the

M.A. degree in Communication

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**THE PERSUASIVE IMPACT OF DISGUST-PROVOKING IMAGES IN ANIMAL-
RIGHTS CAMPAIGNS**

By

Chelsea Fristoe

A THESIS

**Submitted to
Michigan State University
in partial fulfillment of the requirements
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ABSTRACT

THE PERSUASIVE IMPACT OF DISGUST-PROVOKING IMAGES IN ANIMAL- RIGHTS CAMPAIGNS

By

Chelsea Fristoe

This study investigates the persuasive potential of disgust-appeals. The Cognitive Functional Model (CFM) is used as a framework for understanding how emotions work to influence overall acceptance or rejection of a persuasive message. Value-relevant involvement (VRI) was included as an independent variable. Participants (N=198) were given a pre-test of attitudes, intention to become vegetarian, and VRI. They then viewed either a disgust-evoking message or a non-disgust evoking message and then rated the message for how disgusting they perceived it to be. Message avoidance, attitudes, intention to become vegetarian, sadness, guilt, and number of message-relevant thoughts were also assessed. The disgust video was seen as more disgusting than the non-disgust video. The interaction between VRI and the dependent variables was non-significant, but there were main effects for nearly all dependent variables. These results indicate that disgust-evoking messages are persuasive, and that value-relevant involvement has a role in disgust appeals. This study also provides support for the cognitive-functional model.

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INTRODUCTION

In the past few decades, research in the persuasion arena has turned to a closer examination of the role that emotions play in persuasion. To date, most attention in research involving emotions has been devoted to the impact that the provocation of fear has on persuasive attempts (e.g. Dillard, 1994; Hale & Dillard, 1995; Witte, 1992), while very little focus has been given to studying the important role that other emotions may have on these same kinds of attempts (Nabi, 1999). Most discrete negative emotions, such as sadness, anger, disgust, or guilt, may play a role in persuasion, but have been nearly overlooked, with some exception (e.g. Shimp & Stuart, 2004; Turner, Wang, Yao, & Xie, 2005; Yoo, Matsumoto, & LeRoux, 2005). The role of these emotions in persuasion is not yet well understood. Most examinations of emotion research in persuasion call specifically for a more in-depth exploration of emotions other than fear, namely disgust, anger, and sadness (Dillard & Peck, 2001; Nabi, 1999; Nabi, 2002b).

The current study is focused on filling this gap, examining the relationship between messages eliciting disgust and persuasion. Persuasion, in this paper, is defined as a “successful intentional effort at influencing another’s mental state (attitudes, in this case) through communication in a circumstance in which the persuadee has some measure of freedom” (O’Keefe, 2002, p. 5). As background for the study, a definition and examination of emotions, specifically disgust, is provided. This is followed by a look at animal-rights campaigns, one type of message that uses disgust appeals. Next, a look at the potential implications of these kinds of campaigns is provided. Finally, an overview of a theoretical framework, the Cognitive-Functional Model (Nabi, 1999), is presented that will explain the predicted persuasiveness of disgust-evoking messages.

Emotions

Emotions are psychological constructs that can be defined as internal, mental states, representing evaluative, valenced reactions to events, objects, or agents that vary in intensity (Nabi, 1999). Emotions are distinct from moods, which can be defined as positively or negatively valenced, low-intensity affective states that are fairly enduring and have no obvious antecedent (Forgas & George, 2001).

Emotions are often linked to Charles Darwin's work on evolution (Darwin, 1872/1965), offering a frame through which to understand the mechanisms of various emotions. Through this lens, emotions are assumed to have inherent adaptive functions developed through evolutionary processes (Nabi, 1999). Each discrete emotion has an associated action tendency, or response behavior thought to serve adaptive functions (Darwin, 1872/1965). For example, anger is elicited in response to obstacles interfering with goal-oriented behavior or demeaning offenses against one or one's loved ones (Nabi, 2002b). The action tendency associated with anger is highly focused attention and a desire to strike out at, attack, or retaliate against the source. The evolutionary purpose proposed in this case is that people experience this response to an anger-eliciting object or situation in order to remove something that could potentially cause physical or psychological harm. In the context of persuasion, Nabi (1999) argues that "if a message elicits an emotion, its...action tendency sets a goal" (p. 304). An emotion's action-tendency may serve to encourage motivated message processing because in persuasion, "judgment about a goal can precede judgment about message acceptance" (Nabi, 1999, p. 304). Nabi (1999) along with others (e.g. Breckler, 1993; Dillard, 1994; Leventhal & Trembly, 1968) propose a link between affect and persuasion. The action-tendency

associated with each emotion ultimately can determine a receiver's response to a persuasive attempt. In other words, an emotion's action-tendency may serve as a motivator in overall processing of the persuasive message, and therefore significantly influence the resulting attitude and/or behavior change.

Reviewing the literature on negative emotion and attitude change, Breckler (1993) suggested that fear is the only discrete negative emotion that has yet been thoroughly examined and understood through empirical evidence, a claim echoed by Nabi (2002b). Guilt has been given some erratic attention (e.g., Boster et al., 1999). Anger, disgust, and sadness have been almost ignored in persuasion research, and are also relatively understudied (e.g., Shimp & Stuart, 2004; Turner, 2007; Yoo et al., 2005). Positive emotions, such as happiness, pride, and relief, have been examined in the context of persuasion, but are also lacking thorough examination. Happiness is the most thoroughly examined positive emotion (Lazarus, 1991). Research on happiness is still scant, with notable exception (e.g., Petty, Wegener, & Fabrigar, 1997). Though some research exists (Igartua, Cheng, & Lopes, 2003; Kinnick, Krugman, & Cameron, 1996; Roseman, Abelson, & Ewing, 1986), other positive emotions, such as pride, relief, hope, and compassion are more lacking in empirical understanding (Nabi, 1998). Given the important role fear plays in the persuasive process, a more thorough examination of the potential persuasive power of other emotions may help to identify an important tool in motivating attitude change. The current study looks at disgust specifically as a potential motivator for attitude change.

Disgust

In theorizing on negative emotions, disgust is nearly always indicated as one of the fundamental human emotions (Dillard & Peck, 2001; Nabi, 2002c; Shimp & Stuart, 2004). Disgust is aroused by objects or ideas that are literally spoiled (like rotten food) or psychologically spoiled (like moral transgressions), and is generally thought to result from *the closeness to or ingestion of a noxious object or idea* (Nabi, 1999). According to Nabi (1999), the action tendency associated with disgust is a motivation to turn away from the object of disgust, or defend oneself against the object. The evolutionary purpose for disgust is to keep oneself away from something that could cause physical or psychological harm. There are many persuasive implications given this reaction centering on using a disgust-provoking image or message to move people away from an undesirable, dangerous, or unhealthy behavior or object.

Disgust is generally considered a culturally determined emotion, therefore it is posited that elements people associate with disgust vary between cultures (Lazarus, 1991). Disgust is also associated with morality (Haidt, Rozin, McCauley, & Imada, 1997), such that people feel disgust in response to culturally-specific moral transgressions. Previous research in this area has examined several aspects of disgust that are important to understanding its persuasive potential. For example, disgust has been shown as a motivator in hand-washing behavior (Curtis, 2003), physical activity (Woolf, 2007), and as an inhibiting mediating factor in success of advertising attempts (Christ & Thorson, 1992; Shimp & Stuart, 2004). Some persuasion studies have also included measures of disgust (Christ & Thorson, 1992; Leventhal & Tremblay, 1968), but thorough research examining the evocation of disgust in persuasive messages explicitly is missing.

Understanding the potential persuasive power of disgust to the same extent that we understand the persuasive functions of fear may help identify another important persuasive tool in motivating attitude change. One place where disgust appeals are frequently used is animal- rights campaigns.

PETA's Campaigns for Animal Rights

People for the Ethical Treatment of Animals (PETA), a nonprofit charitable organization formed in 1980, has emerged as one of the leading animal-rights groups in the United States, affiliating with similar groups in the United Kingdom and India, among others (PETA, 2009). PETA is considered the most visible of all radical animal rights groups in present existence, and has over 350,000 members and an annual budget of \$10 million (PETA, 2009). PETA is perhaps best known for its use of graphic images of slaughtered and injured animals, and for its hand in many successful legislative animal rights efforts (Jamison & Lunch, 1992; PETA, 2009).

In its two-part video, "Meet Your Meat" (PETA, 2003) narrated by American actor Alec Baldwin, PETA launched a campaign aimed at promoting vegetarianism and the humane treatment of animals by the meat-processing industry (PETA, 2009). The main features of this campaign are startling images of animal cruelty. With this in mind, animal-rights campaigns similar to PETA's campaign videos are a prime place to gather messages for testing the provocation of negative message-relevant affect, particularly disgust, and the persuasive implications for this kind of campaign. With images featuring chickens with cut off beaks, diseased calves, and livestock slaughter, disgust is likely to be the foremost emotion to be elicited from many animal-rights campaigns, and therefore a prime candidate for the current study. Additionally, because the animal-rights

movement has come to the forefront of active political movements in the United States over the past several decades (Jamison & Lunch, 1992), the topic is culturally relevant.

Videos like “Meet Your Meat” are designed to encourage vegetarianism to viewers, and educate people about the animal cruelty that results from certain parts of the meat industry (PETA, 2009). Aside from the animal-rights issues associated with vegetarianism, there are health benefits to making such a change in diet. A well-planned vegetarian diet has been linked to reduced risk for many chronic diseases, such as diabetes, obesity, hypertension, and certain types of cancer (Craig & Mangels, 2009; Rajaram & Sabate, 2000). Additionally, vegetarians tend to have lower body mass indexes than non-vegetarians (Craig & Mangels, 2009). Carefully planned vegetarian diets are appropriate for people at all stages of the lifecycle—infancy, childhood, adulthood, pregnancy, etc.—and also for people of varying activity level, from sedentary people to athletes (Craig & Mangels, 2009; Lindbloom, 2009). Finally, vegetarians are 24% less likely to have heart disease than non-vegetarians, and vegetarians live longer lives than non-vegetarians, on average (Lindbloom, 2009; Rajaram & Sabate, 2000). As shown above, animal rights campaigns, specifically those aimed at promoting vegetarianism in its viewers, encourage healthy behaviors. It appears that many of these campaigns use images that provoke disgust to try to persuade viewers to turn away from a noxious practice. In order to make predictions for the persuasiveness of disgust-eliciting messages, this study draws upon Nabi’s (1999) Cognitive-Functional Model as a theoretical framework. This model offers specific predictions for the relationship between negative emotions and persuasion and provides a framework for examining the role of disgust in animal rights campaigns.

Cognitive-Functional Model

The Cognitive-Functional Model (CFM) has been relatively untested since its origin, with some exception (Dillard & Nabi, 2006; Nabi, 2002a). The CFM focuses largely on negative emotions, like disgust, and provides a model predicting the effects discrete emotions have on information processing, attitude change, and recall. There are three variables of central importance to the CFM: (1) the type of emotion experienced, (2) motivation associated with the emotion elicited by the message, and (3) the receiver's expectation of the message providing goal-relevant information (Nabi, 1999). Each of these variables will be discussed below.

An emotion can be broken into two response categories based on the action tendency associated with it: avoidance response versus approach response (Lazarus, 1991). With each emotion, people generally respond by avoidance (e.g. fear elicits avoidance of the element causing fear) or approach (e.g. when experiencing joy, a person will want to be closer to the element causing joy). This initial approach/avoidance response serves as a mediating factor to the receiver's overall processing of a message. Emotions are typically grouped into either an avoidance or approach category. Sadness, guilt, fear and disgust fall into the avoidant category. Disgust is considered by Nabi (1999) to be moderately avoidant. Generally speaking, negative emotions are more avoidant as opposed to positive emotions. Nabi (1999) states that the depth of information processing associated with each emotion is a function of both this avoidance/approach response, and the receiver's overall willingness to more thoroughly consider the situation. Along these lines, fear, the most highly avoidant negative emotion, elicits the least willingness to closely process the remaining message of all

discrete emotions, followed closely by disgust and guilt. Disgust is also assumed to elicit low willingness to closely process the message, motivating people to turn away from what is causing this emotion.

The CFM suggests that along with the action-tendency associated with a given emotion, the persuasive motivation associated with a given emotion is important (Nabi, 1999). This motivation is driven by the receiver's expectation of the message providing goal-relevant information. Negative emotions serve as signals that an undesirable situation is present and needs to be addressed in some manner (i.e., an emotion can be a motivator to pursue an end goal). The goal is to alleviate the undesirable feeling or situation produced by a negative emotion-evoking message. Motivation to continue processing a message comes ultimately from the receiver's pursuit of this goal. More specifically, if the message induces disgust, the receiver's goal will be to avoid the repulsive object or idea. The CFM uses this logic to make predictions based on the receiver's expectation of the message's ability to meet their goal. If a receiver expects the message will provide information about how to stay away from the disgust-provoking element, for instance, processing motivation will be present. The scant research testing this model has shown mixed conclusions regarding fear and anger (Nabi, 1998) and has never been tested on disgust. Research testing this model is not thorough enough to make generalizations about its validity, and thus the current study also serves as further test of the CFM. The CFM goes on to make several predictions relevant to the current study of disgust-eliciting messages.

The CFM's first, and arguably most important, proposition states that before an emotion-eliciting message can begin to be influential, it must be shown that the message

elicits the emotion it intends to, and that the emotion comes from the message content itself. In addition, the receiver of the message must perceive the elicitation of the emotion as personally relevant, in order to fully experience the intended emotional response.

In this study, the messages to which the participants will be exposed contain images of dead and injured animals. In the United States, people are unaccustomed to seeing dead animals because slaughter and meat-processing practices are largely kept out of sight (Jamison & Lunch, 1992). In this cultural context, we may assume that images like this should provoke at least some disgust in most receivers. However, Dillard (2001) notes that because of the complexity and ambiguity of affect and persuasion, messages are likely to elicit emotions other than those intended (e.g., the emotions elicited from the same message will be different for different people). This is important to this study because it is likely that receivers may also feel sadness or guilt in association with the images in the animal-rights campaign in addition to or instead of disgust. Sadness and guilt are closely related to disgust because of their similar links to morality (Haidt, Rozin, McCauley, & Imada, 1997). This presents some implications for the current study, accounted for by the CFM. In this study, there will be a prediction of disgust as the most salient primary emotion, but also an account for the likelihood that some receivers will experience other emotions from the same message. Therefore:

Hypothesis 1a: Messages designed to elicit disgust will result in higher perceived disgust than messages not designed to elicit disgust.

Hypothesis 1b: Messages designed to elicit disgust will result in higher perceived sadness and guilt than messages not designed to elicit disgust, however scores on these variables will be significantly lower than perceived disgust.

Additionally, though disgust is not generally determined by personal experience and individual differences (Lazarus, 1991), the subject of animal-rights is likely related to individual values. Some people may consider being kind to animals as more important than other people consider this topic. More specifically, the concept of value-relevant involvement may be important to consider as a moderator of the relationship between disgust and attitudes.

Value-Relevant Involvement

Values may be defined as particularly important or enduring aspects of the self (e.g. love, equality, happiness) (Eagly & Chaiken, 1993; Johnson & Eagly, 1989). Value-relevant involvement (VRI) may be defined as the *psychological state induced by the activation of attitudes linked to important values* (Cho & Boster, 2005; Johnson & Eagly, 1989). Involvement is considered to be a key individual difference affecting the success or failure of persuasive attempts (Cho & Boster, 2005; Park, Levine, Kingsley Westerman, Orfgen, & Foregger, 2007). VRI is a part of ego-involvement as set forth by Sherif and colleagues in their early research (Sherif & Cantril, 1947; Sherif & Sherif, 1967). Ego refers to one's self-concept, and is integrally related to values. Therefore, ego-involvement and VRI are necessarily intertwined (Cho & Boster, 2005). VRI is proposed to serve as an internal frame of reference for judging and responding to messages related to the value (Johnson & Eagly, 1989). Part of the CFM's first predictions state that an emotion must be judged as at least somewhat personally relevant

for the receiver to experience the emotion (Nabi, 1999). This is important in the context of VRI in that as VRI increases, the amount of disgust the person experiences should also increase. Differences in VRI will likely impact overall processing of the message, beginning with the strength of the emotion experienced. VRI has been shown to play a role in persuasion in many previous studies (e.g. Petty, Cacioppo, & Goldman, 1981; Slater, 2002). The value of relevance that is the focus of this study is kindness to food animals. One of the ten core values named by Schwartz & Bilsky (1987) is *universalism*, which includes values of environmental protection and harmony with nature. Included in this is the idea that it is a human responsibility to care for other living things, like animals. It is likely that few people in the United States would say that kindness to animals is morally wrong, but people will vary on their overall involvement with this particular issue, especially in the context of animals used for food. People with greater VRI can be assumed to have greater engagement with messages related to this value. With these things in mind, the current study predicts that:

Hypothesis 2a: VRI will moderate the effects of viewing the disgust messages such that those with high VRI that view the disgust message will report the greatest perceived disgust relative to those with low VRI or those in the non-disgust message condition.

Hypothesis 2b: VRI will moderate the effects of viewing disgust messages on sadness and guilt such that those with high VRI who view disgust messages will report the greatest perceived sadness and guilt relative to those with low VRI or those in the non-disgust message condition.

The CFM further predicts that after an emotion is elicited, motivated attention and motivated processing are stimulated at the same time. Motivated attention is the idea that the receiver will have some degree of an avoidance/approach response to the message based on the type and intensity of the emotion. This avoidance/approach response determines the receiver's willingness to consider the message that is the source of the emotion, and to think about the emotion-eliciting situation in general. In the case of disgust, the CFM predicts that considering the emotion-eliciting situation and the source of the emotion is discouraged, and that resulting motivation to carefully attend to the subsequent message will decrease. The CFM specifically states that in the case of disgust, receivers should pay less attention to the root of their feelings of disgust (the images) and will avoid paying close attention to subsequent messages eliciting disgust. Given the importance of value-relevant involvement in the context of this study, these predictions may be slightly different. As predicted above, value-relevant involvement will play a role in the strength of the disgust elicited by the messages. Building on this, receivers high in VRI will perceive stronger disgust than receivers low in VRI. It follows that receivers high in VRI should also have greater motivation to avoid the message. Additionally, Nabi (1999) posits that disgust elicits low willingness to closely process a message. It follows that receivers high in VRI who experience high disgust should have less willingness to process the message. Therefore:

Hypothesis 3: Participants high in VRI will have stronger motivation to avoid the disgust-eliciting message relative to those with lower VRI or those in the non-disgust message condition.

Hypothesis 4: VRI will moderate the effects of viewing disgust messages on thoughts about the message such that those with high VRI who view disgust messages will report the lowest number of message-relevant thoughts relative to those with low VRI or those in the non-disgust message condition.

Though the CFM goes on to make additional predictions regarding the receiver's expectation that the message will provide goal-relevant information, ability to process, and type of processing, the scope of the current study is limited to the first steps of the CFM. Incorporating all previous predictions, the CFM states that receivers who do not have negative feelings toward the source of the message, and who do not try to avoid the message will ultimately accept the message's recommendation. Thus, the extent to which message avoidance occurs should play a role in ultimate persuasive outcomes of messages.

Previous research indicates that VRI can inhibit persuasion (Cho & Boster, 2005; Park et al., 2007). This is important in that though the action-tendency of disgust is elicited in viewers, each person's level of value-relevant involvement will play a role in their overall acceptance or rejection of the message. Specifically, receivers high in VRI should show less attitude change than receivers low in VRI. Integrating all aforementioned items:

Hypothesis 5: There will be a direct, negative effect of VRI on attitudes and intentions such that there will be a negative association between VRI and attitude and intention change.

Research Question 1: Will disgust messages result in more positive attitudes toward vegetarianism than non-disgust messages?

Research Question 2: Will disgust messages result in more positive intentions to become a vegetarian than non-disgust messages?

Method

Overview and Design

This study tested the effects of message appeals designed to elicit disgust relative to non-disgust appeals by testing two different messages—a disgust-provoking message and a non-disgust provoking message. Value-relevant involvement in kindness to food animals was a measured independent variable. Measured dependent variables included negative emotion (disgust, guilt and sadness), avoidance of message content, negative thoughts about the message, and attitudes and intentions. Disgust sensitivity was a measured covariate.

Participants

For this study, 200 participants were recruited through the undergraduate communication participant pool of introductory communication classes within the department of Communication Arts and Sciences. The age of participants ranged from 18 to 32 years old. The mean age of the participants was ($M = 20.35$, $SD = 1.8$) years. Most were Caucasian (79.3%), but the sample included people who reported as African-American (10.1%), Hispanic (2%), Native American (.5%), and Asian (5.6%). Two percent of the participants reported their race as other. The majority of the participants were female (68.2%). Two participants reported being currently vegetarian and their data were removed from additional analysis.

Messages

The first part of the PETA video *Meet your Meat* (PETA, 2003) was carefully edited to be appropriate for this study. All associations with PETA specifically were removed from the videos. The original narration by Alec Baldwin was removed and redone by a professional male vocalist. For the disgust condition, the original video was kept intact with all references to PETA removed, and parts that were not disgust-provoking edited out. The narration for this video was kept consistent with the original video, with irrelevant parts left out. The video used for the non disgust-inducing condition was edited to include as few emotion-inducing elements as possible, and was edited to be ten minutes long, the same length as the disgust-inducing video. For example, parts of the video included in the disgust condition included images of animals being slaughtered with facts about the meat industry discussed, while the non-disgust condition video showed images of similar animals in clean, natural environments while the same facts about the meat industry were discussed. The narration for the non-disgust video was changed to include less disgust-provoking words. For example, “After being electrically prodded and forced onto the killing floor, improper stunning forces pigs to have their throats slit while they are still awake” was changed to “even though electric prodding is used to stun the pigs, sometimes their throats are cut while they are still conscious” in the non-disgust condition.

Procedures

This study employed an internet survey to test its predictions. After completing consent procedures, participants were given a pre-test to measure attitudes towards vegetarianism, value-relevant involvement, and intentions to become vegetarian.

Participants were then randomly assigned to one of two conditions—a disgust-provoking video ($n = 97$) or the same video without disgust-provoking elements ($n = 101$; see “Messages” section). After viewing the video, participants then completed manipulation check items to ensure that the experiment video did in fact elicit disgust as a salient emotion, and that levels of disgust were higher than the control video. Participants then performed a thought-listing task and message-avoidance measures. Finally, participants received a post-test measure of attitudes toward becoming vegetarian and intention to become vegetarian.

Measurement

Attitudes and Intentions. Items assessed pro-vegetarian attitudes and intention to become vegetarian. These items used modified versions of Park and Smith’s (2006) 5-point semantic differential scales (e.g., 1=unfavorable, 5=favorable). Park & Smith (2006) provide evidence for the validity and reliability of these scales. These items were administered prior to viewing the videos and after viewing the videos. See Appendix A for these items.

Value-Relevant Involvement. Prior to viewing the message, participants were given items designed to measure value-relevant involvement (VRI) from Park et al., 2007. Items on this measure included four Likert-type items with a 5-point response format; higher scores indicated higher VRI. Park et al. (2007) provide evidence for the reliability and validity of these scales; see Appendix B for these items.

Negative emotions. Items assessed the extent to which disgust-eliciting messages were eliciting disgust and other negative emotions in participants. Similar to Nabi (2002a), after viewing the message participants rated on 5-point Likert-type items how

much of each emotion—disgust, anger, guilt, and sadness—they felt while viewing the message. Items were scored such that higher numbers indicated greater levels of the discrete emotion. Additional items were constructed for the disgust scale to overcome the limitation of single item measures used by Nabi (2002a); see Appendix C for these items.

Message Avoidance. Message avoidance was assessed after participants viewed the message using a modified version of a 5-item measure of how much participants wanted to avoid the message while viewing it (Miles, Voorwinden, Chapman, & Wardle, 2008). Miles et al. (2008) provide evidence for the validity and reliability for these measures. Participants rated items on 5-point Likert-type scales. Higher scores indicated greater message avoidance; see Appendix D for these items.

Thought Listing. Similar to Nabi (2002a), after receiving the persuasive message, participants were asked to list up to 10 thoughts or feelings they had while viewing the message to measure message-relevant thoughts. Each thought listed was counted as one unit. Trained coders coded a sub-sample of the thought data independently. Intercoder reliability was calculated using Cohen's Kappa (Cohen, 1960). The units were coded by two researchers for 10% of the responses. Data were coded and disagreements were resolved by discussion, then the data were re-coded until sufficient reliability was achieved. Then, the first author coded the remainder of the data. Thoughts were coded as either message-relevant, or message-irrelevant. Cohen's Kappa ranged from .85 to 1 on thought variables. Total number of message relevant thoughts, defined as any thought that referred directly to the message or message content (e.g. "I hate seeing these images", were examined (Nabi, 2002a)²; the thought-listing format is presented in Appendix E.

Covariates. Items measuring disgust-sensitivity were used as measured covariates. Prior to viewing the disgust or non-disgust message, participants answered 27-items assessing disgust-sensitivity (Olatunji, Williams, Tolin, Abramowitz, Sawchuk, Lohr, & Elwood, 2007). Olatunji et al. (2007) provide evidence for the validity and reliability of this scale which includes three dimensions. The first dimension (D1), core disgust, includes items like “It bothers me to hear someone clear a throat full of mucus”. The second dimension (D2), animal-reminder disgust, includes items like “It would bother me to be in a science class, and to see a human hand preserved in a jar”. The third dimension (D3), contamination disgust, includes items like “You take a sip of soda and realize that you drank from the glass that an acquaintance of yours had been drinking from”. Participants rated items on 5-point Likert-type scales (0-4). Higher scores indicated higher disgust-sensitivity. See Appendix F for these items.

Results

All multiple-item measures were examined for positive contribution of items to scale reliability, item-total correlations, overall scale reliability, and the extent to which the distributions approximated normality. The scale means, standard deviations, and alphas for all scales across conditions are presented in Table 1. All scale alphas were within acceptable ranges; only disgust sensitivity dimension 3 ($\alpha = .65$) was relatively low.

Hypothesis 1a was an induction check for the disgust message conditions, and was performed using an independent sample t-test to determine if participants who viewed the disgust-eliciting message were more disgusted following viewing the message than participants viewing the non-disgust eliciting message. The result showed a

significant difference between participants viewing the disgust-eliciting message ($M = 4.23$, $SD = .87$) and participants viewing the non-disgust eliciting message, $M = 3.18$, $SD = 1.03$, $t(195) = -7.69$, $p = .001$. Participants viewing the disgust-eliciting message were more disgusted than participants viewing the non-disgust message. Therefore, the data were consistent with the first hypothesis.

Hypothesis 1b predicted that messages designed to elicit disgust would result in higher perceived sadness and guilt than messages not designed to elicit disgust, but that scores on these variables would be significantly lower than scores on perceived disgust. An independent sample t-test showed there was not a significant difference in perceived guilt between participants viewing the disgust-eliciting message ($M = 2.92$, $SD = .93$) and participants viewing the non-disgust eliciting message, $M = 3.01$, $SD = .82$, $t(196) = .703$, $p = .483$. An independent sample t-test showed a small but significant difference in perceived sadness between participants viewing the disgust-eliciting message ($M = 2.32$, $SD = .65$) and participants viewing the non-disgust eliciting message, $M = 2.56$, $SD = .54$, $t(196) = 2.78$, $p = .006$. The non-disgust message was perceived as sadder than the disgust message, inconsistent with predictions of Hypothesis 1b. This hypothesis also predicted that scores on disgust would be higher than scores on both sadness and guilt in the disgust message condition. Single sample t-tests were used to compare the mean of perceived disgust in the disgust message condition ($M = 4.23$) to the means of perceived guilt and sadness in this condition. Consistent with the hypothesis, these data indicate that disgust scores were significantly higher than guilt scores $t(96) = 13.92$, $p = .001$ and sadness scores $t(96) = 28.88$, $p = .001$.

Hypothesis 2A predicted that value-relevant involvement would moderate the effects of viewing the disgust messages such that participants with high VRI viewing the disgust message would report the greatest perceived disgust relative to those with low VRI or those in the non-disgust message condition. Analysis of co-variance (ANCOVA) was used to examine this relationship by creating a median split for value-relevant involvement and creating two levels of VRI (high and low) acknowledging the limitations of categorizing quantitative variables¹. Tabachnick and Fidell (2001) recommend selecting a small number of covariates that are uncorrelated with each other but correlated with the dependent variable. Thus, following examination of the correlations among all variables, one dimension of disgust sensitivity, core disgust (D1) and perceived sadness were included as covariates in the model; means reported below are adjusted for the inclusion of the covariates. Results indicated that there was not a significant interaction effect for value-relevant involvement and disgust message on perceived disgust, $F(1, 123) = .15, p = .699, \eta^2 = .001$. Therefore, people high in VRI do not perceive disgust-provoking messages as more disgusting than people lower in VRI. Careful examination of the means indicated that people in the disgust message condition who were high in VRI were the most disgusted and that the confidence intervals for this effect do not overlap with those in the no disgust/low VRI condition. The main effect for VRI was significant, $F(1, 123) = 10.50, p = .002, \eta^2 = .08$ such that those high in VRI ($M = 4.05; SE = .15$) viewed the message as more disgusting than those low in VRI ($M = 3.47; SE = .10$). Consistent with the t-test results above, the main effect for the disgust message was also significant, $F(1, 123) = 24.56, p = .001, \eta^2 = .17$. The covariates, sadness [$F(1, 123) = 4.61, p = .034, \eta^2 = .036$] and disgust sensitivity dimension core

disgust (D1) [$F(1,123) = 11.59, p = .001, \eta^2 = .086$] were significant. The means and standard deviations for each condition are presented in Table 2.

Hypothesis 2b predicted that VRI would moderate the effects of viewing disgust messages on sadness and guilt such that those with high VRI who view disgust messages would report the greatest perceived sadness and guilt relative to those with low VRI or those in the non-disgust message condition. For the sadness dependent variable, ANCOVA was used to test the effect of VRI and message with animal-reminder disgust (D2) of the disgust sensitivity scale and perceived disgust as covariates in the analysis. For sadness, the interaction between VRI and disgust message was not significant, $F(1, 123) = 1.39, p = .24, \eta^2 = .01$. The main effect for VRI was also not significant, $F(1, 123) = 1.29, p = .82, \eta^2 = .001$. The main effect for the disgust message on sadness was not significant, $F(1, 123) = .05, p = .83, \eta^2 = .001$. The covariates, animal-reminder disgust (D2) [$F(1, 123) = 23.14, p = .001, \eta^2 = .16$] and perceived disgust [$F(1, 123) = 8.92, p = .003, \eta^2 = .16$] were significant. For guilt, ANCOVA was used to test the prediction with contamination disgust (D3) and perceived disgust as covariates. The interaction between VRI and the disgust message was not significant for the guilt dependent variable, $F(1, 123) = .33, p = .57, \eta^2 = .003$. The main effect for VRI on guilt was not significant, $F(1, 123) = 1.57, p = .213, \eta^2 = .013$. Therefore, people high in VRI do not perceive the disgust condition message as more sad or guilt-provoking than people lower in VRI. The disgust sensitivity covariate contamination disgust (D3) was significant, $F(1, 123) = 57.86, p = .001, \eta^2 = .32$, while the perceived disgust covariate was not significant, $F(1, 123) = 2.70, p = .103, \eta^2 = .02$. The means and standard deviations for each condition are presented in Table 2, correlations among the variables are presented in Table 3.

A third hypothesis predicted that participants high in VRI would have stronger motivation to avoid the disgust-eliciting message relative to those with lower VRI or those in the non-disgust eliciting message condition. An analysis of covariance was used to examine this relationship, with disgust sensitivity animal-reminder disgust (D2) included as a covariate. Results were not consistent with predicted interaction, $F(1, 123) = 1.77, p = .185, \eta^2 = .01$. People high in VRI did not have greater motivation to avoid the message. The main effect for disgust on message avoidance was significant, $F(1, 123) = 12.76, p = .001, \eta^2 = .09$, such that people in the disgust message condition reported greater avoidance ($M = 3.37; SE = .09$) than those in the non-disgust message ($M = 2.82; SE = .11$) but both were around the scale midpoint. The main effect for VRI on message avoidance was not significant, $F(1, 123) = 1.44, p = .232, \eta^2 = .011$. Therefore, people high in VRI do not have stronger motivation to avoid disgust-evoking messages than people low in VRI, but there is a main effect between perceived disgust and message avoidance. The covariate, animal-reminder disgust (D2), was significant, $F(1, 123) = 42.12, p = .001, \eta^2 = .25$. The means and standard deviations for each condition without inclusion of the covariates are presented in Table 2.

The fourth hypothesis predicted that VRI would moderate the effects of viewing disgust messages on message-relevant thoughts about the message such that those with high VRI who view disgust messages would report the lowest number of message-relevant thoughts relative to those with low VRI or those in the non-disgust message condition. Total message relevant thoughts for each participant were analyzed using an analysis of variance. The coding scheme and frequency of each type of thoughts for

thought-listing is presented in Table 4. Results were not consistent with this prediction, $F(1, 128) = .099, p = .75, \eta^2 = .001$.

The final hypothesis predicted that there would be a direct, negative effect of VRI on attitudes and intentions such that there would be a negative association between VRI and attitude and intention. Research questions 1 and 2 addressed the role of message in attitudes and behaviors. An analysis of co-variance was conducted with message condition and VRI as independent variables, attitudes or behavioral intentions as dependent variable, and pre-test attitudes included as a covariate. Results were not consistent with predicted interaction for attitudes, $F(1, 123) = .001, p = .98, \eta^2 = .001$, or intentions $F(1, 123) = .36, p = .54, \eta^2 = .003$. For attitudes, the main effect for disgust message was significant, $F(1, 123) = 5.47, p = .021, \eta^2 = .042$, as was the main effect for VRI, $F(1, 123) = 6.85, p = .01, \eta^2 = .052$. These data indicate that for those who received the disgust message ($M = 4.28, SE = .08$), attitudes toward vegetarianism were more positive post-message than those who received the non-disgust message ($M = 4.03, SE = .08$). The covariate, pretest attitudes, was significant, $F(1, 123) = 53.15, p = .001, \eta^2 = .30$. The main effect for disgust message on behavioral intention was significant, [$F(1, 123) = 5.01, p = .027, \eta^2 = .039$]. The main effect for VRI was not significant, [$F(1, 123) = .124, p = .267, \eta^2 = .010$]. The covariates, behavioral intention pre-test [$F(1, 123) = 176.86, p = .001, \eta^2 = .59$] and core disgust (D1) [$F(1, 123) = 10.20, p = .002, \eta^2 = .077$] were significant. These data indicate that for those who received the disgust message ($M = 2.27, SE = .09$), intention to become vegetarian were stronger post-message than those who received the non-disgust message ($M = 1.99, SE = .09$). The means and standard deviations for each condition are presented in Table 2.

Discussion

Previous research examining negative emotion in context of persuasive attempts has largely focused on the role of fear in persuasion. This research has shown the use of negative emotions to be useful in persuasive attempts, in some cases, though many negative emotions have not been thoroughly tested. The aim of this study was to further examine the role that disgust appeals play in persuasive attempts.

First, this study examined whether messages designed to elicit disgust were indeed perceived as more disgusting than those designed not to elicit disgust. The hypothesis predicted that viewing messages designed to elicit disgust would result in higher perceived disgust than viewing non-disgust messages. The data were consistent with this prediction, showing that viewing animal rights messages such as those used in this study do evoke disgust in viewers. A second part of this hypothesis also predicted that people viewing messages designed to elicit disgust would report higher perceived sadness and guilt than people viewing messages not designed to elicit disgust. Data were inconsistent with both of these predictions. Sadness was in fact more positively related to viewing the non-disgust message than the disgust message, while guilt was not significant for either condition. Perceived disgust was greater than other negative emotions. These data suggest that disgust is the primary emotion elicited by these messages, leading to additional tests about how disgust influences message response.

It is possible that the findings regarding sadness may be explained by the some characteristics of the messages used in this study. In terms of sadness, the non-disgust video employed images of animals typically used for food, such as chickens and cows. These animals were shown in happy, natural settings, while the narration discussed meat-

processing in a relatively non-emotional, matter-of-fact manner. The contrast of live, happy livestock coupled with the presentation of facts of meat-processing may explain the elicitation of sadness in viewers. Guilt may not have been elicited in viewers because of the subject of these messages. Though every participant reported eating meat, it is likely that they do not feel personally responsible for the actual slaughter process and do not connect meat consumption directly with the process.

The second hypothesis predicted that value-relevant involvement would moderate the effects of viewing the disgust messages such that participants with high VRI viewing the disgust message would report the greatest perceived disgust relative to those with low VRI or those in the non-disgust message condition. Data were inconsistent with predictions. VRI did not influence the relationship between message content and perceptions of disgust. The disgust sensitivity covariate, core disgust (D1), was significant. As core disgust sensitivity increased, so did perceived disgust with the message.

The second hypothesis also predicted that VRI would moderate the effects of viewing disgust messages on sadness and guilt such that as value-relevant involvement increased, so would perceptions of sadness and guilt. Data were inconsistent with this hypothesis, such that VRI had no significant influence on the relationship between message content and perceived guilt or sadness. These findings may be explained by the value measured as part of VRI: Being kind to food animals. It is possible that this value is not central to many people's core values. Using a different value may have changed this relationship.

The main effect for VRI on perceived disgust indicates that those who were highly involved in the issue were more disgusted. Additionally, for sadness, the disgust sensitivity covariate, animal-reminder disgust (D2), was significant. For guilt, the disgust sensitivity covariate contamination disgust (D3) was significant, indicating that people high on contamination disgust (D3) felt significantly more guilt after viewing the disgust message. These results indicate that disgust sensitivity is a covariate that does influence perceptions of disgust and sadness/guilt, and warrants additional tests of this relationship.

The third prediction for this study hypothesized that participants high in VRI would have stronger motivation to avoid the disgust-eliciting message relative to those with lower VRI or those in the non-disgust eliciting message condition. There was a main effect for disgust message on message avoidance, consistent with the CFM's predictions that people in the disgust condition would report trying to avoid the message more than those in the non-disgust condition. This is consistent with the CFM; disgust is an avoidant emotion, so it follows that people viewing disgust-evoking messages would try to avoid the message.

The fourth hypothesis predicted that VRI would moderate the effects of viewing disgust messages on negative thoughts about the message such that those with high VRI who view disgust messages would report the lowest number of message-relevant thoughts relative to those with low VRI or those in the non-disgust message condition. Results were not consistent with predictions, showing that people high in VRI did not report the lowest number of message-relevant thoughts relative to those with low VRI. There was not a main effect for viewing disgust messages and number of message-relevant thoughts, which is inconsistent with predictions of the CFM.

The final hypothesis predicted that there would be a direct, negative effect of VRI on attitudes and intentions. Data were inconsistent with predictions regarding both attitude and intention change, but there were main effects for VRI on attitude, for disgust message on attitude, for VRI on behavioral intention, and for disgust message on behavioral intention. Though VRI was not a moderator for the influence of messages on attitudes or behavior, these results show that disgust-provoking images do have some effect on attitudes and intentions. This is promising because it means disgust appeals can be used to influence peoples' attitudes and their behaviors.

Limitations

This study had a few limitations to be addressed. First: the nature of the messages. The video used in the disgust condition was edited from an intact video that was fairly prevalent on the internet in the early 2000s. Though this video was carefully edited to exclude any references to PETA, it is possible that it was still recognized by some participants. Random assignment to conditions should have eliminated any possible effects from familiarity with the video and when asked, only one participant reported recognizing PETA as the message source. The video used in the non-disgust condition had limitations as well. This video was created using footage of animals in captivity that were happy and well taken care of, such as cows grazing in an open field. This message was designed to be non-emotional, but the contrast of happy images with narration discussing meat-processing elicited sadness in viewers. This was an unintended effect, and therefore a limitation of this study; to deal with this issue, sadness was included as a covariate and in the analysis where appropriate, but did not have a significant effect on either the avoidance, attitudinal, or behavioral intent outcomes. Furthermore, the

messages differed significantly on the degree to which they elicited disgust, providing additional confidence in the data.

A second limitation of this study was the value used for value-relevant involvement. Prior to designing the study, a literature search was conducted to help determine which value might be the most salient in this issue. Kindness to food animals, derived from the existing typologies of values seemed like the best choice given the subject of the video, but it is possible that this is something that many people do not consider a core value, however, the mean for the scale across conditions was above the midpoint. Other possible values might be important when viewing animal rights videos, such as kindness to animals. Using a different value may have changed the results of value-relevant involvement as a moderator and future research should consider this possibility. Additionally, because of the values associated with animal rights, the topic used to test for the effects of disgust may have limited (or heightened) the overall effects of this study. That is, these findings may not translate to other topics—something that should be explored with further research.

Another limitation of this study was the population. The sample in this study was college students. People in older age groups may have a different awareness of animal rights issues because they may pay more or less attention to media and have a different awareness of this topic. This could lead to potential differences in reported attitudes prior to viewing the video, as well as different changes in attitude and behavioral intention after viewing the videos than college students. Additionally, people in older age groups may have a better understanding of the environmental and health benefits of vegetarianism, another factor that may lead to differences in changes in attitudes and/or

behaviors. Alternatively, college students may place animal rights as a priority more or less than people in other demographic groups, also influencing the overall impact of these types of messages. Therefore, the sample used here limits the study's generalizability as the findings may only apply to college students.

The methods used for analyzing these data present a further limitation. ANCOVA is generally not useful for measuring interactions but was used for the present study in order to keep the analysis procedures relatively simple. In order to use ANCOVA, a median split was conducted on the VRI scale and restricted the variance in VRI. In further tests of these predictions, mean centered multiple regression will be used with scaled VRI to see if an interaction is present.

Additionally, one of the methods used in this study may have been a limitation. This study used a pre and post-test for attitudes and intentions, using the same questions for both. This may have caused testing effects, in which participants were familiar with the questions and answered them in the post-test as they answered them in the pre-test. This study also employed an on-line survey design. Because of this, participants could fast forward through the video if they wanted. However, judging by the thought-listing, most participants did finish the videos. This design still serves as a potential limitation of the study.

Directions for Future Research

The findings of this study indicate that disgust-provoking images are persuasive, but that value-relevant involvement (about the value of kindness to food animals) is not a moderator for this effect. Given this, future persuasive campaigns, such as health, animal-rights or environmental campaigns, could employ disgust-provoking images to

successfully persuade audiences to stay away from the targeted objects or behaviors.

Though this study focused on promoting vegetarianism, other types of campaigns might benefit from using similar disgust appeals, but this remains an empirical question to be answered by future research.

Though there was not a significant interaction effect for VRI on message condition, the logic of value-relevant involvement still holds. It is possible that this study did not use a value of central relevance to many people. Therefore, further studies should focus on finding which values are of relevance to vegetarian behaviors in order to better determine the role that VRI plays in disgust appeals.

Another further direction for this study may be to use text instead of pictorial representations of this same material. If the text evoked disgust in readers, the same predictions of the CFM should hold. It would be interesting to see if elicited disgust is stronger for text versus pictorial representations. The same tests could be used to see if disgust is elicited more strongly for still pictures versus video, or for video including sound versus video not including sound.

This study could also be extended to different populations to see if these same findings generalize to other groups. As mentioned, this study used a sample consisting of only college students. Extending this same study to a more general population consisting of different age ranges, different ethnic groups, and different education levels could help to find if disgust appeals are persuasive for different populations. This would be helpful in understanding the generalizability of these findings.

Finally, this study focused on only the first four predictions of the CFM. In order to simplify this study, some aspects of the CFM were not examined. Future studies

should incorporate each of the CFM's predictions. This would help to more thoroughly examine the predictions of the model, as well as to examine more aspects of disgust appeals. The aspects of the CFM not included in this study are motivated attention and processing, the receiver's expectation of the message providing goal-relevant information, the receiver's ability to process the message, and the type of processing uses (central or peripheral). A further test of this model should include these other aspects to further understand the persuasive potential of disgust appeals.

Endnotes

¹ It is acknowledged that splitting continuous scales in this fashion artificially restricts variance in the measure. It was done in order to simplify the analysis and reporting, but data will be reanalyzed using hierarchical linear regression prior to publication.

² Thoughts were also coded for valence (positive and negative), source relevance, irrelevance, and for emotion (positive and negative).

Table 1

Means, standard deviations, and alphas for all scales across conditions

Scale	Mean	SD	α
Core Disgust (D1)	3.30	0.64	0.79
Animal-Reminder Disgust (D2)	3.31	0.80	0.75
Contamination Disgust (D3)	2.33	0.79	0.65
Behavioral Intention Pre-Test	1.74	0.85	0.95
Attitude Pre-Test	3.96	0.60	0.81
VRI	3.41	0.77	0.81
Disgust	3.70	1.10	0.95
Sadness	2.45	0.60	0.81
Guilt	2.96	0.87	0.92
Avoidance	4.44	2.43	0.81
Attitude Post-Test	2.19	1.13	0.92
Behavioral Intention Post-Test	2.18	1.10	0.97

Table 2

Means and standard deviations for dependent variables the disgust and non-disgust message conditions for participants with high and low VRI adjusted for inclusion of covariates.

	High VRI		Low VRI	
	Non-Disgust	Disgust	Non-Disgust	Disgust
Perceived Disgust	$M = 3.64$ $SE = .21$ $95\% CI = 3.22-4.07$	$M = 4.46$ $SE = .20$ $95\% CI = 4.06-4.86$	$M = 2.99$ $SE = .14$ $95\% CI = 2.71-3.27$	$M = 3.95$ $SE = .14$ $95\% CI = 3.67-4.22$
Perceived Sadness	$M = 2.60$ $SE = .13$ $95\% CI = 2.34-2.86$	$M = 2.45$ $SE = .13$ $95\% CI = 2.19-2.71$	$M = 2.45$ $SE = .10$ $95\% CI = 2.26-2.64$	$M = 2.55$ $SE = .09$ $95\% CI = 2.37-2.72$
Perceived Guilt	$M = 2.84$ $SE = .17$ $95\% CI = 2.51-3.18$	$M = 2.82$ $SE = .17$ $95\% CI = 2.48-3.15$	$M = 3.11$ $SE = .12$ $95\% CI = 2.87-3.35$	$M = 2.92$ $SE = .11$ $95\% CI = 2.70-3.14$
Message Avoidance	$M = 3.00$ $SE = .17$ $95\% CI = 2.66-3.35$	$M = 3.33$ $SE = .16$ $95\% CI = 3.01-3.65$	$M = 2.64$ $SE = .12$ $95\% CI = 2.41-2.87$	$M = 3.35$ $SE = .12$ $95\% CI = 3.12-3.57$
Attitude Post	$M = 4.19$ $SE = .14$ $95\% CI = 3.93-4.30$	$M = 4.44$ $SE = .13$ $95\% CI = 4.19-4.69$	$M = 3.87$ $SE = .09$ $95\% CI = 3.70-4.05$	$M = 4.13$ $SE = .09$ $95\% CI = 3.96-4.30$
Behavioral Intention Post	$M = 2.10$ $SE = .15$ $95\% CI = 1.80-2.41$	$M = 2.31$ $SE = .14$ $95\% CI = 2.02-2.59$	$M = 1.88$ $SE = .10$ $95\% CI = 1.68-2.08$	$M = 2.24$ $SE = .10$ $95\% CI = 2.04-2.44$

Table 3

Correlations Among Message Condition, VRI, Attitude, and Behavioral Intention Variables

	Message Condition	Median Split VRI	VRI	Attitude Pre-Test	Attitude Post-Test	Behavioral Intention Pre-Test	Behavioral Intention Post-Test
Message Condition	$r = 1.00$	$r = .02$ $p = .79$	$r = -.067$ $p = .35$	$r = -.063$ $p = .38$	$r = .178$ $p = .012$	$r = .065$ $p = .36$	$R = .214$ $p = .002$
Median Split VRI	$r = .024$ $p = .791$	$r = 1.00$	$r = .885$ $p = .001$	$r = .470$ $p = .001$	$r = .453$ $p = .001$	$r = .221$ $p = .012$	$R = .256$ $p = .003$
VRI	$r = -.07$ $p = .348$	$r = .885$ $p = .001$	$r = 1.00$	$r = .425$ $p = .001$	$r = .369$ $p = .001$	$r = .178$ $p = .012$	$R = .183$ $p = .010$
Attitude Pre-Test	$r = -.063$ $p = .381$	$r = .470$ $p = .001$	$r = .425$ $p = .001$	$r = 1.00$	$r = .618$ $p = .001$	$r = .217$ $p = .002$	$R = .261$ $p = .002$
Attitude Post-Test	$r = .178$ $p = .012$	$r = .453$ $p = .001$	$r = .369$ $p = .001$	$r = .618$ $p = .001$	$r = 1.00$	$r = .135$ $p = .057$	$R = .320$ $p = .001$
Behavioral Intention Pre-Test	$r = .065$ $p = .361$	$r = .221$ $p = .012$	$r = .178$ $p = .012$	$r = .217$ $p = .002$	$r = .135$ $p = .057$	$r = 1.00$	$R = .320$ $p = .001$
Behavioral Intention Post-Test	$r = .214$ $p = .002$	$r = .256$ $p = .003$	$r = .183$ $p = .010$	$r = .261$ $p = .001$	$r = .320$ $p = .001$	$r = .779$ $p = .001$	$R = 1.00$

Table 4

Coding Scheme and Frequency of Each Type of Thought

Type of Thought	Frequency of Thought for Disgust Condition	Frequency of Thought for Non-disgust Condition
No thought, Irrelevant thought	2	9
Message-relevant positive thought	35	20
Message-relevant negative thought	111	57
Other	12	19

APPENDIX A

Attitude and Behavioral Intention Items

This measure will use 4-item semantic differential scales with a 5-point response format. Higher scores will represent more positive attitudes/greater intention to become vegetarian. The scale items are listed below:

Attitude Items

I think being kind to food animals is:

Extremely unfavorable : ____ : ____ : ____ : ____ : ____ : Extremely favorable

I think being kind to food animals is:

Extremely bad: ____ : ____ : ____ : ____ : ____ : Extremely good

I think being kind to food animals is:

Extremely unbeneficial: ____ : ____ : ____ : ____ : ____ : Extremely beneficial

I think being kind to food animals is:

Extremely negative: ____ : ____ : ____ : ____ : ____ : Extremely positive

Behavioral Intention Items

I intend to become vegetarian:

Extremely unlikely : ____ : ____ : ____ : ____ : ____ : Extremely likely

I mean to become vegetarian:

Extremely unlikely : ____ : ____ : ____ : ____ : ____ : Extremely likely

I plan to become vegetarian:

Extremely unlikely : ____ : ____ : ____ : ____ : ____ : Extremely likely

I will make an effort to eat a vegetarian diet:

Extremely unlikely : ____ : ____ : ____ : ____ : ____ : Extremely likely

APPENDIX A (cont.)

Additional Item:

I am currently a vegetarian/vegan

Yes :__:

No :__:

APPENDIX B

Value Relevant Involvement Items

This measure will include 4 Likert-type items with a 5-point response format. Higher scores will represent higher VRI. The scale items are listed below.

Please consider the topic of animal rights and how it fits in with your own values.

Please answer each of the following questions:

Being kind to food animals is an important issue to me:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Being kind to food animals is an issue I care about:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

To me, being kind to food animals is a trivial issue:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

I really don't care about the issue of being kind to food animals:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

APPENDIX C

Negative Emotion Items

Each measure will involve 5 5-point Likert-type items. Higher scores will represent stronger emotions experienced. The scale items are listed below:

Please answer the following:

While viewing the message, I felt:

Disgusted

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Sickened

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Guilty

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

At fault for the images I was seeing

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Sad

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Disheartened

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

APPENDIX D

Message avoidance items

Each item will include 5 5-point Likert-type items. Higher scores will indicate greater message avoidance. The scale items are listed below.

Please answer the following:

I would prefer not to see this video again.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

I do not want anymore information about animal rights or vegetarianism.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

During this message, I tried not to look at all or some of the images.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

During this message, I tried not to read all or some of the words shown.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

During this message, I tried not to listen to all or some of the words being said:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

APPENDIX E

Thought-listing items

Please list any thoughts or feelings you had while viewing this video:

- | | |
|----|-----|
| 1. | 6. |
| 2. | 7. |
| 3. | 8. |
| 4. | 9. |
| 5. | 10. |

APPENDIX F

Disgust Sensitivity Items

This measure will include 25 Likert-type items with a 5-point response format.

Higher scores will represent higher disgust-sensitivity. The scale items are listed below.

Please indicate how much you agree with each of the following statements, or how true it is about you. Please write a number (1-5) to indicate your answer:

- 1 = Strongly disagree (very untrue about me)
- 2 = Mildly disagree (somewhat untrue about me)
- 3 = Neither agree nor disagree
- 4 = Mildly agree (somewhat true about me)
- 5 = Strongly agree (very true about me)

- ___ 1. I might be willing to try eating monkey meat, under some circumstances.
- ___ 2. It would bother me to be in a science class, and to see a human hand preserved in a jar.
- ___ 3. It bothers me to hear someone clear a throat full of mucous.
- ___ 4. I never let any part of my body touch the toilet seat in public restrooms.
- ___ 5. I would go out of my way to avoid walking through a graveyard.
- ___ 6. Seeing a cockroach in someone else's house doesn't bother me.
- ___ 7. It would bother me tremendously to touch a dead body.
- ___ 8. If I see someone vomit, it makes me sick to my stomach.
- ___ 9. I probably would not go to my favorite restaurant if I found out that the cook had a cold.
- ___ 10. It would not upset me at all to watch a person with a glass eye take the eye out of the socket.
- ___ 11. It would bother me to see a rat run across my path in a park.
- ___ 12. I would rather eat a piece of fruit than a piece of paper
- ___ 13. Even if I was hungry, I would not drink a bowl of my favorite soup if it had been stirred by a used but thoroughly washed flyswatter.
- ___ 14. It would bother me to sleep in a nice hotel room if I knew that a man had died of a heart attack in that room the night before.

How disgusting would you find each of the following experiences? Please write a number (1-5) to indicate your answer:

- 1 = Not disgusting at all
- 2 = Slightly disgusting
- 3 = Moderately disgusting
- 4 = Very disgusting
- 5 = Extremely disgusting

- ___ 15. You see maggots on a piece of meat in an outdoor garbage pail.
- ___ 16. You see a person eating an apple with a knife and fork
- ___ 17. While you are walking through a tunnel under a railroad track, you smell urine.
- ___ 18. You take a sip of soda, and then realize that you drank from the glass that an acquaintance of yours had been drinking from.
- ___ 19. Your friend's pet cat dies, and you have to pick up the dead body with your bare hands.
- ___ 20. You see someone put ketchup on vanilla ice cream, and eat it.
- ___ 21. You see a man with his intestines exposed after an accident.
- ___ 22. You discover that a friend of yours changes underwear only once a week.
- ___ 23. A friend offers you a piece of chocolate shaped like dog-doo.
- ___ 24. You accidentally touch the ashes of a person who has been cremated.
- ___ 25. You are about to drink a glass of milk when you smell that it is spoiled.
- ___ 26. As part of a sex education class, you are required to inflate a new unlubricated condom, using your mouth.
- ___ 27. You are walking barefoot on concrete, and you step on an earthworm.

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