

## Anger, Disgust, and the Negative Aesthetic Emotions : Expanding an Appraisal Model of Aesthetic Experience

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Among Andres Serrano's many controversial photographs—images of corpses in a morgue, portraits of Ku Klux Klan members, images of blood and semen pressed between glass—*Piss Christ* stands out. Before a 1997 exhibition at the National Gallery of Victoria in Australia, the Catholic Church sued unsuccessfully to prevent the showing of Serrano's photographs. During the exhibition, *Piss Christ* was defaced twice in 2 days: ineffectively by a man with his bare hands, and effectively by a teenager with a hammer (“Protestor Damages Serrano Photo,” 1997). In an era where ignorance about the arts is high, negative emotions like anger, disgust, and contempt are common responses to provocative and challenging works. So what do psychological theories of aesthetic emotions have to say about negative responses to art? How can we understand the emotions that lead people to reject, censor, and deface works of art? The study of aesthetic emotions is central to the psychology of the art (Cupchik, 2006), yet essentially no research has been done on negative responses to art. The present research thus applies a recent appraisal model of aesthetic emotions (Silvia, 2005b) to anger and disgust in response to visual art. This model can explain when negative aesthetic emotions occur and predict subtle differences between similar emotions.

### *Theories of Aesthetic Emotions*

Negative emotions are a crucible for theories of aesthetics. We describe how the major theories explain negative feelings in response to art. As we will see, these theories easily explain positive emotions but struggle to explain negative emotions.

### **Berlyne's Psychobiological Model**

Berlyne's (1971, 1974) landmark model explains aesthetic preference by positing opposing reward and aversion systems that respond to collative properties of art. Figure 1 shows the joint effect of the two systems. A primary reward system creates positive affect as arousal potential increases; after a point, a primary aversion system creates negative affect as arousal potential increases. Because the reward system reaches an asymptote and the aversion system does not, the two systems jointly create an inverted-U affect function. Berlyne's model addresses negative

experience via the action of the primary aversion system, but positive aesthetic experience—particularly the dimensions of pleasingness and interestingness—received nearly all of the attention in the Berlyne tradition (Silvia, 2006b, chap. 2).

## **FIGURE 1 IS OMITTED FROM THIS FORMATTED DOCUMENT**

Berlyne's explanation of negative aesthetic experience has two major limitations. First, the model posits only undifferentiated aversion in response to high arousal potential. Art can be aversive in many respects—people can be angry, sad, disgusted, or anxious—but Berlyne's model does not make predictions about specific negative states. Second, the model presumes that positive aesthetic experience always appears simultaneously with negative experience. At high levels of arousal potential, the reward and aversion systems are both operating (see Figure 1). This assumption leads to the awkward prediction that someone who intensely dislikes a painting also enjoys it, only less so.

### **Martindale's Prototypicality Model**

An alternative model, developed by Martindale, proposes that people prefer art that is prototypical (in depiction or in style) for its category (Martindale & Moore, 1988). Research in cognition and emotion shows that people prefer prototypical faces, objects, and animals (see Halberstadt, 2006), and aesthetics research shows that preferences are influenced by prototypicality (Martindale, Moore, & Borkum, 1990; Martindale, Moore, & West, 1988). Much of the research has used simple stimuli, like color chips (Martindale & Moore, 1988) or random polygons (Martindale et al., 1990), but some studies have found strong prototype-preference effects for stylistic categories (Farkas, 2002) and designed objects (Hekkert, Snelders, & van Wieringen, 2003).

It is hard to derive predictions about negative emotions from a prototypicality model. First, what feelings arise from nonprototypical works? If people prefer works central to a category, how do they feel about works peripheral to a category? Peripheral art could be aversive, but that would leave the question of how people experience neutral, indifferent feelings. Second, a single independent variable cannot predict differentiated negative emotions, such as fear, anger, sadness, disgust, and contempt. And finally, most people probably have a category of “obscene art” or “controversial art,” and works like Serrano's *Piss Christ* and Kovat's *Virgin in a Condom* are typical for those categories. A prototypicality model could be forced into the awkward prediction that people would like prototypically offensive art.

### **Processing Fluency**

Reber, Schwartz, and Winkielman (2004) proposed that art is beautiful when it is easy to process. Research shows that images that are easily processed—by virtue of familiarity, priming, or perceptual contrast—are more pleasant (Winkielman & Cacioppo, 2001), although researchers disagree over whether fluent processing is inherently positive (Winkielman, Schwarz, Fazendeiro, & Reber, 2003) or not (Unkelbach, 2006). The prototypicality and processing fluency models are similar in their predictions and mechanisms—prototypical objects are easier to process (Winkielman, Halberstadt, Fazendeiro, & Catty, 2006)—and they share the same

limitations. High processing-fluency causes positive feelings, but it is unclear whether low fluency causes a neutral state or a negative emotional state. And if low fluency causes a negative state, it is unclear which kind of negative state occurs (e.g., anger, disgust, fear, sadness, contempt). Like the prototypicality model, the processing fluency model has only one variable (ease of processing), which makes it hard to explain diverse emotions (anger, disgust, fear).

### **Summary**

Past theories show two major limitations. First, some theories (Martindale et al., 1990; Reber et al., 2004) have a hard time explaining why negative emotions would happen at all, given their inability to discriminate between neutral and negative feelings. Second, none of the theories can discriminate between negative feelings; at best, they propose an undifferentiated feeling of aversion (Berlyne, 1971). The challenge, then, is to develop a model that can explain (1) when negative aesthetic emotions happen and (2) how similar negative emotions differ from each other.

### ***Appraisal Theories and Aesthetic Emotions***

A recent model of aesthetic emotions (Silvia, 2005a, 2005b) connects emotional responses to art to the cognitive processes that undergird emotions (see Robinson, 2005, for a similar approach). Appraisal theories of emotion propose that emotions come from people's evaluations of events, particularly evaluations of how events relate to important goals, values, and concerns (Ellsworth & Scherer, 2003; Lazarus, 1991; Roseman & Smith, 2001). These evaluations, known as *appraisals*, give rise to emotions. Appraisal theories are inherently subjective—the appraisals of events, not events themselves, cause emotions. As a result, it is easy for appraisal theories to explain why people have different emotions to the same event (Roseman & Smith, 2001), why a person's emotional responses to the same event change over time, and why different traits, skills, and values can predict emotions (e.g., Silvia, 2006a).

Appraisal theories of emotion address a broad swath of emotions: positive emotions like happiness, interest, and pride; negative emotions like sadness, fear, anger, disgust, shame, and contempt; and fringe emotions like confusion, love, and hope. As a result, appraisal theories have a lot to say about when people experience negative emotions. In an appraisal model, each emotion is traced to a set of appraisals that cause the emotion; this set is known as an *appraisal structure* (Scherer, 2001). The appraisal structure of fear, for example, involves several appraisals:

1. Goal relevance: whether an event impinges on an important goal, value, or concern
2. Goal congruence: whether an event furthers or obstructs a goal
3. Coping potential: whether a person can overcome a challenge, broadly conceived (e.g., avoiding harm, preventing a threat, handling barriers to a goal)

Appraisals of high goal relevance, low goal congruence, and low coping potential should lead to fear (Lazarus, 1991; Scherer, 2001). The appraisal structure of happiness, in contrast, involves two appraisals:

1. Goal relevance
2. Goal congruence

Appraisals of high goal relevance and high goal congruence should cause happiness (Lazarus, 1991).

The examples of fear and happiness illustrate how appraisal theories describe similarities between emotions. Intuitively, people see fear and happiness as different, even as prototypes of opposing categories of “negative emotions” and “positive emotions.” From an appraisal perspective, however, fear and happiness are a lot alike. Like happiness, fear involves appraising an event's goal relevance and goal congruence. Unlike happiness, fear involves an additional appraisal of coping potential. Differentiating emotions based on appraisal structures allows us to specify subtle differences between similar emotions, as we will see later with the emotions of anger and disgust.

### *Anger and Disgust as Aesthetic Emotions*

Anger and disgust are important negative emotions. Associated with aggression and self-assertion, anger motivates an assertive response when important goals are threatened (Kuppens, Van Mechelen, Smits, & De Boeck, 2003). Anger is an approach-oriented emotion (Berkowitz & Harmon-Jones, 2004)—when angry, people try to deal with the threat to their goals. Associated with revulsion, disgust motivates the avoidance of contamination (Olatunji & Sawchuk, 2005; Rozin & Fallon, 1987), be it physical (e.g., ingesting noxious food) or symbolic (e.g., a defiling person, idea, or object; Rozin, Lowery, Imada, & Haidt, 1999). Unlike anger, disgust is avoidance-oriented—people withdraw from the disgusting object, consistent with *repulsive* as a synonym of *disgusting*. Anger and disgust are common responses to aesthetic objects: people with traditional tastes can be disgusted and angered by confrontational works, and people with advanced tastes can be angry at mass-produced, sappy landscapes intended to exploit ignorant audiences (see Lindauer, 1990, 1991).

Based on appraisal theories, we can develop predictions about the appraisals of art that will lead to anger and disgust.<sup>1</sup> The appraisal structure for anger involves appraisals of (1) *goal congruence*, particularly that an aesthetic object goes against one's goals or values, and (2) *intentionality*, particularly that the artist was intentionally trying to impugn one's goals or values. Appraising an event as intentionally goal incongruent is the core of anger (Kuppens & Van Mechelen, 2007). The appraisal structure for disgust involves appraisals of (1) *goal incongruence* and (2) *intrinsic pleasantness*, particularly that an object has aversive perceptual or sensory qualities (Scherer, 2001). Appraising an event as goal incongruent and aversive is the core of disgust (cf. Rozin et al., 1999).

These appraisal structures illustrate how anger and disgust are similar and different. Both emotions involve appraising an event as incongruent with goals or values, but (1) anger involves appraising the affront as deliberate whereas disgust does not, and (2) disgust involves appraising the events as inherently aversive, whereas anger does not (Scherer, 2001). An appraisal approach can thus make subtle predictions about differences between similar emotions.

### *The Present Experiment*

The present experiment examined whether cognitive appraisals predicted anger and disgust in response to visual art. Our research had three aims. First, we wanted to examine negative emotions, which have received little attention in the psychology of the arts. Second, our

experiment sought to fill a gap in the appraisal model of aesthetic emotions, which thus far has explored only positive emotions like interest and enjoyment (Silvia, 2005a, 2005c, 2006a; Turner & Silvia, 2006). And finally, we wanted to illustrate how the appraisal model can make successful predictions for contexts in which past models are ineffective.

## *Method*

### **Participants and Design**

A total of 58 people—46 women, 12 men—enrolled in General Psychology at the University of North Carolina at Greensboro participated as part of a research participation option. We did not analyze gender differences because of the small number of men. The ratio of women to men was typical for research conducted at University of North Carolina at Greensboro.

### **Procedure**

People participated in groups of 4 to 8. Upon arriving at the laboratory, people were seated at individual tables and given a consent form. The experimenter explained that the study was about different people's impressions of diverse kinds of art. She pointed out that some people might find some of the pictures to be in poor taste and offensive, and she emphasized that the purpose of the experiment was to understand how people feel about art, not to offend people or to disparage their beliefs. People were encouraged to be candid in their responses to the artworks, and they were asked not to put their names or any personally identifying information on the questionnaire.

Each person then received a questionnaire, which contained black-and-white reproductions of eight paintings and photographs. Several of the works were offensive (e.g., Andres Serrano's *Piss Christ*); the others were conventional (e.g., Claude Lorraine landscapes). After viewing each picture, people answered questions about their appraisals of the picture and about their emotional responses to the picture. Disgust was measured with one item, "I find this picture disgusting." Anger was measured with "This picture makes me angry." Appraised goal incongruence was measured with "This picture goes against my values." Appraisals of pleasantness were measured with "This picture is pleasant." Appraised intentionality was measured with "The artist is intentionally trying to offend people like me." Each question had a 1 to 7 response scale (endpoints: *not at all* and *yes, definitely*).

## *Results*

### **Overview of the Analytic Strategy**

We used multilevel modeling to estimate the relationships between appraisals and emotions (see Silvia, 2007). Among its many advantages, multilevel modeling allows us to estimate the *within-person* relationships between appraisals and emotions (Hox, 2002; Luke, 2004). Within-person analyses fit our hypotheses—appraisal–emotion relations are presumed to covary within the person, not merely within the sample—and within-person analyses resist the "third-variable problem" that besets between-person analyses (Nezlek, 2001). Individual differences that would be relevant to anger and disgust at art—such as openness to experience, training in the arts, or political ideology—vary between people but are invariant within-person. A score that does not vary within the person obviously cannot explain the within-person covariance of appraisals and emotions.

The multilevel analyses were computed with HLM 6 using restricted maximum-likelihood estimation. All effects were estimated as random effects. The Level 1 predictors were centered at each person's mean.

### Anger

What appraisals predicted anger? According to Scherer's (2001) model, anger entails appraising an event as (1) incongruent with one's goals and values, and (2) as intentionally caused. We tested this model using the following equations:

$$\begin{aligned} \text{Level 1: Anger}_{ij} &= B_{0j} + B_{1j}(\text{Value Congruence}) \\ &\quad + B_{2j}(\text{Intended}) + B_{3j}(\text{Disgust}) + r_{ij} \\ \text{Level 2: } B_{0j} &= \gamma_{00} + u_{0j} \end{aligned}$$

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

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

$$B_{3j} = \gamma_{30} + u_{3j}$$

In short, anger is a linear function of an intercept ( $B_{0j}$ ), slopes that represent the effects of the two appraisals and within-person residual variance. These intercepts and slopes are estimated as a function of the average intercepts and slopes across the entire sample (the  $\gamma$  coefficients) and residual between-person variance (the  $u$  coefficients). Ratings of disgust are included to control for the overlap between anger and disgust.

As expected, both appraisals significantly predicted anger. Ratings of anger increased as people appraised the pictures as more incongruent with their values,  $b = .333$ ,  $SE = .078$ ,  $t(57) = 4.23$ ,  $p < .001$ , and as being intentionally offensive,  $b = .190$ ,  $SE = .067$ ,  $t(57) = 2.83$ ,  $p < .007$ . Not surprisingly, disgust predicted anger as well,  $b = .250$ ,  $SE = .063$ ,  $t(57) = 3.94$ ,  $p < .001$ .

### Disgust

What appraisals predicted disgust? According to Scherer's (2001) model, disgust entails appraising an event as (1) incongruent with one's goals and values, and (2) as inherently unpleasant. We tested this model using the following equations:

$$\text{Level 1: Disgust}_{ij} = B_{0j} + B_{1j}(\text{Value Congruence}) \\ + B_{2j}(\text{Pleasantness}) + B_{3j}(\text{Anger}) + r_{ij}$$

$$\text{Level 2: } B_{0j} = \gamma_{00} + u_{0j}$$

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

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

$$B_{3j} = \gamma_{30} + u_{3j}$$

As before, the related emotion of anger was controlled for when estimating the relations between appraisals and disgust.

As expected, both appraisals significantly predicted disgust. Ratings of disgust increased as people appraised the pictures as more incongruent with their values,  $b = .501$ ,  $SE = .062$ ,  $t(57) = 8.02$ ,  $p < .001$ , and as more unpleasant,  $b = -.339$ ,  $SE = .038$ ,  $t(57) = 8.85$ ,  $p < .001$ . Not surprisingly, anger predicted disgust as well,  $b = .258$ ,  $SE = .069$ ,  $t(57) = 3.73$ ,  $p < .001$ .

### **Distributions of Appraisal–Emotion Relations**

One advantage of multilevel modeling is that it allows us to estimate the relations between appraisals and emotions for each person in the sample. The overall coefficients show that, on average, a person's appraisals strongly predicted his or her emotions. The aggregated coefficients, however, can conceal individual differences in how appraisals predict emotions. For example, if disgust comes from unpleasantness for some people and from goal incongruence for other people, then, on average, it will seem that disgust comes from both unpleasantness and goal incongruence (cf. Kuppens, Van Mechelen, Smits, & De Boeck, in press).

One way to assess the invariance of appraisal–emotion relations is to plot the slopes relating appraisals to emotions (Silvia, 2005a). The percentage of positive slopes indicates the percentage of people for whom appraisals predicted emotions in the expected directions. Figure 2 shows the distribution of within-person slopes for anger. These histograms represent the frequencies of the unstandardized regression weights relating the appraisals to anger. For appraisals of goal incongruence, 91% (53 of 58) were positive. For appraisals of intentionality, 93% (54 of 58) were positive. Figure 3 shows the distributions of within-person slopes for disgust. For both appraisals, 100% of the slopes were in the proper direction. Thus, the appraisal model's predictions received uncommonly strong support—the predictions were met for the sample as a whole and for nearly every person within the sample.

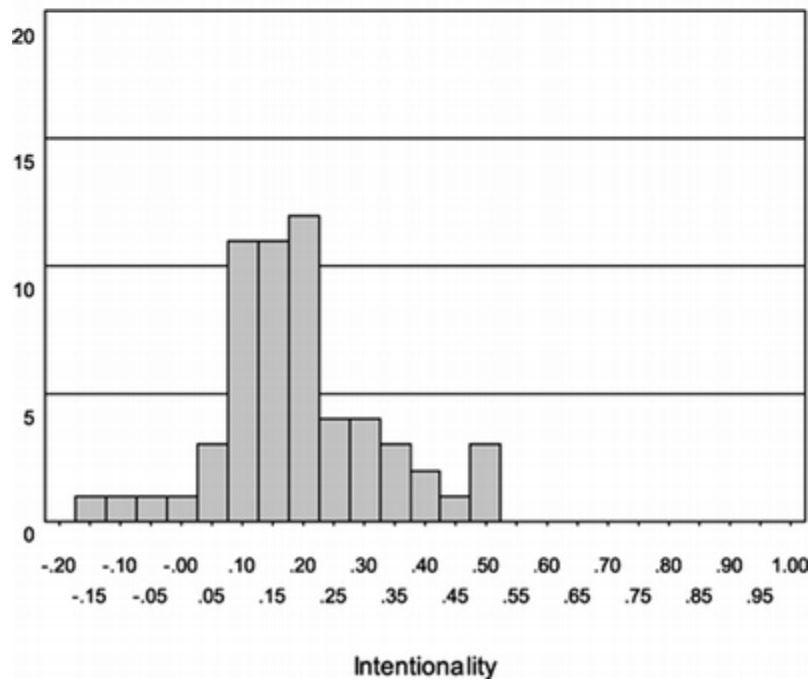
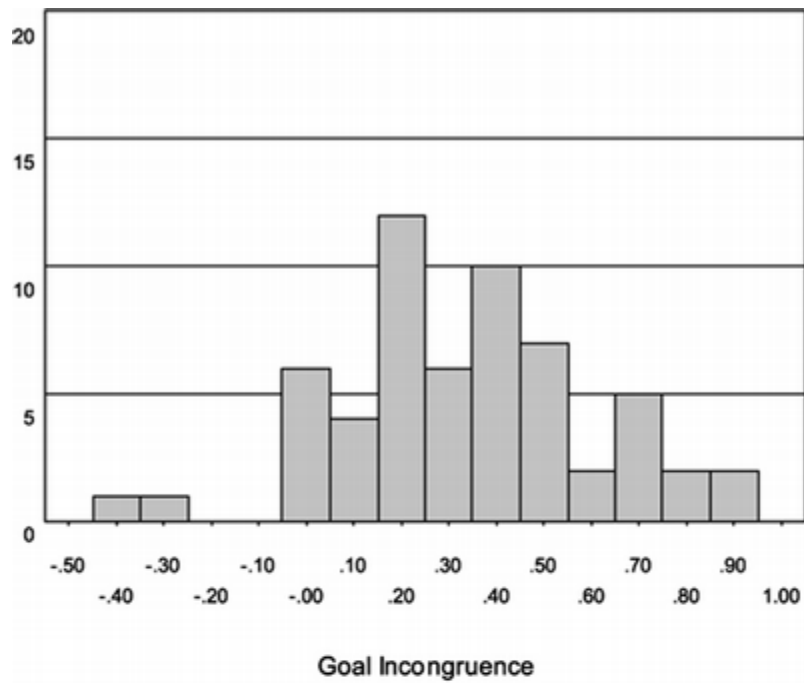


Figure 2. Distributions of the within-person slopes relating appraisals of goal incongruence (top) and intentionality (bottom) to anger.



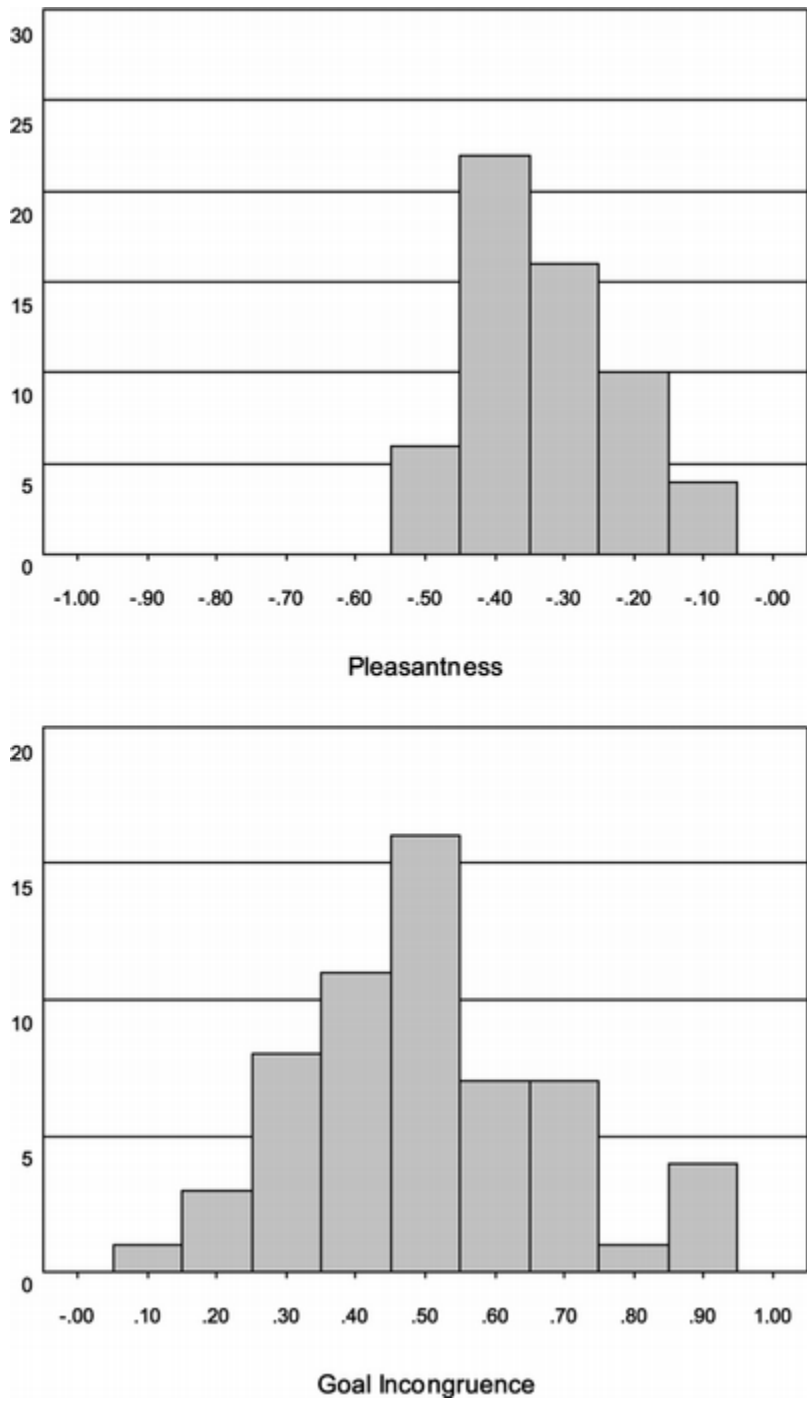


Figure 3. Distributions of the within-person slopes relating appraisals of pleasantness (top) and goal incongruence (bottom) to disgust.

### General Discussion

#### Appraisals, Anger, and Disgust

Modern research on aesthetics, like past research, heavily emphasizes positive responses to the arts over negative responses (e.g., Levorato & Ronconi, 2006; Nadal, Marty, & Munar, 2006; Smith, Bousquet, Chang, & Smith, 2006). The present experiment examined anger and disgust in

response to art. Earlier in this article, we contended that past theories have a hard time explaining negative aesthetic emotions. Appraisal theories, in contrast, easily explain negative aesthetic emotions. Anger and disgust should occur when people make the appraisals that constitute each emotion's appraisal structure. Furthermore, similar emotions like anger and disgust can be differentiated based on the differences in their appraisal structures. In the experiment, people viewed controversial and conventional images and gave ratings of emotions and appraisals for each picture. Within-person analyses showed that appraisals of the images strongly predicted emotional responses to the images: anger was associated with appraisals of goal incongruence and intentionality, and disgust was associated with appraisals of goal incongruence and unpleasantness.

Appraisal theories contend that emotions come from people's personal understandings of events—subjective appraisals of what an event means for oneself, not objective stimulus features, cause emotions. It is no surprise, then, that different people will have different emotional responses to an event. Even extreme stimuli, such as blasphemous and offensive art, will provoke a range of reactions. In the present sample, anger in response to *Piss Christ* had a U-shaped distribution: 39% of the sample marked a 6 or 7 on the 1 to 7 scale “This picture makes me angry,” and 36% of the sample marked a 1 or 2. Negative aesthetic emotions are in the eye of the appraiser—they come from evaluations of how art relates to one's goals and values—so even cheery, benign art can make people mad. Some art historians, for instance, become angry and contemptuous in response to the tranquil landscape paintings of Thomas Kinkade because they appraise features of Kinkade's work—mass-production, naive sentimentality, and pandering to an antiart audience—as contrary to their values. As art critic Kenneth Clark contended, “[Thomas Kinkade's] works are facsimiles of something inherently dead. Escapism is not art. He might as well not exist. He could just be a branding concept. He might as well be selling hamburgers” (della Cava, 2002).

It is worth emphasizing that the within-person analyses rule out common “third variable” explanations. The coefficients indicate the average within-person relationships between appraisals and emotions, and within-person relationships are unconfounded by between-person variables (Nezlek, 2001). Furthermore, the within-person analyses allowed us to examine variability in the within-person effects. As Figures 2 and 3 show, the appraisal–emotion relations were in the predicted directions for nearly every person in the sample. The appraisal model's predictions thus received unusually strong support.

### **Are Negative Emotions Aesthetic Emotions?**

Negative aesthetic emotions pose an interesting question: are all emotions aesthetic emotions, or do only some emotions qualify? Some researchers restrict the class of aesthetic emotions to a few emotions, typically positive ones. Konečni (2005), for example, regards feelings of being moved, awe, and thrills as the central aesthetic feelings (cf. Keltner & Haidt, 2003). Others have suggested that the central aesthetic emotion is the experience of beauty (Reber et al., 2004), interest (Tan, 2000), or disinterested pleasure (see Robinson, 2005, for a review). On the other hand, some researchers have proposed that all emotions are aesthetic emotions (Lazarus, 1991, pp. 292–296). People can experience the full range of human feelings in response to art, so modern researchers should not restrict themselves to the handful of feelings that have been popular with past theories.

Whether or not an emotion “really is” an aesthetic emotion is an unanswerable and unproductive question; whether an emotion deserves more attention from researchers interested in aesthetics, however, is a straightforward question. We see two reasons why negative emotions deserve more attention. First, negative emotions form the core of cultural and ideological conflicts over the arts. We doubt that a photograph like *Piss Christ* is attacked because people find it hard to process, atypical of its category, or too complex. Instead, controversial art makes some people mad, and one of anger's consequences is a tendency to aggress against the perceived source of affront. Understanding censorship, funding disputes, class differences in art preferences, and the defacement of art requires understanding negative reactions to the arts. Second, artists often try to express negative emotions in their work and attempt to evoke negative emotions in the audience, thereby spurring the audience to reflect on and learn from the negative feelings (Robinson, 2005). To be credible, a psychology of aesthetics must have something to say about how this works.

### **Emotion Psychology and the Arts**

One of Berlyne's (1971, 1974) most influential ideas was his proposal that psychologists could study aesthetics using mainstream theories of motivation and emotion. This idea detached psychological aesthetics from philosophical aesthetics and rooted the fledgling field of experimental aesthetics within established, successful theories. Berlyne's (1971) model of aesthetics, for example, was a straightforward application of his model of arousal and reward (Berlyne, 1967). Later theories of aesthetics disagreed about which models of motivation and emotion apply to aesthetic experience, but they agreed that aesthetics can be explained using mainstream psychological concepts (e.g., Martindale et al., 1990; Reber et al., 2004). Our appraisal approach to aesthetic emotions follows in this tradition. We agree with Berlyne's claim that psychology can create its own aesthetic theories: psychology should take inspiration from philosophy and art history, but it need not adhere to ideas found in these areas.

Our model of aesthetic emotions is a simple extension of appraisal theories of emotion, but interdisciplinary research should go both ways: emotion psychology offers a powerful perspective on aesthetics, and the study of aesthetics informs and enhances mainstream emotion psychology. Research on emotion has emphasized emotions in response to major adaptational crises (e.g., fear in response to threat, sadness in response to loss) or to significant personal events (e.g., happiness in response to important events). There is no question that emotions facilitate adaption to major events (Lazarus, 1991), but emotions influence all areas of everyday life. The psychology of aesthetics illuminates how people create objects (e.g., paintings, plays, and feature films) to manipulate others' emotions, how people structure their environments to foster particular emotions (e.g., choosing art posters to hang on a bedroom wall), and how the deep evolutionary history of emotion intersects with the pancultural practice of the arts. The psychology of emotion and the psychology of aesthetics thus have much to offer each other.

### **Footnotes**

<sup>1</sup> Appraisal theories disagree on the appraisals that cause an emotion. Some appraisal theories propose complex appraisal structures (e.g., Scherer, 2001); other theories propose simple appraisal structures (e.g., Lazarus, 1991; Smith & Ellsworth, 1985). Nevertheless, there's substantial agreement overall (Ellsworth & Scherer, 2003), and the appraisal structures that we're

using for the present research are consistent with most appraisal theories. Appraisals of goal relevance are omitted here (and not measured in the experiment) because they are implicated in nearly all emotions, and our interest is in how anger and disgust differ.

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