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The present research focused on appraisal theories and emotional responses to art. Using a within-subjects design, Study 1 explored the role of value incongruence, perceived intention, and unpleasantness in the appraisal structures of anger and disgust. In addition, rejection was assessed as a possible action tendency of these emotions. Multilevel modeling analyses revealed that these appraisals were indeed related to the specified emotions. Furthermore, it was found that anger and disgust predicted people's rejection of statements endorsing the controversial artwork. This suggests that rejection is a possible action tendency related to anger and disgust. Study 2 used a behavioral measure to strengthen the relationship between emotions and behavior suggested by Study 1. Results of Study 2 indicated that anger and disgust significantly predicted people's acceptance or rejection of a postcard depicting *Piss Christ*, a controversial photograph. These results suggest that rejection is a legitimate action associated with negative emotions.

EXPLORING REJECTION AS AN ACTION TENDENCY OF NEGATIVE AESTHETIC EMOTIONS

by

Jessica Marie Cooper

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Approved by

_____
Committee Chair

To my mother, Lee Vonda, and my fiancé, Lucas, for your undying love and support throughout my educational career. Without you, I would not be where I am today.

APPROVAL PAGE

This thesis has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

Committee Chair _____
Douglas W. Levine

Committee Members _____
Paul J. Silvia

_____
Stuart Marcovitch

_____10 May 2007_____
Date of Acceptance by Committee

_____10 May 2007_____
Date of Final Oral Examination

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CHAPTER I

INTRODUCTION

It would be no easy feat to catalogue all the emotions that a person experiences in an average day. On any given day, a person can probably easily think of several emotions he or she felt from the time they woke up until they went to sleep at night. While that person may have felt generally happy all day, he or she probably encountered several things that evoked different emotional responses, however fleeting they might have been. For example, a graduate student might feel anxiety over writing his or her thesis; parents might get angry when their child acts out. Everyone experiences emotions to some degree, no question about it. What is questionable, though, is what brings about these emotions and why a person experiences one emotion over another. Understanding people's emotional responses could provide valuable insight to the study of human behavior, particularly how emotions evoke behavior, and one current avenue for studying emotions is through the use of aesthetics.

People often perceive art in a positive light, giving way to emotions such as happiness and peacefulness. In contrast, art can also induce negative states, such as when the emotions of anger and disgust are experienced. It is likely that responses akin to anger and disgust were the driving force behind the political "Culture War" against the National Endowment for the Arts (NEA) that pervaded the early 1990s (Garrett, 1995). This Culture War, dubbed so by right-wing activist Pat Buchanan (1992), began in

response to artwork by various artists that depicted themes such as homoerotic nudes and religious figures submerged in urine (Political Research Associates, n.d.; The Tech, 1990; Van Camp, 1997). What started as protesting and vandalism ended in lawsuits (Institute for First Amendment Studies, Inc., 1998), congressional hearings (Van Camp, 1997), and ultimately a cut in funding for the NEA (Garret, 1995; Political, n.d.).

While it is reasonable to assume that some people might take offense to such art, it is more difficult to comprehend what exactly it was that motivated the public and legislators to infringe upon the First Amendment rights of these artists and others whose work was repressed during the Culture War (see Political, n.d. for further discussion). The "letter to the NEA expressing outrage" over the "morally reprehensible trash" (Political, n.d., p. 1) is an indication that emotions, particularly anger and disgust, could be the catalysts behind the aforementioned behaviors.

To understand what role emotions such as anger and disgust could play in human behavior, it is necessary to consider what is known about emotions and cognition. A review of the literature on aesthetic emotions provides a framework from which to further explore anger and disgust. The components of these emotions will then suggest a means by which to investigate how these emotions relate to behavior.

CHAPTER II

THEORIES OF AESTHETIC EMOTIONS

Berlyne's Collative-Arousal Theory

Berlyne's collative-arousal theory posits that two arousal systems dictate aesthetic emotions (Berlyne, 1974): a positive reward system and a negative aversion system. These systems are stimulated through collative variables, primarily complexity, novelty, uncertainty, and conflict. These variables are considered collative in that they involve comparing information from multiple sources to determine the level of arousal they will initiate. For example, a novel stimulus would be contrasted with similar stimuli in one's informational repertoire to determine an appropriate response, or the appropriate level of arousal. Collative variables are also considered to objective features of a stimulus object. Thus, artistic works, according to Berlyne, should elicit a stable, predictable response of arousal (Silvia, 2005a, 2005b).

Collative variables are thought to affect arousal when they are at the extremes; low or high levels of complexity, novelty, uncertainty, and conflict are what activate the arousal system. The arousal system is considered to follow an inverted-U function. As arousal increases, the reward system is activated, reflecting positive affect. However, after arousal reaches and surpasses an optimal level, the aversion system is stimulated, reflecting negative affect (Silvia, 2005b; Silvia & Brown, in press). What this indicates for aesthetics is that if an artwork is perceived as too complex, novel, uncertain, or

conflicting, it will elicit negative emotions. Furthermore, if an artwork is considered to be too simplistic, familiar, certain, or consistent, the arousal system is unlikely to be stimulated, resulting in indifference.

While Berlyne's theory once was the mainstream theory of aesthetics, it has since been discounted in the advent of the cognitive revolution in psychology. Arousal is no longer considered to be a sufficient basis for emotion (Silvia, 2005b). In addition, the definitions by which Berlyne describe the arousal systems indicate a point of weakness in his theory: emotions are considered to be either positive or negative, with no variation (Silvia & Brown, in press). This means there is no manner by which to distinguish happiness from relief, or anger from disgust, for example. Because Berlyne's theory assumes that stimuli are constituted of stable, objective features, it is also unable to account for individual differences in emotions to the same stimuli, or different individual emotions to the same stimuli across time (Silvia, 2005a). In consideration of these limitations, Berlyne's collative-arousal theory has been discredited and virtually abandoned. Theories that incorporate cognitive components have thus taken the stage in explaining aesthetic emotions.

Martindale's Prototypicality Theory

Prototypicality influences preference for a variety of stimuli. The most commonly known example of this is the effect that averaging facial features had on people's perception of attractiveness (Halberstadt, 2006). The more the stimulus face was averaged, the more attractive it was rated. Winkielman, Halberstadt, Fazendeiro, and Catty (2006) were able to show that prototypicality increased preference for random dot

patterns and common geometric patterns. Halberstadt (2006) also reported that prototypicality effects were found for animals as well as artifacts. This tendency for people to prefer prototypical stimuli has primarily been attributed to subjective familiarity of objects.

Martindale proposed that preferences for art also are influenced by prototypicality. Evidence in favor of this theory was found in preferences of not only the object of the artistic work, but of the style of the work as well (Farkas, 2002; Martindale, Moore, & West, 1988). Furthermore, ease of processing has been found to mediate this relationship between typicality and preferences (Winkielman et al., 2006). Given these findings, the inverse is also supported: objects perceived as atypical and difficult to process are not preferred. While there is significant support for prototypicality and preference theories, it is unlikely that these theories can explain emotion. Preference (or not) is but one response; emotions, on the other hand, are numerous and multifaceted. Emotional response, then, cannot be formulated solely on the variables put forth by Martindale. It is also unlikely that prototypically offensive art would be preferred over other works, no matter how "typical" they are (Silvia & Brown, in press). In light of these limitations, Martindale's theory should also be considered as an insufficient theory for explaining aesthetic emotions.

Appraisal Theories as Componential Models of Emotion

Appraisal theories are becoming the primary theoretical guide in the study of emotional responses to aesthetics. The basic premise of appraisal theories is that events or objects themselves do not cause emotions. Rather, how the events or objects (in this

case, aesthetic works) are evaluated (or appraised) determine a person's emotional response (Roseman & Smith, 2001). This clearly cognitive approach to emotions seems obvious to many researchers today; however, in the context of the behavioral theories of arousal that dominated psychology for many years, this was a difficult concept to grasp. Magda Arnold is often attributed as offering the first insight to an appraisal approach to emotions, while still relying on a model of arousal (Arnold, 1960). Arnold theorized that the first step to emotions was an appraisal of whether an object or event would help or harm the self. The arousal initiated by this appraisal would thus dictate emotion and behavior. Lazarus furthered this concept of appraisal with the contention that there were two types of appraisals: a primary appraisal of the consequences of a stimulus to the self, and a secondary appraisal of one's coping ability of this consequence (Lazarus, 1991). The works of these theorists allude to the idea that dominates emotion psychology today: appraisal theories are componential models of emotions (Kuppens, Mechelen, Smits, & De Boeck, 2003). A componential model indicates that an emotion is comprised of a unique set of components, and it is by these components that one is able to differentiate between emotions.

Appraisal theories reflect a componential model in that each emotion is considered to be comprised of a distinct appraisal structure. This structure, in turn, reflects a specific set of evaluations that enables emotions to be differentiated from one another (Kuppens et al., 2003; Silvia, 2005b; Silvia & Brown, in press). Common appraisal components involve evaluations of whether a stimulus is relevant and congruent to one's goals, one's ability to cope with the stimulus, attributions of causality and

responsibility for the stimulus, and evaluation of the how the stimulus compares with one's morals (Silvia, 2005a). (The basis for these common components can clearly be seen in the early theories of Arnold and Lazarus.) It is important to note that emotions that initially appear to be inconsistent or opposite with one another often have similar appraisal structures. For instance, research indicates that the appraisal structure for happiness is comprised of goal relevance and goal congruence (Silvia, 2005a). The appraisal structure for sadness also incorporates these appraisals, reflecting goal relevance, goal incongruence, low coping potential, and low expectancy for future change (Roseman & Smith, 2001). It is the differences in components of an appraisal structure, then, that allow for distinction between emotions.

Components of emotions are not limited to those of the appraisal structures; action tendencies, or the behavioral consequences of emotions, are considered to be central to understanding emotions as well (Kuppens et al., 2003). Nico Frijda proffered that it is not arousal that dictates emotion. Instead, emotions (as the result of appraisals) generate arousal and motivate behavior (Frijda, 2007). Therefore, not only should emotions be considered in terms of their precursors, but also in terms of their outcomes. It is important to note, however that an actual behavior does not have to be enacted to reflect an action tendency. Rather, action readiness, or the desire to engage in a behavior, is also central to the concept of behavioral consequences of emotions. Action readiness reflects a motivational state in which there is an urge to act. This urge does not have to be fulfilled for it to be relevant to emotions. Thus, action readiness captures potential behaviors, whether desirable or undesirable, that reflect the underlying emotion. In its

strongest form, Frijda's theory would indicate that appraisals cause emotions, which then cause behavior (Frijda, Kuipers, & ter Schure, 1989).

Appraisal theories, while still often incorporating components of arousal theories, are not limited by the problems that plague Berlyne's theory. Because appraisal theories are based on the *subjective* appraisal of a stimulus, they are able to explain why different people exhibit different emotions to same stimuli. Quite simply, it is because people *appraise the stimulus differently*. In addition, the same person can appraise a stimulus differently across contexts, thereby accounting for why people experience different emotions to the same stimulus (Silvia, 2005b). A logical extension of these assumptions is that in situations where the same appraisal pattern is exhibited, the same emotion will occur (Roseman & Smith, 2001). These core assumptions of appraisal theories are also their core strengths. They provide a means by which to understand how emotions occur, what emotions consist of, and why extensive variability in emotions is expressed between and within individuals.

CHAPTER III

APPRAISAL STRUCTURES AND ACTION TENDENCIES OF ANGER AND DISGUST

Anger

Anger is a common emotion that can be difficult to overcome and even harder to forget. People can generally remember the last thing that made them really angry very easily, while it might take some thought for them to muster up the last time they were truly awed by something. While anger is a normal, even functional human emotion, it can also be destructive and misplaced. The complex nature of anger has been researched from many perspectives, such as in terms of its association with aggressive behavior, psychological disorders, and emotion states in general. In studies involving retrospective analyses of events, Kuppens and colleagues (2003) found that anger was associated with frustration as a result of perceived goal blocking and other accountability, or the notion that someone else was responsible for the event. Similarly, Silvia and Brown (in press) studied emotional responses to pictures in relation to appraisals of goal or value incongruence and of the intentions of the artist regarding these goals (in their study, Silvia and Brown used goal and value incongruence interchangeably - for the purpose of the present research, the focus is on value incongruence). Results of this study indicated that the more incongruent with their values a picture was perceived to be, the more anger people reported experiencing. Furthermore, anger increased when people felt that the artist was intentionally trying to offend others. The combined results of these studies

indicate that value incongruence and intentionality are key components of the appraisal structure for anger. These findings are also consistent with Frijda and his colleagues' (1989) work on the appraisal profile of anger, which also used assessments of retrospective events.

Few studies have been conducted to ascertain what action tendencies could result from anger. Frijda and colleagues (1989), in addition to mapping out appraisal profiles of numerous emotions, mapped out action readiness profiles of emotions. With respect to anger, they found tendencies such as "in command – don't want," "moving against," and "attending" to be relevant components of readiness. *In command – don't want* referred to the appraisal that they were in control of a situation or event they did not want to occur. *Moving against* reflected an antagonistic feeling of boiling inwardly, and also a reactant tendency in which one wanted to act out to curb the situation. *Attending* simply referred to the action of paying attention to the situation. The pattern of action readiness and tendency observed for anger is thought to be unique, in that no other emotion is characterized by exactly the same tendencies. What this indicates is that the more of these specific readiness factors that are observed, the more likely it is that a person is angry. This leads to the conclusion that one should be able to predict emotions based on action tendencies or appraisals; this is, in fact, what Frijda and colleagues found.

In their study, Kuppens and colleagues (2003) did measure an action tendency relevant to the retrospective events reported by the people in the study. Specifically, when recalling an event, people were asked about the extent to which they "wanted (did not want) to express" opposition (p. 262). While this action tendency was found to be

related to anger, when subjects were asked if they "wanted (did not want) to do something about the situation" (p. 257), no relationship to anger was found. This indicates that measures of action tendencies may need to be specific, referring more to a specific behavior, than a general ambiguous action. This is an intuitive finding in that behaviors that are strongly linked with emotions (meaning that they would be characterized with more components of action readiness/tendency) would most likely be more direct and unambiguous.

Disgust

Disgust is an emotion that, while extensively used by people across cultures, has been neglected in much of the literature on emotions. The traditional definition of disgust is a response "to the actual or threatened incorporation of contaminated or unwanted stimuli" (Olatunji & Sawchuk, 2005, p. 935). The domains of disgust are centered around core and animal-reminder disgust, and socio-moral disgust. Core and animal-reminder disgust is a recoil response to contaminated food, bodily waste, and animals. Socio-moral disgust encompasses an attempt to protect one's "soul" and "personal territory and integrity" (p. 942). It is this latter form of disgust that has been used in much of the research in aesthetic emotions (e.g., Silvia & Brown, in press).

In the same study where the appraisal structure of anger was explored by Silvia and Brown (in press), so too was the structure for disgust. Their findings suggested that the core components in the appraisal structure of disgust were value incongruence and intrinsic unpleasantness. Intrinsic unpleasantness reflected the extent to which an object is inherently aversive, rather than pleasant (Scherer, 2001). Notice that disgust shares

with anger the structural component of value incongruence. This indicates how similar appraisal structures can be found across emotions, but also how the differences in these structures allow for the differentiation of emotions. Even when anger is controlled for in analyzing the appraisal structure of disgust, and vice-versa, value incongruence continues to contribute separately to these emotions.

Frijda and colleagues (1989) also studied the appraisal and action tendency profiles for disgust. The findings of Silvia and Brown (in press) are consistent with the results of this early study, which found that "unpleasantness" and "other agency" were related appraisal components of disgust. Pleasantness, naturally, was inversely related to disgust, whereas perceiving someone else as being the source of this unpleasantness (other agency) was positively related to disgust. Disgust also shared one component of action readiness with anger, and that was the feeling that oneself was in command of an event they did not want to occur. Anger and disgust diverged in that where anger was related to moving against, disgust was related to "moving away," or avoidance. This finding is consistent with the traditional definition of disgust, which implies that one would seek to avoid situations or objects they fear might contaminate them.

Hostility

While the traditional definition of disgust once had an evolutionarily relevant connotation, more recent conceptions of disgust do not necessarily reflect a fear of contamination. Rather, disgust is more often used as an expression of anger (Nabi, 2002). Theoretically, anger and disgust have been categorized along with contempt under what is known as the *hostility triad* (Izard & Ackerman, 2000). While still

considered distinct emotions, the three consistently co-occur. Thus, it is reasonable to expect that anger and disgust will share at least one appraisal component at any given time. The relationship among these emotions is also reflected in the Contempt-Anger-Disgust (CAD) triad hypothesis; the CAD triad hypothesis relates each of these emotions to a moral domain, the violation of which will then lead to the respective emotion (Rozin, Lowery, Imada & Hardt, 1999). The placement of these three emotions under one umbrella term of hostility is consistent with what appraisal theorists have found concerning anger and disgust.

The Present Research

The present research is intended to support and expand what is known about negative aesthetic emotions. Researchers often ignore negative aesthetic emotions because they tend to pose problems for theories of aesthetic emotions (e.g., Martindale's Prototypicality Model). However, negative emotions, such as anger and disgust, are legitimate responses to aesthetic objects. Study 1 will investigate appraisal components previously associated with anger and disgust, and it will expand the appraisal theories of emotions by attempting to establish an action tendency link for these negative aesthetic emotions. Action tendencies in general have received little attention in the empirical literature, yet it could be that this component of the appraisal model significantly contributes to identifying emotions from one another. Study 2 will elaborate on action tendencies through the use of a behavioral measure of rejection. If it is possible to relate an actual behavior with an emotion, then the argument for the *propensity for behavior* (action readiness/tendency) can only be strengthened.

CHAPTER IV

STUDY 1

The previous research by Frijda and colleagues (1989), Kuppens and colleagues (2003), and Silvia and Brown (in press) suggests that value incongruence and intentionality are relevant components for the appraisal structure for anger, and that value incongruence and unpleasantness are key components for disgust. Study 1 seeks to provide further support for these appraisal structures by providing additional measures of the structural variables. Therefore, it was hypothesized here that the cognitive appraisals of value incongruence and artist's intentionality will significantly predict anger, and that value incongruence and unpleasantness will significantly predict disgust.

Rejection was measured as a possible specific action tendency for these emotions. If people experience that they have some control over the situation, and that they can influence the situation by either approaching or avoiding the object of emotion, then they should exhibit the potential for behavior (action readiness). Therefore, it was hypothesized that when reporting feelings of anger and disgust, people would also exhibit rejection of the picture.

Participants

A total of 80 undergraduate students (12 males, 67 females, 1 unreported) at the University of North Carolina at Greensboro participated in this study. Students received one credit towards a research option in their General Psychology course.

Materials

Fourteen full-color photographs were selected for use in this study. The pictures were selected based on their potential to elicit a variety of responses. Particularly, mundane photographs were interspersed with controversial photographs by Andres Serrano and Robert Mapplethorpe. Table 1 lists all photographs used; photographs are listed in the order they were presented.

Table 1

Study 1 Photographs by Order of Presentation

Photograph	Artist	Year
Aeronaut 2	Maria Friberg	2002
Self-Portrait	Robert Mapplethorpe	Unknown
Element 2	Mary Woodall	2002
Jane Doe Killed By Police	Andres Serrano	1992
Thomas	Robert Mapplethorpe	1987
Aware But Still There 2	Maria Friberg	2002
Ken Moody	Robert Mapplethorpe	1983
Madonna and Child 2	Andres Serrano	1989
Element 10	Mary Woodall	2002
Fatal Meningitis	Andres Serrano	1992
Parrot Tulips	Robert Mapplethorpe	1988
Rat Poison Suicide	Andres Serrano	1992
Hermes	Robert Mapplethorpe	1988
Piss Christ	Andres Serrano	1987

Procedure and Design

Students participated in the study in groups of 3 to 8. Students were seated at individual tables, where they reviewed and signed a consent form introducing them to the study. The experimenter explained that the purpose of the study was to explore the various responses that could be elicited by different works of art. Students were advised that some of the art could be found offensive or aversive, and that they were free to withdraw their participation at any time without any penalty. It was emphasized, however, that the purpose of the study was to understand any positive or negative reactions to art, and that no attempt was being made to personally offend anyone. Therefore, students were encouraged to participate fully in the experiment and be as sincere as possible with their responses. In addition, students were assured that their confidentiality would be maintained.

After an opportunity for questions before beginning, students received a booklet containing the fourteen full-color photographs. All photographs were labeled for order retention at the bottoms of the pages (Picture 1, Picture 2, and so forth). The titles of the photographs were included at the top of the pages, as was a brief description of the photograph. This was to ensure that participants were able to accurately interpret and understand the photographs. Previous research indicates that understanding increases when this information is provided (see Silvia, 2005b for further discussion). Students then received a questionnaire with one page corresponding to each picture (labeled Picture 1, Picture 2, … at the bottom). Students were asked to view each picture and rate how much they agreed with each of the thirteen statements.

Statements were designed to reflect the two emotions, three structural components, and the action tendency of interest in this study. Anger was measured with the statement, "This picture makes me angry." Disgust was measured with the statement, "I find this picture disgusting." Value incongruence was measured with two items (as opposed to the one item measure in Silvia & Brown, in press): "This picture goes against my values" and "This picture violates society's moral standards." Intentionality was also measured with two statements rather than one: "The artist is intentionally trying to offend people like me" and "The artist is deliberately trying to upset people." Unpleasantness/pleasantness was measured with one item: "This picture is pleasant."

Degree of rejection expressed in response to each picture was measured with three items: "Should this picture be shown at the Weatherspoon Art Museum?" (the Weatherspoon Art Museum is the University Art Museum), "Should the government provide grants to financially support this kind of art?" and "Should this kind of art be displayed in public museums?" These statements were designed to reflect the endorsement or rejection of the artworks, which could reflect action readiness components for anger and disgust (see Appendix A for sample questionnaire).

Obviously this study relies on self-report measures, and it is commonly known that self-report measures do not always reflect the best method of measuring behavior. The social-desirability bias can compromise the validity of self-report measures, as can the finding that people are often unaware of their own true beliefs and opinions. However, when studying action tendencies, it is important that action readiness (as a precursor to an actual behavior) be addressed. Because action readiness reflects a

willingness (or unwillingness) to engage in a behavior, without the actual behavior having to be enacted, self-report measures can capture this willingness. Self-report measures are one way to grasp the potential for action, without requiring that the action be carried out.

All statements were measured on a 7-point Likert scale ranging from 1 “not at all” to 7 “yes, definitely.” A personality scale and demographic measures were included at the end of the questionnaire for exploratory purposes. Space was provided at the end of the questionnaire for students to share any additional comments about the study. When participants had completed the questionnaire, they were given a written debriefing that included contact information for the experimenter (in case further questions or comments arose), and sources for further information on the topic of the study.

CHAPTER V

RESULTS

Analytic Strategy

Data from this study were analyzed using multilevel modeling, or hierarchical linear modeling (HLM). The study addressed individual responses to several different artworks, thereby providing multiple assessments per person. The ratings for each photograph are not aggregated across people; instead, they are presumed to covary within the person. Therefore, the ratings are nested *within*-person, meaning that traditional between-person analyses would be inappropriate (Raudenbush, Bryk, & Congdon, 2002). Multilevel modeling can more accurately estimate the predictive value provided by each variable, as within-person analyses are not plagued with the threat of confounding individual differences (Nezlek, 2001).

All analyses were conducted using HLM version 6.0 (Raudenbush et al., 2002). All levels assessed by multilevel modeling are done so at the same time. Furthermore, coefficients for each variable at one level are analyzed at another level. What this means is that the coefficients reported at level 1 are the dependent variables for the equations at level 2, and so forth (Nezlek, 2001). For all models referenced by the hypotheses, random effects ANOVA models (also known as unconditional means models) were conducted in order to have a baseline model for comparison, and to calculate intraclass correlation (see Appendix C for further definition of this model). These models were

then compared to random coefficients models (random slopes and random intercepts models) to determine the contribution of the predictor variables to the models (see Appendix D). In an attempt to further understand the impact of the predictors on the outcome variables, intercepts and slopes as outcomes models (also known as full HLM/multilevel models) were conducted in which the aggregates of the predictors at level 1 are entered at level 2 as predictors of the level 1 intercept. Appendix E describes this model in more detail.

Anger

Previous research has indicated that value incongruence and intentionality were associated with anger (Frijda et al., 1989; Silvia & Brown, in press), and it was hypothesized that the same results would be replicated in the context of aesthetic emotions. Before these predictions were tested, the ANOVA model for anger was conducted. From this model, it was found that the intraclass correlation for anger was 0.1072, indicating that only 10.72% of the variability in anger ratings can be attributed to variability between people. Thus, most of the variability in anger is at the within-person, between-photograph level. Typically when intraclass correlations approach zero, it indicates that nesting in not necessary, and thus neither is multilevel modeling. Instead, it would be appropriate to consider a person's responses for each photograph as if they were distinct responses, and then perform a regression analysis on the data. In other words, photographs 1 through 14 for person *j* could be considered as if they had come from 14 different people. To determine if this is this case, it is necessary to look at the significance test for the variance component (τ_{00}) associated with the intercept. For this

model, the variance component was significant (τ_{00}=0.37, χ^2(79)=211.73, p<0.001), thus indicating that the use of HLM is still appropriate for modeling anger.

The ANOVA model also provides a reliability estimate of the intercept for anger (γ_{00} = 2.09, *SE* = 0.08, *t*(79) = 24.65, p<0.001) that describes the extent to which one can be confident in the estimate of a given person's mean. Essentially what this describes is what proportion of the estimate of a person's average is signal versus noise. The reliability estimate for anger was 0.627, meaning that 62.7% of the variability in the intercept, or average anger, is due to true differences between people.

The random coefficients model for anger was analyzed next; this model is the model that is used to test the predictions put forth above. The predictor variables of value incongruence and intentionality were entered into the model as group-mean centered. In this case, this means that the values for the predictor variables were centered on person *j*'s mean. Centering in this manner helps to separate the between- and within-group variation, and also aids in interpretation of the coefficients (Kreft, de Leeuw, & Aiken, 1995). Analyses supported the predictions in that value incongruence and intentionality were found to be significantly associated with reports of anger. Specifically, people reported being angrier when they perceived a picture to be incongruent with their values (γ_{10} = 0.23, *SE* = 0.05, *t*(79) = 4.17, p<0.001) and as being intentionally offensive (γ_{20} = 0.62, *SE* =0.06, *t*(79) = 9.75, p< 0.001). The variance components for these variables were also significant (value incongruence: τ_{11}=0.13, χ^2(76)=210.22, p<0.001; intentionality: τ_{22}=0.18, χ^2(76)=211.73, p<0.001), indicating that these variables are best modeled as random (as opposed to fixed) effects. The intercept (γ_{00} = 2.09, *SE*=0.08,

$t(79)=24.66$, $p<0.001$), or average anger when a person's rating of value incongruence and intentionality for photograph *i* equals their mean, was also best modeled as a random effect ($\tau_{00}=0.53$, $\chi^2(76)=778.70$, $p<0.001$).

Again it is possible to see how well the intercept and predictor variables are being modeled by looking at the reliabilities of the coefficients. For the intercept, the reliability was 0.904, meaning that 90.4% of the variability in average anger is due to true differences between people. The reliability estimate for the slope of value incongruence was 0.521, and so 52.1% of the variability of this slope is due to true differences between people. Likewise, 49.7% of the variability for the slope of intentionality is due to true differences between people. In addition, the proportion of the variance in anger that can be explained by the appraisals can be computed using the within-person variance components of the random coefficients model and the ANOVA model. Results indicate that 74.25% of the variance in anger (at the photograph level) can be explained by the appraisals, thus further supporting the predictions. For the variance-covariance matrix associated with the random coefficients model for anger, see Table 2.

Table 2

Variance Covariance Matrix For Anger: Random Coefficients Model

	Intercept	Value Incongruence	Intentionality
Intercept	0.5258	0.0879	0.0335
Value Incongruence	0.0879	0.1346	-0.1262
Intentionality	0.0335	-0.1262	0.1819

The final model to be tested for anger was the intercepts and slopes as outcomes model. Recall that this model involved placing the average value incongruence and intentionality ratings for person *j* as predictor variables for the slope at level 2. By doing so, it is possible to determine if there are certain person characteristics reflecting value incongruence and intentionality that influence anger. The predictor variables at level 1 were again group-mean centered. The results of this model replicated the results of the random coefficients model in terms of the effects of the appraisals on anger at level 1. Again, people reported being angrier when they perceived a picture to be more incongruent with their values ($\gamma_{10} = 0.22$, $SE = 0.05$, $t(79) = 4.17$, $p<0.001$) and as being intentionally offensive ($\gamma_{20} = 0.68$, $SE = 0.06$, $t(79) = 10.61$, $p< 0.001$). The variance components associated with these coefficients were also significant (value incongruence: $\tau_{11}=0.12$, $\chi^2(76)=212.66$, $p<0.001$; intentionality: $\tau_{22}=0.16$, $\chi^2(76)=229.92$, $p<0.001$), as was the variance component associated with the intercept ($\gamma_{00}=0.30$, $SE=0.12$, $t(77)$, $p<0.02$) ($\tau_{00}=0.17$, $\chi^2(74)=310.35$, $p<0.001$). Therefore, all coefficients are best modeled as random effects.

The aggregate of value incongruence included at level 2 was nonsignificant ($\gamma_{01}=0.20$, $SE=0.13$, $t(77)=1.58$, $p=0.119$). What this indicates is that average value incongruence does not add to the prediction of anger. Average intentionality was also added to level 2 and was found to be significant ($\gamma_{02}=0.64$, $SE=0.12$, $t(77)=5.31$, $p<0.001$). What this indicates is that people who were more inclined to think that something was done intentionally to begin with are more likely to report higher levels of anger.

The reliabilities associated with this model were smaller than those of the random coefficients model. For the intercept, the reliability dropped to 0.756, meaning that now only 75.6% of the variability in anger can be said to be due to true differences between people. While the reliabilities for the slopes of value incongruence and intentionality did not drop as significantly as the reliability for the intercept, they still declined. For value incongruence, the reliability was 0.492, thus 49.2% of the variability in the slope for value incongruence can be attributed to true differences between people; 46.9% of the variability in the slope for intentionality can be attributed to true differences between people. For the variance-covariance matrix associated with this model, see Table 3.

Table 3

Variance-Covariance Matrix For Anger: Intercepts and Slopes as Outcomes Model

	Intercept	Value Incongruence	Intentionality
Intercept	0.1720	0.0738	0.0178
Value Incongruence	0.0738	0.1157	-0.1066
Intentionality	0.0178	-0.1066	0.1572

Disgust

Because value incongruence and unpleasantness have previously been shown to predict disgust, it was predicted that these appraisals would predict disgust in this study as well. Again, the first step of the analyses was to estimate the ANOVA model for disgust. The intraclass correlation for this model was 0.0462, meaning that only 4.62% of the variability can be attributed to variability between people. While this implies that

the nesting of the data is unnecessary, the variance component was significant (τ_{00}=0.21, χ2 (79)=132.56, p<0.001), indicating that HLM is still an appropriate analysis. The reliability of the intercept (γ_{00} = 2.49, *SE* = 0.08, t(79) =31.08, p<0.001) was considerably lower than that for anger: 0.404. Thus, it can only be confidently concluded that 40.4% of the variability in average disgust is due to true differences between people.

The random coefficients model for disgust revealed that results again supported the hypotheses in that appraisals of value incongruence and unpleasantness were significantly related to disgust (again the appraisals were entered as group-mean centered). People reported more disgust when they perceived a picture to be incongruent with their values (γ_{10} = 0.74, *SE* = 0.04, t(79) = 20.58, p<0.001), and unpleasant (γ_{20} = - 0.27, *SE* = 0.02, t(79) = - 9.91, p<0.001). The variance component associated with value incongruence was found to be significant (τ_{11}=0.04, χ^2(79)=157.08, p<0.001) and so value incongruence is best modeled as a random effect. In contrast, the variance component for unpleasantness was not significant (τ_{22}=0.02, χ^2(79)=87.97, p=0.229). For this reason, the random coefficients model was again estimated but with this variable included as a fixed effect. A deviance test between the two models was then performed. Results indicated that even though variance component associated with unpleasantness was nonsignificant, it was still beneficial to leave it as a random effect (χ^2(3)=15.33, p<0.01). In addition, the variance associated with the intercept (γ_{00} = 2.49, *SE* = 0.08, t(79) = 30.81, p<0.001), or average disgust when a person's value incongruence and unpleasantness ratings for photograph *i* equaled their mean, was also significant (τ_{00}=0.42, χ^2(79)=435.06, p<0.001)

The within-person variance of the ANOVA and random coefficients models was again used to determine the contribution of the appraisals in modeling disgust. Of the variance in disgust at the photograph level, 69.5% can be explained by the appraisals of value incongruence and unpleasantness. It can also be stated from the reliabilities for the random coefficients model that 90.4% of the variability in average disgust, 52.1% of the variability in value incongruence, and 49.7% of the variability in intentionality is due to true differences between people. For the variance-covariance matrix for the random coefficients model, see Table 4.

Table 4

Variance-Covariance Matrix For Disgust: Random Coefficients Model

	Intercept	Pleasantness	Value Incongruence
Intercept	0.4270	-0.0506	0.0594
Pleasantness	-0.0506	0.0156	0.0116
Value Incongruence	0.0594	0.0116	0.0442

When the intercepts and slopes as outcomes model was estimated for disgust, the predictor variables at level 1 were again group-mean centered. Results further supported the hypothesis concerning the appraisals (at level 1) and disgust. More specifically, people reported higher levels of disgust as ratings of value incongruence (γ_{10} = 0.78, *SE* =0.04, $t(79) = 20.19$, $p<0.001$) and unpleasantness (γ_{20} = -0.26, *SE* =0.03, $t(79) = -10.04$, $p<0.001$) increased. Also in accordance with the random coefficients model, the variance

component associated with value incongruence was significant (τ_{11}=0.23, χ^2(79)=160.52, p<0.001) whereas the variance with unpleasantness was not (τ_{22}=0.14, χ^2(79)=91.22, p=0.164). Again the model was conducted with this component fixed and a deviance test was performed to compare the two models; the test revealed that despite the nonsignificance of the variance component, the model still benefited from the inclusion of unpleasantness as a random effect (χ^2(3)=15.50, p<0.01). The variance component associated with average disgust (γ_{00} = 1.51, *SE* =0 .24, t(77) = 6.33, p<0.001) was also significant (τ_{00}=0.13, χ^2(77)=175.16, p<0.001), leading to the conclusion that all coefficients are best modeled as random effects.

When the aggregates of value incongruence and unpleasantness were added as level 2 predictors of the intercept, both were significant (value incongruence: (γ_{01} = 0.68, *SE* = 0.05, t(77) = 12.82, p<0.001; unpleasantness:γ_{02} = -0.19, *SE* =0 .05, t(77) = -3.86, p<0.001). What this indicates is that not only will those who perceive the photographs as being incongruent with their values and unpleasant report higher levels of disgust, but those who generally perceive things to be incongruent with their values and unpleasant will be more likely to report higher levels of disgust. Thus, while these effects are speaking to more of person characteristics rather than the photograph characteristics, it still supports the hypotheses concerning these appraisals and disgust.

The reliability estimates for this model diverge somewhat from that of the random coefficients model for disgust. The reliability for the intercept decreased while the reliabilities for the slopes increased. For average disgust, then, 59.7% of the variability can be attributed to true differences between people; 42.7% of the variability in the slope

for value incongruence and 28.4% of the variability in the slope for unpleasantness can be attributed to true differences between people. For the variance-covariance matrix for this model, see Table 5.

Table 5

Variance-Covariance Matrix For Disgust: Intercepts and Slopes as Outcomes Model

	Intercept	Pleasantness	Value Incongruence
Intercept	0.1347	-0.0307	0.0425
Pleasantness	-0.0307	0.0188	0.0112
Value Incongruence	0.0425	0.0112	0.0507

Rejection

The goal of Study 1 was to not only replicate previous findings concerning anger and disgust, but also to assess the association between these emotions and rejection, the hypothesized action tendency. From the intraclass correlation for the ANOVA model of rejection, it is known that 23.09% of the variability in rejection can be attributed to variability between people, and so approximately 77% of the variance is at the between-photograph, within-person level. While this is higher than that of the models for anger and disgust, the significance of the variance component was still assessed to support the use of multilevel modeling. The variance was significant (τ_{00}=0.82, $\chi^2(79)$=410.79, p<0.001), and thus the nesting of the data within-person is appropriate. The reliability of the intercept (γ_{00} = 3.86, SE = 0.11, $t(79)$ = 34.31, p<0.001) was 0.808, and so we can be

confident that 80.8% of the variability in average rejection can be attributed to true differences between people.

When the random coefficients model for rejection was performed, the predictor variables at level 1 were again group-mean centered. Analyses revealed that people were more likely to reject statements supporting the photographs as anger increased (γ_{10} = -0.17, *SE* = 0.04, *t*(79) = -3.99, *p*<0.001) and disgust increased (γ_{20} = -0.37, *SE* =0 .03, *t*(79) = -10.98, *p*<0.001). Rejection, then, can be considered to be a relative emotion component of anger and disgust. While the variance associated with average rejection (γ_{00} = 3.86, *SE* =0.11, *t*(79) = 34.31, *p*<0.001) was significant (τ_{00}=0.91, χ^2(74)=653.96, *p*<0.001), the variance associated with anger (τ_{11}=0.03, χ^2(74)=90.85, *p*=0.089) and disgust (τ_{22}=0.02, χ^2(74)=91.33, *p*=0.084) was only marginally so. Nonetheless, the deviance test indicated that the model was best when these variables were included as random effects (χ^2(5)=35.12, *p*<0.001).

The within-person variance of the ANOVA and random coefficients models revealed that the inclusion of anger and disgust as predictors of rejection explained 42.91% of the variance at level 1. From the reliabilities of the random coefficients model, 89.0% of the variance of average rejection, 19.3% of the variance in the slope of anger, and 21.4% of the variance in the slope of disgust can be attributed to true differences between people. For the variance-covariance matrix of this model, see Table 6.

Table 6

Variance-Covariance Matrix For Rejection: Random Coefficients Model

	Intercept	Anger	Disgust
Intercept	0.9130	0.0369	-0.0177
Anger	0.0369	0.0299	-0.0022
Disgust	-0.0177	-0.0022	0.0217

The results of the intercepts and slopes as outcomes model for rejection supported the findings of the random coefficients model for the level 1 effects. People were again more likely to reject statements supporting the photographs when they reported higher levels of anger (γ_{10} = -0.17, *SE*=0.04, *t*(79)= -4.11, *p*<0.001) and disgust (γ_{20} = -0.37, *SE* = 0.03, *t*(79) = -10.913, *p*<0.001). Also replicating the random coefficients model, the variance components for the predictor variables were marginally significant (anger: τ_{11}=0.03, χ^2(74)=90.77, *p*=0.090; disgust: τ_{22}=0.02, χ^2(74)=91.23, *p*=0.085), while the variance for the intercept (γ_{00} = 5.41, *SE* =0.37, *t*(77) =14.473, *p*<0.001) was significant (τ_{00}=0.73, χ^2(72)=547.22, *p*<0.001). Again the deviance test supported the inclusion of the predictor variables as random effects (χ^2(5)=35.79, *p*<0.001).

When the aggregate of anger was included at level 2, the effect was not significant (γ_{01} =0.17, *SE* =0.17, *t*(77) = 1.043, *p*=0.300). What this suggests is that people did not approach the photographs angry and then reject them, but rather the content of the photographs elicited the angry responses that were associated with rejection. In contrast, the effect for the aggregate of disgust was significant (γ_{02} = -0.77,

SE = 0.18, $t(77) = -4.25$, $p<0.001$), suggesting that people who were predisposed to view a stimulus object as disgusting were more likely to reject the statements supporting that object. The reliabilities of this model suggest that average rejection is being modeled well, and that 86.7% of the variance in rejection can be attributed to true differences between people. The reliabilities for the slopes of anger and disgust (0.200 and 0.213 respectively) suggest that the variance for these variables is not being modeled well, which is logical given their marginally significant variance components. For the variance-covariance matrix for this model, see Table 7.

Table 7

Variance-Covariance Matrix For Rejection: Intercepts and Slopes as Outcomes Model

	Intercept	Anger	Disgust
Intercept	0.7321	0.0425	-0.0340
Anger	0.0425	0.0316	-0.0030
Disgust	-0.0340	-0.0030	0.0215

Predicting Anger from Disgust

Given that anger and disgust are often grouped together or used interchangeably, it is logical to assume that you may predict one emotion from the other. For this reason, analyses predicting anger from disgust were conducted. Since the ANOVA model for anger has already been discussed, it will not be addressed here. From the random coefficients model, it was found that, as expected, disgust significantly predicted anger

(γ_{10} = 0.55, *SE*=0.03, *t*(79)= 17.92, *p*<0.001). Thus, people were more likely to report anger when they reported more disgust. The variance component for the intercept (γ_{00} = 2.09, *SE*=0.08, *t*(79)= 24.65, *p*<0.001) was significant (τ_{00}=0.50, χ^2(79)=560.03, *p*<0.001), as was that for disgust (τ_{11}=0.05, χ^2(79)=293.04, *p*<0.001). The covariance for the intercept and the predictor (disgust) was 0.1522.

Using the within-person variance from the ANOVA and random coefficients model, it was found that 62.19% of the variance in anger at the between-photograph level could be explained by inclusion of disgust as a predictor variable. In addition, the reliabilities indicate that 85.9% of the variability in average anger and 66.4% of the variability in the slope for disgust can be attributed to true differences between people.

Discussion

Overall the results of Study 1 are consistent with previous research: value incongruence and intentionality were appraisal components of anger, and value incongruence and unpleasantness were components of disgust. Evidence was also found that indicated that people who were more likely to make an attribution of intention to begin with reported more anger. In addition, it was found that those who are more likely to perceive something as incongruent with their values and unpleasant from the outset were more likely to report higher levels of disgust. Thus, not only can associations between appraisals and emotions be assessed in respect to a given stimulus object, but also in terms of general person characteristics.

Anger and disgust also significantly predicted people's rejection of statements supporting the photographs. Furthermore, generalizations about person characteristics

can be made here in that people who were more likely to be disgusted in general were more likely to reject the statements. Anger and disgust were also related in that disgust predicted anger, a finding not surprising given the similarities between these emotions. Although all of these results were expected and mirror the results of previous research, a self-report method of action tendency is still a weak indicator of behavior. Study 2 thus extends beyond self-reports in an attempt to associate actual behavior with these emotions.

CHAPTER VI

STUDY 2

The goal of Study 2 was to associate emotions with behavior rather than with just the potential for behavior. Following a strategy often used in intrinsic motivation research (e.g., Sansone, Weir, Harpster, & Morgan, 1992), Study 2 measured rejection through the selection of a gift offered at the end of the study. People completing the study were offered the chance to receive one of four postcards of the photographs used in the study, one of which was of a controversial target photograph. It was hypothesized that the more anger and disgust a person reported to the target photograph, the more likely they were to reject the target postcard.

Participants

A total of 78 undergraduate students (15 males, 61 females, 2 unreported) at the University of North Carolina at Greensboro participated in this study. Students received one credit towards a research option in their General Psychology course.

Materials

Eight full-color photographs were selected for this study. The pictures were again selected based on their potential to elicit a variety of responses. Table 8 lists the photographs used in alphabetical order by title.

Table 8

Study 2 Photographs by Alphabetical Order

Photograph	Artist	Year
Aeronaut 2	Maria Friberg	2002
Aware But Still There 2	Maria Friberg	2002
Chicago	Harry Callahan	c. 1950
Dog On Wheels	Robert Doisneau	1977
Element 2	Mary Woodall	2002
Japanese Bath	Louise Dahl Wolfe	1954
Piss Christ	Andres Serrano	1987
Untitled (#314F)	Cindy Sherman	1994

Procedure and Design

Students were introduced to the experiment in the same manner as Study 1 with one exception. Students were told that at the end of the experiment they would be offered a small thank you gift for their participation. At this point, they were not told what the gift would be. They were told that this gift would have to be mailed to them since we could not buy them until it was known how many were needed. While the students were asked for their mailing addresses, they were assured that their confidentiality would be maintained and that their personal information would be separated from their questionnaires. After coding for which gift they selected, their information was indeed separated from their other materials.

Students were given booklets akin to the booklets in Study 1. Each photograph in the booklet was labeled as before and was accompanied by its title and a brief description. There were seven filler photographs and one target photograph, *Piss Christ*,

which was chosen for the strong emotions it has been shown to elicit (Silvia & Brown, in press). There were a total of eight orders of presentation for the photographs so that the target photograph appeared as Picture 1 through Picture 8. The order of the photographs around the target was randomly assigned and was different for each booklet.

Students then received a questionnaire with one page corresponding to each picture. Students were asked to view each photograph and to rate how much they agreed with each of the thirteen statements. Each statement assessed a different emotion (see Appendix B for sample questionnaire listing emotions). All statements were measured on a 7-point Likert scale ranging from 1 "not at all" to 7 "yes, definitely." Personality scales and demographic measures were included at the end of the questionnaire for exploratory purposes. Space was provided at the end of the questionnaire for students to share additional comments about the study. When participants had completed the questionnaire, they were given a written debriefing that included contact information for the experimenter (in case further questions or comments arose) and sources for further information on the topic of the study.

CHAPTER VII

RESULTS

Although Study 2 used self-report measures of emotions, rejection was measured through the selection/rejection of a target postcard, thus providing a behavioral measure not found in previous research of appraisal theories. It was predicted that the more anger and disgust people reported, the more likely they were to reject the postcard depicting the controversial photograph. To begin the analyses, parametric and nonparametric correlations were conducted for the ratings of anger and disgust for the target photograph (see Table 9). As suggested by the results of Study 1, anger and disgust were strongly correlated. Additionally, anger and disgust were both moderately correlated with postcard selection, providing the first indication that these negative emotions could predict rejection. The significance of all correlations suggests that those who selected the *Piss Christ* photograph and those who did not significantly differed in terms of average anger and disgust.

Table 9

Pearson's r and Kendall's τ_b Correlations for Study 2

	Postcard	Anger	Disgust
Postcard	1	$r = .363^{**}$	$r = .350^{*}$
Anger	$\tau = .293^{*}$	1	$r = .817^{**}$
Disgust	$\tau = .307^{*}$	$\tau = .709^{**}$	1

$^{*}p < .05$, $^{**}p < .01$

Of the 78 people in the study, one-third did not choose any of the four postcards. This posed a problem: should those people who did not select a postcard be treated as missing and omitted from the analyses? Or should they be considered to have also rejected the *Piss Christ* postcard? Because there was no way to know which option would best represent those who opted not to select a postcard, analyses were performed in which those people were excluded (n=53), and with them included and coded as having rejected the *Piss Christ* postcard (n=76, two were missing for other reasons). In both analyses, the results were comparable (see below). Only 5 people selected the *Piss Christ* postcard, which is only 6.4% if all people are included and 9.4% of those who actually selected a postcard.

Because the outcome variable for the study was binary (selecting versus rejecting *Piss Christ*), logistic regression analyses were conducted to test the probabilities of a person selecting the target postcard. When anger was entered as the sole predictor, it significantly predicted postcard selection when those who did not select a postcard were included (b =0.65, SE =0.29, $Wald$(1) 4.96, p<0.03), and when they were included as having rejected *Piss Christ* (b =0.57, SE =0.28, $Wald$(1) 4.22, p<0.05). Table 10 lists the probabilities of rejecting the *Piss Christ* postcard given a particular anger rating. From this table it can be seen that the angrier people reported being, the less likely they were to select the *Piss Christ* postcard. Interestingly, the probability of rejecting the *Piss Christ* postcard was at chance level (i.e., p=0.50) at an anger rating value not represented by the 7-point scale used in the study. What this means is that for the probability of selecting versus rejecting *Piss Christ* to be 0.50, the anger rating reported by any given person

would have to be 0.0713 if *n*=53, or -1.3176 if *n*=76. This indicates that while anger did influence the probability of rejection, people were likely to reject the postcard anyway.

Table 10

Probabilities of Rejecting Piss Christ Postcard Per Anger Rating

		Probabilities	
Emotion	Rating	*n = 53*	*n = 76*
Anger	-1.3176		.5000
	.0713	.5000	
	1	.6662	.7905
	2	.7918	.8700
	3	.8788	.9223
	4	.9325	.9547
	5	.9634	.9739
	6	.9805	.9851
	7	.9897	.9916

Note. Some people did not choose to receive any postcard. One set of analyses was conducted excluding these people (*n* = 53). A second set of analyses was conducted with the missing values coded as rejecting the *Piss Christ* postcard (*n* = 78).

When disgust was entered as the sole predictor, it too significantly predicted postcard selection when missing cases were excluded (*b* =0.61, *SE* =0.276, *Wald*(1) = 4.90, *p* <0.03), and when the missing cases were coded as rejecting *Piss Christ* (*b* =0.54, *SE* =0.26, *Wald*(1) 4.19, *p*<0.05). Table 11 gives the probabilities associated with disgust and rejection of the *Piss Christ* postcard. The same phenomenon that occurred with anger can be seen with disgust: while disgust significantly influenced probability levels, the disgust rating for which selection or rejection was at chance levels did not exist.

Again this indicates that people did not want to pick this postcard even when they reported not being disgusted at all.

Table 11

Probabilities of Rejecting Piss Christ Postcard Per Disgust Rating

		Probabilities	
Emotion	Rating	*n = 53*	*n = 76*
Disgust	-1.2766		.5000
	-.0705	.5000	
	1	.6381	.7717
	2	.7644	.8523
	3	.8566	.9079
	4	.9166	.9439
	5	.9529	.9664
	6	.9738	.9800
	7	.9856	.9882

Note. Some people did not choose to receive any postcard. One set of analyses was conducted excluding these people ($n = 53$). A second set of analyses was conducted with the missing values coded as rejecting the *Piss Christ* postcard ($n = 78$).

The results of these analyses fit the predictions in that greater levels of anger and disgust resulted in a greater probability of rejection, but neither anger nor disgust emerged as a significant predictor when both were included as predictor variables. As suggested by the correlations, these two variables may be too strongly related for them to constitute independent effects. To test this idea, an aggregate variable was created – hostile – by averaging anger and disgust. This variable was then submitted to the logistic regression analysis, and was found to be a significant predictor of postcard selection

(b=0.703, SE =0.303, $Wald(1) = 5.40$, p<0.03). The probabilities associated with varying rates of hostility can be seen in Table 12. As hostility increased, so too did the probability of rejection. Again here it was found that the hostility rating at which rejection would be at chance levels does not exist, and thus the conclusion stands that while hostility influenced rejection, people were likely to reject the postcard even when reporting no hostility.

Table 12

Probabilities of Rejecting Piss Christ Postcard Per Hostile Rating

		Probabilities	
Emotion	Rating	*n = 53*	*n = 76*
Hostile	-.6475		.5000
	-.3912	.5000	
	1	.6054	.7429
	2	.7560	.8462
	3	.8622	.9129
	4	.9267	.9523
	5	.9623	.9743
	6	.9810	.9864
	7	.9905	.9928

Note. Some people did not choose to receive any postcard. One set of analyses was conducted excluding these people (n = 53). A second set of analyses was conducted with the missing values coded as rejecting the *Piss Christ* postcard (n = 78).

Discussion

From Study 2 we learn that rejection is not just an action tendency that corresponds to anger and disgust, but it is an actual behavior as well. People who

reported more anger and disgust were more likely to reject the postcard depicting *Piss Christ*. Interestingly, the significant overlap between anger and disgust supports precisely what previous research has indicated concerning their relationship. These two emotions share considerable appraisal components, and the distinction between the two can be difficult to detect.

CHAPTER VIII

GENERAL DISCUSSION

Emotions are complex constructs that are an integral aspect of human life. If this were not so, people would not watch movies that make them cry, or paint beautiful landscapes, or even hug their children. Everyday we are inundated with an array of emotions unparalled by any other species, and it seems intuitive that these emotions somehow govern our behaviors. There are countless ways in which we come to think, feel, and act in particular ways, and appraisal theories can aid us in understanding the thoughts behind the emotions and the behaviors that could result.

Appraisal theorists have consistently been successful in associating particular thoughts with subsequent emotions. Assessments of value incongruence and intentionality are related to one's anger; similarly, assessments of value incongruence and unpleasantness can predict disgust. Study 1 provides further support for these relationships through the use of aesthetic stimuli. While the results of this study would come as no surprise to appraisal theorists, one merit to be found lies in the fact that thoughts and emotions here were assessed at the moment when people were confronted with the stimuli. Much of the previous research on emotions has assessed retrospective events (e.g., Frijda et al., 1989; Kuppens et al., 2003), and one's evaluation of an event can change over time. Thus, Study 1 contributes to the validity of the findings of previous research on appraisal theories.

Study 1 also contributes to appraisal theories by using additional items to measure appraisals, and by establishing an action tendency associated with anger and disgust. Modeled after the study by Silvia and Brown (in press) in which only one item was used to measure each appraisal, Study 1 used two scale items to measure value incongruence and intentionality. These items were aggregated to create a single score for each appraisal, each of which were significant and thus further support the association between appraisals and emotions. Furthermore, by using phrases that endorse various forms of support for the artworks presented, rejection of these statements was predicted by increases in ratings of anger and disgust. This association supports the contention that rejection is a relevant action tendency for anger and disgust.

While some might argue that rejection as the statements in Study 1 define it is not an actual behavioral component, appraisal theories suggest that it is. Often we may want to act in a particular way that is constrained by our conscious, societal standards, and even logic. Action tendencies reflect action readiness, or the desire or willingness to engage in a given behavior, and no behavior has to actually occur for the association between an emotion and action tendency to be established. Study 1 thus signifies that the use of self-report measures in appraisal research is not only acceptable but also desirable. Nonetheless, Study 2 was conducted to bolster this association between negative emotions and rejection.

Study 2 illustrated that the more anger and disgust people experienced in response to a target object (*Piss Christ* photograph), the more likely they were to reject that object (*Piss Christ* postcard). Moreover, when anger and disgust were combined to

reflect an overall hostile reaction, people were again more likely to reject *Piss Christ* as ratings for the variable increased. What this indicates is that rejection reflects a behavior associated with not only these negative emotions, but perhaps others as well. It is particularly likely that rejection is associated with contempt, the other emotion comprising the hostility triad. Study 2 also contributes to appraisal and aesthetic theories by suggesting a new manner by which to study action tendencies. While the selection or rejection of a gift has been used extensively in motivational research, it has yet to be used to study these theories. However, any emotion or stimulus object thought to be associated with an approach or avoidance behavior can be studied using this behavioral measure.

The information provided by Study 1 and 2 also brings us a step closer to understanding the behavior such as that surrounding the Culture War of the 1990s. Not all negative responses in art result in vandalism, censorship, and congressional hearings. So what about the artworks caused them to be so strongly opposed? The research presented here would suggest that people were so angered and disgusted by the works that they acted out in a variety of ways to demonstrate their rejection of the artworks and the artists themselves. It is beyond the scope of this research project to make this statement for certain, but when reading the proceedings of the congressional hearing concerning this particular culture war (Van Camp, 1997), it is easy to pick out the statements that reflect appraisals such as value incongruence. In addition, to fail to notice the underlying angry tones with which many make their statements is near impossible.

The research presented here, along with appraisal theories in general, hold some interesting implications for various other fields. For example, in clinical psychology, cognitive-behavioral treatments have long focused on changing problematic thoughts and behaviors in order help patients overcome mood and other disorders. Since appraisal theories focus on identifying relevant components of emotions, they could aid in making these treatments more effective. If an emotion is playing a deterministic role in a disorder, clinicians might be able to identify the dysfunctional thoughts and behaviors associated with that disorder without having to rely primarily on what a patient is telling them. A similar approach could be taken in the legal field when a person commits a seemingly "senseless" crime. By knowing what emotions might have played a role in that crime, legal professionals could break down the thought processes (appraisals) that led to that crime and bolster a weak prosecution or defense. While these examples are not exhaustive, the point to be taken is that in any situation where an emotion is thought to be associated with behavior, appraisal theories can aid in the understanding of how those constructs are related.

Limitations and Future Directions

While the research presented here indicates that action tendencies are legitimate components of appraisal structures of emotions, and that rejection is a tendency associated with negative emotions, more research is needed to determine the extent to and ways in which rejection is a behavior manifestation of negative emotions. Obviously the selection or rejection of a postcard can offer only so much insight into behavior, and thus the applicability of the research present here is limited. There are no direct consequences

of this behavior, whereas there are often dramatic consequences to our behavior in everyday life. Future research should establish a model to test appraisal theories in a context where one's behavior might actually have an impact (or at least have those involved think that their behavior would have an impact). Such a model could potentially solidify the significant ability of appraisal theories in explaining emotions and behaviors.

Another limitation of the studies presented here is the substantial overlap between anger and disgust that has not been demonstrated in previous appraisal research. While the two commonly co-occur and share the appraisal of value incongruence, it is likely here that they are being used interchangeably. In Study 1, disgust predicted anger almost as well as the appraisal model; their shared variance in Study 2 made it necessary to create an aggregate variable in order for them both to be considered within the same model. It may be that the reason for this overlap is due to the highly provocative nature of the stimuli used. For instance, *Piss Christ* could be deemed disgusting because of the use of urine (unpleasant), while also making people angry through the use of a powerful religious symbol (value incongruent). As another example, people could find *Fatal Meningitis* disgusting because it is a picture of a deceased infant (unpleasant), while also being angered that the artist violated the privacy of one's family by taking the picture (value incongruent or intentionality).

It could also be that these two emotions really are synonymous, as Nabi (2002) suggested with the finding that definitions of disgust had evolved to reflect anger rather repulsion. Or it could be that the domain of disgust used is important. In this research, the relevant domain would be the socio-moral domain. However, using a domain such as

core or animal-reminder disgust might result in findings that more clearly differentiate between the two emotions. In the future, an attempt should be make to distinguish anger and disgust from one another to determine if they are as similar as indicated by the present research. If they are still found to be similar, then they should be expected to share more appraisal components. If they are found to still have distinct components, other research should take this into account when considering the effects of certain stimulus materials.

Further blurring the lines between anger and disgust is that both significantly predicted rejection in both Study 1 and Study 2. This is problematic if the findings of Frijda and colleagues (1989) are taken into consideration. These researchers found initially that anger and disgust did not diverge in action tendency factors. However, when more concise research was conducted, anger was associated with *moving against* action tendencies, whereas disgust was associated with *moving away* action tendencies. It is not clear which of these action tendencies would be represented by rejection as it is defined in this research. While not endorsing statements supporting the artworks could be seen as an action tendency meant to keep the controversial artworks away from oneself, it could also reflect a behavior aimed at acting out against the artwork. This ambiguity suggests another means by which emotions may need to be distinguished from one another: the goal of the behavior.

Empirically the focus has been on cognitive appraisals of emotion, with some attention to action tendencies. However, there is another aspect that Roseman, Wiest, and Swartz (1994) have found to differentiate emotions and that is the goals of the

behavior associated with the emotions. For instance, a person who is angry might act out in way that is meant to do harm to another person, or they might go running in the hopes that physical stress with act as a form of catharsis for mental stress. Obviously there are countless reasons why a person might engage in a particular behavior, and categorization of behaviors based on emotions would be impractical due to likely overlap. Nonetheless, when trying to parse out emotions and their behavioral counterparts in particular contexts, assessing potential goals could be beneficial in accurately defining components of appraisal and emotion models.

A caveat of appraisal theories in general that is worthy of admission here is that, even though there is clear evidence supporting componential, structural models of emotions, insight as to how these components interact is lacking. Research into process models in appraisal theories is just beginning, and many questions about emotions are unanswered at this point. Currently, appraisal theorists are considering the possibility of a dual-process model in which each process has its own distinct cognitive mechanisms (Smith, 2006). One theorized process is an associative process that is automatic, fast, and associated with a low level of cognition. The second process is reasoning, the slow, controlled, linear-serial cognitive process. In addition, theorists are concerned with how previous appraisals and emotions in turn affect future appraisals and emotions, and how an emotion might revert to change the initial appraisals that were thought to bring it about. Without a doubt, the direction that appraisal research is heading into promises to enable us to understand even more about our emotions and their role in our lives.

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Appendix A

Sample Questionnaire – Study 1

This picture makes me angry.

1	2	3	4	5	6	7
not at all						*yes, definitely*

This picture is disgusting.

1	2	3	4	5	6	7
not at all						*yes, definitely*

I find this picture interesting.

1	2	3	4	5	6	7
not at all						*yes, definitely*

This picture is pleasant.

1	2	3	4	5	6	7
not at all						*yes, definitely*

The artist is deliberately trying to upset people.

1	2	3	4	5	6	7
not at all						*yes, definitely*

This picture violates society's standards.

1	2	3	4	5	6	7
not at all						*yes, definitely*

This picture goes against my values.

1	2	3	4	5	6	7
not at all						*yes, definitely*

The artist is intentionally trying to offend people like me.

1	2	3	4	5	6	7
not at all						*yes, definitely*

Should this picture be shown at UNCG's Weatherspoon Art Museum?

1	2	3	4	5	6	7
not at all						*yes, definitely*

Should the government provide grants to financially support this kind of art?

1 2 3 4 5 6 7

not at all *yes, definitely*

Should this kind of art be displayed in public museums?

1 2 3 4 5 6 7

no, definitely not *yes, definitely*

How artistic is this picture?

1 2 3 4 5 6 7

not artistic at all *very artistic*

In your opinion, is this "art"?

1 2 3 4 5 6 7

not at all *yes, definitely*

Appendix B

Sample Questionnaire – Study 2

This picture makes me angry.

1	2	3	4	5	6	7
not at all						*yes, definitely*

This picture makes me happy.

1	2	3	4	5	6	7
not at all						*yes, definitely*

I find this picture interesting.

1	2	3	4	5	6	7
not at all						*yes, definitely*

This picture disgusts me.

1	2	3	4	5	6	7
not at all						*yes, definitely*

This picture makes me sad.

1	2	3	4	5	6	7
not at all						*yes, definitely*

This picture is fascinating.

1	2	3	4	5	6	7
not at all						*yes, definitely*

This picture makes me nervous.

1	2	3	4	5	6	7
not at all						*yes, definitely*

I find this picture boring.

1	2	3	4	5	6	7
not at all						*yes, definitely*

This picture makes me feel ashamed.

1	2	3	4	5	6	7
not at all						*yes, definitely*

This picture makes me feel proud.

1	2	3	4	5	6	7
not at all						*yes, definitely*

This picture is gross.

1	2	3	4	5	6	7
not at all						*yes, definitely*

How artistic is this picture?

1	2	3	4	5	6	7
not artistic at all						*very artistic*

In your opinion, is this “art”?

1	2	3	4	5	6	7
not at all						*yes, definitely*

Appendix C

Definition of a Random Effects ANOVA Model

Level 1 Model: $Y_{ij} = \beta_{0j} + r_{ij}$

Level 2 Model: $\beta_{0j} = \gamma_{00} + u_{0j}$

In the present research, *i* corresponds to photograph and *j* corresponds to person.

β_{0j}: an intercept that describes the mean of the outcome variable for person *j* (or other level 2 unit of analysis); also is a function of the grand mean of the outcome variable (γ_{00}) plus an error term (u_{0j}) describing how person *j* deviates from this grand mean. In the present research, the intercepts describe the average anger, disgust, and rejection ratings for person *j*.

r_{ij}: random error term; also describes how person *j*'s score for a particular level 1 unit of analysis (in this case, photograph *i*) differs from that person's mean for the outcome variable.

Appendix D

Definition of a Random Coefficients Model

Level 1 Model: $Y_{ij} = \beta_{0j} + \beta_{1j} (X_{1ij} - X_{1\cdot j}) + \beta_{2j} (X_{2ij} - X_{2\cdot j}) + r_{ij}$

Level 2 Models: $\beta_{0j} = \gamma_{00} + u_{0j}$

$\beta_{1j} = \gamma_{10} + u_{1j}$

$\beta_{2j} = \gamma_{20} + u_{2j}$

Allow *i* to represent photograph and *j* to represent person. Define X_1 as value incongruence for the model predicting anger and disgust, and as anger for the model predicting rejection. Define X_2 as intentionality for the anger model, unpleasantness for the disgust model, and as disgust for the rejection model.

β_{0j}: an intercept depicting the mean score of *Y* (*Y* = anger/disgust/rejection) for person *j* when X_{1ij} and X_{2ij} are at their mean; also is a function of the grand mean of *Y* (γ_{00}) plus an error term (u_{0j}) describing how person *j* deviates from this grand mean.

β_{1j}: the average regression slope describing the rate of change in *Y* for every one-unit change in the first group mean centered level 1 predictor ($X_{1ij} - X_{1\cdot j}$); also is a function of the grand mean of all slopes (γ_{10}) plus an error term (u_{1j}) describing how person *j* deviates from this grand mean.

β_{2j}: the average regression slope describing the rate of change in *Y* for every one-unit change in the second group mean centered level 1 predictor ($X_{2ij} - X_{2\cdot j}$); also is a function of the grand mean of all slopes (γ_{20}) plus an error term (u_{2j}) describing how person *j* deviates from this grand mean.

r_{ij}: random error associated with level 1 variables; in the present research, this term describes the error associated with photograph *i* for person *j*.

Appendix E

Definition of an Intercepts and Slopes as Outcomes Model

Level 1 Model: $Y_{ij} = \beta_{0j} + \beta_{1j} (X_{1ij} - X_{1\cdot j}) + \beta_{2j} (X_{2ij} - X_{2\cdot j}) + r_{ij}$

Level 2 Models: $\beta_{0j} = \gamma_{00} + \gamma_{01} W_{1,j} + \gamma_{02} W_{2,j} + u_{0j}$

$\beta_{1j} = \gamma_{10} + u_{1j}$

$\beta_{2j} = \gamma_{20} + u_{2j}$

Allow *i* to represent photograph and *j* to represent person. Define X_1 as value incongruence for the model predicting anger and disgust, and as anger for the model predicting rejection. Define X_2 as intentionality for the anger model, unpleasantness for the disgust model, and as disgust for the rejection model.

β_{0j}: an intercept depicting the mean score of *Y* (*Y* = anger/disgust/rejection) for person *j* when X_{1ij} and X_{2ij} are at their mean; also is a function of the grand mean of *Y* (γ_{00}) and two slopes (γ_{01} and γ_{02}) describing the rate of change in the grand mean for every one-unit change in $W_{1,j}$ and $W_{2,j}$, plus an error term (u_{0j}) describing how person *j* deviates from this grand mean.

$W_{1,j}$: the aggregate (mean) of X_1 for person *j*.

$W_{2,j}$: the aggregate (mean) of X_2 for person *j*.

β_{1j}: the average regression slope describing the rate of change in *Y* for every one-unit change in the first group mean centered level 1 predictor ($X_{1ij} - X_{1\cdot j}$); also is a function of the grand mean of all slopes (γ_{10}) plus an error term (u_{1j}) describing how person *j* deviates from this grand mean.

β_{2j}: the average regression slope describing the rate of change in *Y* for every one-unit change in the second group mean centered level 1 predictor ($X_{2ij} - X_{2\cdot j}$); also is a function of the grand mean of all slopes (γ_{20}) plus an error term (u_{2j}) describing how person *j* deviates from this grand mean.

r_{ij}: random error associated with level 1 variables; in the present research, this term describes the error associated with photograph *i* for person *j*.