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# Can Mixed Emotions Peacefully Co-Exist?

## **Abstract**

This research sheds insight on the psychological impact of mixed emotions on attitudes. In three experiments, we show that persuasion appeals that highlight conflicting emotions (e.g., both happiness and sadness) lead to less favorable attitudes for individuals with a lower propensity to accept duality (e.g., Anglo Americans, younger adults) relative to those with a higher propensity (e.g., Asian Americans, older adults). The effect appears to be due to increased levels of felt discomfort that arise for those with a lower, but not higher, propensity to accept duality when exposed to mixed emotional appeals. Theoretical implications regarding boundary conditions of emotional dissonance and distinctions between emotional and cognitive dissonance are discussed.

## **Keywords**

advertising, affect/emotions/mood, attitudes, cross-cultural research, persuasion

## **Disciplines**

Business | Cognition and Perception | Cognitive Psychology | Comparative Psychology | Marketing

## CAN MIXED EMOTIONS PEACEFULLY CO-EXIST?

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This research sheds insight on the psychological impact of mixed emotions on attitudes. In three experiments, we show that persuasion appeals that highlight conflicting emotions (e.g., both happiness and sadness) lead to less favorable attitudes for individuals with a lower propensity to accept duality (e.g., Anglo Americans, younger adults) relative to those with a higher propensity (e.g., Asian Americans, older adults). Experiment 1 demonstrates that this effect appears to be due to increased levels of felt discomfort that arise for those with a lower, but not higher, propensity to accept duality when exposed to mixed emotional appeals. Experiments 2 and 3 replicate this result across product categories and distinct operationalizations of duality acceptance, and show that results are not due to differences in the recognition of depicted emotions. Theoretical implications regarding boundary conditions of emotional dissonance and distinctions between emotional and cognitive dissonance are discussed.

Consider a recent appeal for the insurance company, New York Life (actual ad, circa 2001). The television advertisement focuses on a widow and her children grieving over the loss of their beloved husband and father, yet at the same time expressing gratitude for the sense of comfort and security that his life insurance policy is able to provide for them. Similarly, embedded in a recent issue in a *Rolling Stones* magazine is a two-page print advertisement filled with white space and the single sentence, “She can make me laugh even when I’m mad at her,” closing with “That Certain Something, Diet Coke.”

The above examples illustrate the use of mixed emotions in persuasive appeals. While considerable research in consumer behavior has focused on the influence of pure emotions in persuasion (e.g., Aaker and Williams 1998; Burke and Edell 1986; Edell and Burke 1987; Holbrook and Batra 1987), less work has been done on the topic of experiencing mixed emotions and the consequences of doing so. A growing interest in the emotional nature of persuasion processes, and the role of conflicting psychological states in particular, make this gap in the consumer behavior literature even more significant (c.f., Bagozzi, Wong and Yi 1999; Mick and Fournier 1998).

In contrast, psychologists have been very interested in the topic of mixed emotions, emphatically debating the degree to which conflicting emotions can be simultaneously experienced. One perspective suggests that the ability to experience conflicting emotions simultaneously is limited, as positive and negative emotions represent opposite dimensions on a bipolar scale (Green, Goldman and Salovey 1993). A second perspective argues the opposite, namely that emotional valence is represented by two independent dimensions. Thus, not only can one simultaneously experience conflicting emotions, such joint experience may be natural and frequently occurring (Cacioppo, Gardner and Berntson 1997; Larsen, McGraw and Cacioppo in press).

Despite the increasing interest in mixed emotions in psychology, there has been little effort to examine the impact of mixed emotional experiences in the context of consumer behavior, or the impact such experience might have on persuasion outcomes such as attitudes toward a persuasive appeal. While the debate continues about the degree to which positive and negative emotions have a bipolar versus independent relationship, advertisers are using mixed emotions in appeals, as illustrated above. We bring together previous work on the experience of duality in consumer behavior with an examination of the simultaneous experience

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of conflicting emotions in order to explore how mixed emotions are experienced, what impact such experience might have on persuasion outcomes, and why these outcomes may arise.

### DUALITY AND THE PROPENSITY TO ACCEPT IT

The acceptance of duality, which refers to the ongoing process of accepting and synthesizing contradiction in elements or forms (Basseches 1980), has been a focus of research in philosophy, religious studies, anthropology and psychology. Consumer researchers have identified a number of circumstances under which individuals experience duality in consumption settings and have discussed how consumers try to reconcile such experiences. For example, Mick and Fournier (1998) examine conflicting psychological states due to the paradoxical meanings and influences that technology portends in daily life.

Much of the work on paradox or duality has focused on the negative consequences associated with such experience (e.g., anxiety and stress; Freud 1938). Hegel, for example, argued that alienation, or the cutting off from reality, occurs when thoughts are in conflict and cannot be resolved. In the domain of consumer behavior, Rook (1985) finds that impulsive buying behavior raises a conflict between pleasure and reality principles (e.g., income limitations), which becomes a source of emotional conflict for the consumer.

However, some research suggests that contradictory elements do not always lead to negative outcomes. For example, Scott (1994) argues that some advertisements containing dialectical elements (e.g., a Honda ad conveying both the negative emotions felt when experiencing cramped space as well as the positive emotions associated with experiencing openness) may not lead to negative outcomes, but instead may give rise to a third independent emotion (e.g., amusement based on the cleverness of the ad), potentially leading to positive evaluations.

Under what circumstances might the experience of duality lead to negative outcomes? The current research posits that the degree to which negative consequences fall from exposure to duality or mixedness is influenced by the extent to which individuals can process and accept duality, a moderating variable that may vary both across situations and across individuals. Proclivity to accept duality has been shown to vary with psychological characteristics (e.g., motivation; Kahle et al. 2000), demographic characteristics (e.g., education level; Basseches 1980), and characteristics of a decision problem (e.g., complex extended decisions; Kahle et al. 2000). The majority of research, however, has focused on documented differences in the proclivity to accept duality among individuals with distinct cultural backgrounds (e.g., cultures differentially influenced by Confucianism and Buddhism versus the Enlightenment and Christianity; Rothbaum and Tsang 1998) and individuals of varying maturity levels (e.g., younger versus older adults; Basseches 1980). We first review cultural differences in the proclivity to

accept duality and then turn to age differences, drawing attention in each case to the experience and acceptance of conflict particularly with respect to emotions.

### The Differential Acceptance of Duality Across Cultures

The underlying tenet in Confucian and Buddhist philosophies is that reality is flexible and constantly changing. Therefore, contradictions are likely to be perceived as both natural and common. A guiding principle is holism, which suggests that all things must be understood in relation to everything else, and that entities can be opposed to one another and yet also be connected in time and space and be perceived as a whole. This principle is reflected in formal writings, such as the I Ching, as well as in more contemporary writings. In a recent content analysis of proverbs, for example, four times as many dialectical proverbs (proverbs that contain seeming contradictions; e.g., beware of your friends not your enemies) were found in Chinese than in American books (12% vs. fewer than 3%; Peng and Nisbett 1999). Moreover, dialectical proverbs tend to be preferred over nondialectical proverbs (proverbs that contain no contradictions; e.g., one against all is certain to fall) by Chinese individuals, while the opposite is true for Americans (Peng and Nisbett 1999; see also Briley, Morris and Simonson 2000).

These philosophical traditions differ from those heavily influenced by the Enlightenment and Christianity. Western cultures, in particular, tend toward the rejection of duality in part due to the impact of Aristotelian logic, which emphasizes three key principles: the law of identity (i.e., things are what they are and nothing else), the law of non-contradiction (i.e., no statement can be both true and false; thus A cannot equal not-A), and the law of the excluded middle (any statement is either true or false, implying that there is no middle ground). This philosophical tradition has limited the degree to which members of Aristotelian-influenced cultures tend to engage in dialectical processing. Instead, this tradition tends to encourage more nondialectical processing, where the recognition of contradiction often leads to the (a) polarization of the sources of contradiction (e.g., focusing on one source to the exclusion of the other; Aaker and Sengupta 2000) or (b) integration of the opposing sources through taking multiple perspectives when thinking about the sources (Tetlock 1983).

Differences in the acceptance of duality also manifest themselves within emotional constructs and the extent to which contradictory elements define them. For example, emotional associations with love vary across cultural contexts. A distinctive quality in Samoan romantic ties, for example, is co-existing feelings of alofa (nurturant, deep affection) and conflict or anxiety (Shore 1996). Similarly, emotional associations, as portrayed in popular love songs, also appear to vary (Rothbaum and Tsang 1998). While striking similarities in the expression of positive emotions such as desire, romanticism and passion are found in both Chinese and American love songs, a consistent culture-based

difference in the frequency with which negative emotions are conveyed is also observed. That is, whereas American love songs appear to associate love either exclusively with positive or with negative emotions, Chinese love songs are more likely to associate love with both positive and negative emotions, such as suffering, mourning, and regret (Shaver, Wu and Schwartz 1992).

More direct support for the premise that individuals in East Asian relative to North American cultures are more at ease with experiencing conflicting emotions is provided by Bagozzi et al. (1999). In one study, for example, the researchers asked individuals at the University of Michigan and University of Beijing to assess the felt intensity and frequency of their own emotions, both positive (e.g., happiness, joy, enjoyment) and negative (e.g., sadness, anger, anxiety). Results showed that negative and positive emotions were positively correlated for the Chinese individuals, but negatively correlated for the Americans. These culture-based differences appear to be consistent with the distinct ways of experiencing positive and negative events. For example, the Tao-te Ching epitomizes the dialectical view in Chinese culture, whereby a favorable event leads to the experience of a positive emotion, tempered by a negative emotion. When positive events occur, there is an inclination not to be overly happy, but rather to acknowledge that things may turn for the worse in the future.

#### **The Differential Acceptance of Duality with Age**

In addition to cultural differences in the proclivity to accept duality, considerable research has demonstrated that with maturity comes a greater ability to accept contradiction and synthesize contradicting elements — to engage in dialectical processing. It is hypothesized that concrete and post-formal operational reasoning, believed to develop in adolescence, may not be adequate to deal with the complexities of later life, particularly the intricacies of both internal and external changes that occur with major life crises or events (Basseches 1980). In support, while concrete operational reasoning remains stable across adult age groups, older adults tend to engage in more dialectical and relativistic processing than do comparably educated young adults (Kramer and Woodruff 1986). The propensity to engage in dialectical processing may relate to wisdom, such that experience leads to greater contextualization of understanding and relativism of values and life goals (Baltes and Staudinger 1993).

Importantly, the enhanced ability of older adults to synthesize conflicting elements may be particularly true in the domain of emotions. Older adults are better able than younger adults to talk about their own emotional experiences, acknowledge complex feelings and endure the tension of conflict between mixed emotions (Labouvie-Vief, DeVoe and Bulka 1989). Moreover, they appear to be less disturbed by the ambiguity and uncertainty of emotionally-laden problems than are young adults (Blanchard-Fields

1997). Malatesta and Izard (1984) also observed that older, compared with younger, women had more complex facial expressions, where multiple emotions were combined in a single expression. Further, the positive correlation between the experience of positive and negative emotions increases with age, and the number of factors characterizing emotional experiences is positively associated with age (Carstensen, Isaacowitz and Turk Charles 1999).

In sum, the research reviewed above suggests different ways in which a dialectic relationship between positive and negative emotions may exist, and therefore hints at different psychological consequences of experiencing conflicting emotions. Below, we review specific psychological outcomes that may result when exposed to mixed emotions, and posit how they may influence attitudes.

#### **Psychological Mechanism and the Role of Felt Discomfort**

Across a wide variety of domains, researchers examining conflict among cognitive or affective elements have suggested that negative affective states result from such conflict, and that these negative affective states must be addressed in some manner. The prototypical psychological research on the experience of conflict, cognitive dissonance (Festinger 1957), which refers to the inconsistency between two thoughts or between thoughts and actions, posits that such conflict creates uncomfortable tensions or discomfort, which in turn prompts cognitive re-appraisal of the underlying elements in order to alleviate the negative state. In consumer behavior, cognitive dissonance effects have been explored with respect to attitude change and repurchase tendencies, as well as the search for selective information by consumers (Cummings and Venkatesh 1976).

Drawing upon cognitive dissonance theory, a number of researchers have provided insight into situations in which individuals experience emotional or affective inconsistency. For example, based on an examination of individual emotional behavior within the context of employing organizations, Hochschild (1983) argues that separation of experienced and expressed emotions leads to emotional dissonance. To reduce this dissonance, emotional laborers (those who, because of organizational norms, are forced to feign or fabricate emotions) must change their felt emotions or engage in “deep acting” to hide their true feelings. Relatedly, social psychologists have turned their attention to situations in which evaluations might be characterized as both highly positive and highly negative at the same time—situations of attitude ambivalence (versus attitude neutrality or cases of predominantly positive or negative attitudes; e.g., Fong and Tiedens 2001). Like cognitive dissonance, attitude ambivalence is considered to be a bothersome, disharmonious state, and out of line with the typical desire for consistency and clear action tendencies (Cacioppo, Gardner and Berntson 1997; Priester and Petty 1996).

Importantly, however, some work has suggested that the generalizability of these hypothesized feelings of discomfort in response to conflict may be limited based upon principles relevant to the propensity to accept duality. For example, Heine and Lehman (1997) show that the discomfort associated with cognitive dissonance does not arise for individuals with greater exposure to East Asian cultures. Therefore, the typical dissonance-driven re-appraisal of the underlying contradictory elements is less likely to occur for individuals with a higher propensity to accept duality. These results are consistent with the notion that, because of a greater degree of comfort associated with the experience and processing of duality, these individuals are less bothered by contradictions, perhaps seeing such conflict as more natural and expected. Consequently, they may be less likely to experience significant discomfort relative to individuals with lower proclivities to accept duality.

The present research is unique from the literature reviewed above in that it focuses upon the simultaneous experience of two conflicting emotions, rather than discrepancies between cognitions, between expressed and felt emotions, or between positive and negative evaluations of attitude objects. However, we build upon this previous work, as well as upon research examining differences in the propensity to accept duality, to propose that simultaneously experiencing conflicting emotions will lead to feelings of uncomfortable inconsistency or psychological discomfort for individuals with a lower proclivity to accept duality. Among individuals with a higher proclivity to accept duality, less discomfort with the experience of emotional conflict is expected. More formally:

**Hypothesis 1:** Individuals with a lower versus higher propensity to accept duality will experience greater feelings of discomfort in response to a mixed emotional appeal.

Furthermore, we suggest that the increased levels of discomfort that arise for individuals with a lower propensity to accept duality will lead to unfavorable attitudes toward the mixed emotional appeal. In contrast, individuals with a higher propensity to accept duality should feel lower levels of discomfort, and therefore should not hold unfavorable attitudes toward the mixed emotional appeal. In other words, we predict a differential attitudinal outcome toward the mixed emotional appeal by these two groups of individuals; a difference that should not occur when exposed to pure emotional appeals. More specifically:

**Hypothesis 2:** For individuals with a lower versus higher propensity to accept duality, less favorable attitudes toward mixed emotional appeals should occur; in contrast, no such differences should arise for pure emotional appeals.

We also examine the psychological processes that underlie the resolution of mixed emotions. We propose that feelings of discomfort will mediate the relationship between emotional appeals and attitudes for all individuals. However,

and importantly, in the case of mixed emotional appeals, more feelings of discomfort should arise for individuals with a lower (versus higher) propensity to accept duality (Hypothesis 1), leading to less favorable attitudes toward the mixed emotional appeals (Hypothesis 2), consistent with a mediational role of discomfort for those with a lower propensity to accept duality. This proposed mediational role of discomfort should not hold in the case of individuals with a higher propensity to accept duality because discomfort should not arise in this group to the degree that it does for those with a lower propensity to accept duality after exposure to mixed emotional appeals. Throughout the research we focus on differential outcomes that are likely to be associated with emotional conflict across groups with lower versus higher propensity to accept duality, rather than any differences in the experience of such conflict. To provide convergent validity for these hypotheses, we operationalize the propensity to accept duality in two ways, through culture (experiments 1, 2) and age (experiment 3).

## EXPERIMENT 1: THE PROCESSING OF CONFLICTING EMOTIONS

### Overview and Design

The objective of experiment 1 is to determine how individuals process and respond to emotional stimuli that incorporate two conflicting emotions. Therefore, we rely on a 3 (Emotional Appeal: Happy versus Sad versus Mixed) x 2 (Culture: Asian American versus Anglo American) between-subjects design, and predict a cross-over interaction between the independent variables. Happiness and sadness were chosen as the core emotions because they tend to be similarly experienced, recognized, and expressed across cultural contexts (Ekman and Friesen 1986; Matsumoto 1990). Further, they are often conceptualized as prototypical examples of emotions with opposing valence and evoke relatively similar levels of arousal, thereby limiting potential confounds (Russell and Carroll 1999).

As in prior research (e.g., Briley et al. 2000), culture was operationalized through ethnic background, Asian American and Anglo American. This choice of sample helps to attenuate potential confounds often associated with country status (e.g., language differences, economic or political conditions). Furthermore, demographic and psychographic variability in the two samples could be limited, thereby further reducing noise in the sample. Finally, the use of these participants should provide a stronger test of our key propositions since within-culture samples tend to be more homogenous relative to between-culture samples.

### Method

#### *Stimuli Development*

To develop the mixed emotional appeal, a pretest was conducted in which Asian American ( $n = 11$ ; 45% female, mean age = 19.9) and Anglo American ( $n = 13$ ; 54% female,

mean age = 20.4) undergraduate students were shown a set of four advertisements intended to evoke both happiness and sadness. All four appeals focused on photographic film, which was selected because persuasive appeals reflecting the intended emotion types could be created. Following Edell and Burke (1987), participants indicated the degree to which they experienced a set of emotions in response to each advertisement (1 = not at all, 7 = very strongly). Further, we drew on prior literature (e.g., Edell and Burke 1987; Holbrook and Batra 1987; Izard 1977) to identify emotional items that would be used to measure felt emotional responses to the appeals. Prior research revealed less consensus on the items used to define sadness relative to happiness, thereby resulting in a larger number of sad (versus happy) items used in the current research: Three items were included to create a Happy index (happy, joyful, delighted;  $\alpha = .90$ ) and eight items were included to create a Sad index (downhearted, sad, depressed, regretful, lonely, distressed, discouraged, sorrowful;  $\alpha = .89$ ). Sixteen filler emotions were also included. The results of a one-way ANOVA on the Happy and Sad indices indicated that an appeal featuring a grandmother and baby led to no significant differences in felt happiness ( $M = 5.42$ ) and sadness ( $M = 4.82$ ;  $F(1, 23) < 1$ ), thus best representing an emotional appeal that was a mixture of both emotions. No culture effects were found ( $F$ 's  $< 1$ ).

#### *Participants and Procedure*

Experimental participants were from the same subject pool, all undergraduate students who participated in return for partial class credit or \$5 and were run in small groups ( $n = 5-15$ ). They were categorized into the two ethnic groups based on self-ratings: Anglo American participants were those who had indicated their ethnic background to be "Caucasian." The Asian American participants were those who had indicated their ethnic background to be "Asian." To provide additional evidence of cultural background, participants were asked their country of birth: 100% of the Anglo American population versus 15% of the Asian American population were born in the U.S. A total of 117 Asian American (51% female, mean age = 24.2) and 87 Anglo American (49% female, mean age = 22.5) undergraduate students were recruited for the study.

Participants were told that the purpose of the study was to assess consumer responses to potential advertisements and they should view the appeal just as if they were reviewing it in a magazine. The stimuli contained a half-page color photograph of a grandmother (named Emma Carolyn Pratt) holding a baby (named Emma Carolyn Groves) on her lap. Emotion type was manipulated in the text next to the photograph. Participants in the happy emotion type condition read, "My Nana, Emma, still seems young and full of life...I love sharing time with her. I'm happy that she has lived long enough to get to know and help raise me." Under the names of the grandmother and baby was a set of dates indicating their years of birth respectively: 1910 for the

grandmother and 1997 for the baby. Participants in the sad condition read, "My Nana, Emma, passed away this past year after battling a long illness. I loved sharing time with her. I miss her." Only one change occurred in the dates: both the grandmother's date of birth (1910) and death (1998) were indicated next to her name (i.e., 1910-1998). This same set of dates was included in the mixed emotion condition; however, here participants read: "My Nana, Emma, passed away this past year after a full and happy life. I loved sharing time with her. I miss her, but am happy that she lived long enough to meet me."

To enhance external validity, positively valenced product content was included in the appeal and was held constant in all conditions (e.g., "Watson color film has top color quality – plus, the texture will always be sharp, never grainy. Just like life."). As the key dependent variable, participants were asked to rate their attitudes toward the advertisement on a three-item scale (Aad; 1 = bad, not at all likable, unfavorable; 7 = good, likable, favorable). In addition, they completed a series of ancillary measures including felt discomfort, manipulation checks for emotion type and demographic information. Finally, participants were debriefed and thanked.

## **Results**

The data were analyzed based on a 3 (Emotion Type) x 2 (Culture) between-subjects analysis of variance. Sample sizes ranged from 21 to 43 in each cell.

#### *Manipulation Checks*

As a check on emotion type, participants rated the extent to which they felt specific emotions after exposure to the appeal on a 7-point scale (1 = not at all, 7 = very). An overall 3 x 2 ANOVA on the Happy index ( $\alpha = .89$ ) yielded a main effect of emotion type ( $F(2, 198) = 19.31, p < .001$ ) such that the happy emotional appeal led to more feelings of happiness ( $M = 4.22$ ) than did either the sad ( $M = 2.87$ ;  $F(1, 198) = 37.22, p < .001$ ) or mixed ( $M = 3.37$ ;  $F(1, 198) = 17.01, p < .001$ ) appeals. In addition, the mixed emotional appeal evoked more happy feelings than did the sad emotional appeal ( $F(1, 198) = 5.64, p < .02$ ). There were no other significant effects ( $F$ 's  $< 1$ ).

Similarly, a main effect of emotion type of the Sadness index ( $\alpha = .89$ ) occurred ( $F(2, 198) = 7.30, p < .001$ ), whereby the sad appeal ( $M = 3.79$ ) evoked more sad feelings than did the happy appeal ( $M = 2.94$ ;  $F(1, 198) = 11.70, p < .001$ ). The mixed appeal ( $M = 3.69$ ) also evoked more sad feelings than the happy appeal ( $F(1, 198) = 10.24, p < .002$ ). There was no difference in feelings of sadness evoked by the sad and mixed emotional appeals ( $F(1, 198) < 1$ ). No other effects were significant (culture,  $F(1, 198) < 1$ ; interaction,  $F(2, 198) = 1.76, p > .18$ ).

In addition to assessing positive and negative emotional indices individually, we combined them to create a measure of emotional ambivalence, or the degree to which emotional responses are truly mixed. To create the measure, we rely

upon the conceptualization and method discussed in Thompson, Zanna and Griffin (1995) where ambivalence is characterized by two necessary and sufficient conditions. First, both components must be of at least moderate intensity. Second, the two emotional components must be of similar magnitude, where both positive and negative emotions are felt to the same degree. A simplification of their similarity-intensity model predicts that ambivalence is a linear function of three times the conflicting reactions minus the dominant reactions, where whichever of the positive or negative reactions is greater in number is referred to as the dominant reaction (D) and whichever is lesser is referred to as the conflicting reaction (C). Thus, Ambivalence =  $3C - D$  (Priester and Petty 1996).

A 3 x 2 ANOVA of the ambivalence index revealed a main effect of emotion type ( $F(2, 198) = 10.29, p < .001$ ), such that the mixed emotional appeal evoked significantly higher levels of ambivalence ( $M = 4.42$ ) than did either the happy ( $M = 3.61; F(1, 198) = 2.85, p < .05$ ) or sad ( $M = 2.19; F(1, 198) = 20.35, p < .0001$ ) emotional appeals. No other effects were significant (culture,  $F(1, 198) < 1$ ; interaction,  $F(1, 198) = 1.82, p > .17$ ).

#### *Felt Discomfort*

To examine the process hypothesized to underlie the relation between emotion type and attitudes, an overall 3 x 2 ANOVA was run on the Discomfort index (uncomfortable, conflicted, confused;  $\alpha = .79$ ; three items drawn from Edell and Burke 1987; Holbrook and Batra 1987; Izard 1977). A 3 x 2 ANOVA yielded a main effect of emotion type ( $F(2, 198) = 3.67, p < .03$ ). Overall the mixed emotional appeal evoked more feelings of discomfort ( $M = 3.68$ ) than did the happy ( $M = 2.97; F(1, 198) = 7.34, p < .01$ ) emotional appeal. Contrasts revealed no significant difference in felt discomfort between the sad appeals ( $M = 3.36$ ) and mixed appeals ( $F(1, 198) = 1.37, p > .24$ ), or between the happy and sad appeals ( $F(1, 198) = 1.94, p > .17$ ). In addition, a marginal main effect of culture ( $F(1, 198) = 3.37, p < .07$ ) was found: Anglo Americans experienced more discomfort ( $M = 3.54$ ) than did the Asian American participants ( $M = 3.14$ ). However, both of these effects were driven by a significant two-way interaction ( $F(2, 198) = 3.02, p < .05$ ), in support of Hypothesis 1. As predicted, planned contrasts showed that Anglo American participants had more feelings of discomfort in the mixed emotional appeal condition ( $M = 4.24$ ) than did Asian American participants ( $M = 3.11; F(1, 198) = 10.58, p < .001$ ). There were no significant culture-based differences in response to the happy emotional appeal ( $M_{\text{Anglo Americans}} = 3.01; M_{\text{Asian Americans}} = 2.92; F(1, 198) < 1$ ), or the sad emotional appeal ( $M_{\text{Anglo Americans}} = 3.34; M_{\text{Asian Americans}} = 3.38; F(1, 198) < 1$ ).

#### *Attitudes*

To test Hypothesis 2, the overall 3 x 2 ANOVA was run on Aad ( $\alpha = .95$ ). The main effect of emotion type was significant ( $F(2, 198) = 9.94, p < .001$ ) indicating more favorable attitudes in the happy ( $M = 4.50$ ) than sad ( $M =$

$3.46; F(1, 198) = 18.00, p < .001$ ) or mixed ( $M = 3.74; F(1, 198) = 11.17, p < .01$ ) appeal conditions. A follow-up contrast yielded no significant difference in attitudes between the mixed and sad appeals ( $F(1, 198) = 1.42, p > .24$ ). In addition there was a main effect of culture ( $F(1, 198) = 3.96, p < .05$ ) such that Asian Americans reported higher attitudes overall ( $M = 4.09$ ) compared with Anglo Americans ( $M = 3.71$ ). However, this effect was driven by a culture by emotion type interaction ( $F(2, 198) = 3.14, p < .05$ ). Planned contrasts showed that the interaction was due to responses to the mixed emotional appeal condition such that Anglo American participants had less favorable attitudes than did Asian American participants ( $F(1, 198) = 11.34, p < .001$ ), in support of Hypothesis 2. In contrast, no culture-based differences were found in response to the pure emotional appeals ( $F$ 's  $< 1$ ). Specifically, Anglo American participants had more favorable attitudes toward the happy ( $M = 4.41$ ) than the sad ( $M = 3.49; F(1, 198), p < .02$ ) or mixed ( $M = 3.22; F(1, 198) = 12.16, p < .001$ ) appeals. There was no significant difference in attitudes among Asian American participants for the happy ( $M = 4.59$ ) and mixed ( $M = 4.26; F(1, 198) = 1.24, p > .26$ ) emotional appeals, and both were preferred over the sad appeal ( $M = 3.43; p$ 's  $< .01$ ).

#### *Process of Mediation*

To shed light on whether the culture effect (Anglo Americans versus Asian Americans) on attitude towards the ad continues to be significant when felt discomfort is introduced as mediator, a mediation analysis was run focusing on just the mixed emotional appeal ad. Following Baron and Kenny (1986), four regressions (a-d below) were conducted. Consistent with (a), Asian Americans had more favorable attitudes toward the mixed emotional appeal than did Anglo Americans ( $\beta = .38, p < .05$ ). Further (b), Asian Americans reported less discomfort after exposure to the mixed emotional appeal than did Anglo Americans ( $\beta = -.45, p < .05$ ). In addition, as predicted (c), higher levels of discomfort led to less favorable attitudes ( $\beta = -.49, p < .0001$ ). Finally (d), discomfort was a significant predictor of attitudes ( $\beta = -.47, p < .0001$ ), while culture was not a significant predictor of attitudes ( $\beta = .16, p > .36$ ). Together, these four regressions provide support for the premise that feelings of discomfort mediate the relationship between the mixed emotional appeal and attitudes, but only for Anglo Americans participants.

To shed additional insight on the underlying process, we also conducted a mediated moderation analysis (Baron and Kenny 1986) that allowed us to examine the full model rather than just focusing on the mixed emotional appeals. A dummy variable was created for the moderating variable, propensity to accept duality. Further, two dummy variables were included in the regression equations to capture the effects of the three emotional appeal conditions. The sad emotional condition was used as the baseline comparative condition. Next, four regressions (a-d below) were conducted to assess the hypothesized mediated moderation relationship. First,



both Aad and feelings of discomfort were regressed on propensity to accept duality, as well as each of the emotion type dummy variables and then upon interactions between culture and each of the emotion type dummies. Results indicated (a) a significant effect of emotion type on attitudes, indicating more favorable attitudes after exposure to the happy ( $\beta = 1.27, p < .001$ ) and mixed ( $\beta = .92, p < .01$ ) appeals relative to the sad appeal. In addition, there was an interaction effect between propensity to accept duality and the mixed emotional appeal condition ( $\beta = -1.19, p < .01$ ), indicating lower attitudes for the mixed emotional appeal among those with a lower propensity to accept duality, as predicted. For (b), the results for the same model with discomfort indicated only an interactive effect between propensity to accept duality and the mixed emotional appeal ( $\beta = 1.17, p < .03$ ), such that feelings of discomfort arose only for those with a lower propensity to accept duality after exposure to the mixed emotional appeal. Next (c), discomfort was a significant predictor of Aad ( $\beta = -.49, p < .001$ ), such that greater feelings of discomfort lowered overall attitudes. Finally (d), Aad was regressed against feelings of discomfort, propensity to accept duality, dummy variables for the emotion type conditions and the interactive terms between those emotion type dummy variables and propensity to accept duality. In this analysis, discomfort remained a significant predictor of attitudes ( $\beta = -.44, p < .001$ ), as did the dummy variables for emotion type (happy  $\beta = 1.05, p < .001$ ; mixed  $\beta = .80, p < .002$ ). However, the interactive effect between mixed emotions and propensity to accept duality was no longer significant ( $\beta = -.68, p > .11$ ), consistent with the mediated moderation hypothesis.

It should be noted that this mediated moderation analysis was also conducted in the two subsequent experiments; the results mirrored the above with one exception. In experiment 3, the beta value of the interaction significantly decreases but remains a significant predictor in equation (d), consistent with partial mediation. For more details, please contact the authors.

## Discussion

Results of this experiment show that while there were no cultural differences in the experience of happiness and sadness in response to either the pure or mixed emotional appeals, there were important differences in how individuals from the two cultures responded to the conflict in the mixed emotional appeal. Anglo American participants had more favorable attitudes towards a happy emotional appeal relative to a sad or mixed emotional appeal, while Asian American participants had more favorable attitudes toward both the happy and mixed emotional appeals relative to the sad emotional appeal. The most salient difference in this overall pattern of attitudes was driven by the mixed emotional appeal, where significantly less favorable attitudes were found for Anglo American relative to Asian American participants.

The mediation analysis provided some insight into why this effect occurred: feelings of discomfort appear to mediate the relationship between the emotional appeals for Anglo American but not for Asian American participants. Further evidence shows that this effect was not driven by differences in the meaning of discomfort, as both Anglo American and Asian American participants had more negative attitudes when they experienced discomfort. Instead, it was the relationship between mixed emotional appeals and feelings of discomfort that varied with cultural background. Thus, the results of experiment 1 are supportive of the premise that differences in the proclivity to accept emotion-based contradiction influence emotional experience and subsequent attitudes.

However, there is at least one area of potential concern in experiment 1. This experiment focused on culture-based differences in felt emotional responses to pure and mixed emotional appeals that lead to different patterns of attitudes. It is possible, however, that the results are instead being driven by differences in emotional perception. Thus, the effects may be the result of differing appraisals of the emotional content rather than differing emotional responses to that content.

Emotion theorists have argued that a cognitively-based appraisal process precedes the actual experience of emotion (Smith and Ellsworth 1985). These appraisal processes, which are believed to be ongoing and automatic tendencies necessary for interpreting the environment, may lead to subsequent arousal and emotional response if, for example, the appraised object is perceived to be adequately self-relevant. Similarly, consumer behavior researchers suggest that individuals appraise the emotional content depicted in persuasion appeals (Burke and Edell 1989), and that such appraisals may lead to felt emotional responses (Stout, Homer and Liu 1990). However, while felt and depicted emotions are often highly correlated, there are some conditions under which the two constructs may be distinct (e.g., highly arousing emotions; Stout et al. 1990). Therefore, despite our intention to focus on felt emotional responses, participants with distinct cultural backgrounds may have perceived the emotional appeals differently. If so, the pattern of results may be based on underlying differences in emotion recognition rather than differences in emotional responses. Experiment 2 is conducted to address this question.

## EXPERIMENT 2: DISENTANGLING FELT AND RECOGNIZED EMOTIONS

### Overview and Design

The primary objective of experiment 2 is to disentangle felt versus depicted emotions by examining differences in emotional appraisal and emotional arousal across cultural contexts, as well as the impact of those differences on attitudes toward mixed and pure emotional appeals. A

second objective is to provide generalizeability of the results found in experiment 1. To reduce the possibility that the results obtained are due to unique aspects of the film product category or the visual nature of the stimuli, experiment 2 relies on a different product category as well as exclusively verbal (non-pictorial) emotional appeals. Therefore, the design used is a 3 (Emotion Type: Happy versus Sad versus Mixed) x 2 (Culture: Asian American versus Anglo American) between-subjects design.

## Method

### *Stimuli Development*

To develop the happy, sad and mixed emotional appeals, a pretest was conducted in which Asian American ( $n = 36$ ; 78% female, mean age = 25.8) and Anglo American ( $n = 47$ ; 61% female, mean age = 25.4) graduate and undergraduate students were shown a set of three advertisements intended to evoke happiness, sadness or both happiness and sadness. The appeals focused on a fictitious moving company (Transportex Movers). A moving company was used because, similar to film, persuasive appeals reflecting the intended emotion types could easily be created. Emotion type was manipulated in the text. Those in the happy emotion condition read: "You've been looking forward to this moment for so long. A new chapter in your life is just beginning, and the future is full of exciting possibilities. You are looking forward to moving to a new neighborhood and the new friends you'll make. It's a happy and exhilarating time -- you want movers who understand this. Movers who will make the move fun. Movers you can trust. Let Transportex handle the details—and all you have to do is enjoy the ride!" Participants in the sad condition read: "You've been dreading this moment, but it's finally arrived. A chapter in your life is ending, and the future is still uncertain. You'll miss the neighborhood and the friends you've made. It's a sad and nostalgic time -- you want movers who understand this. Movers who won't make the move more stressful than it already is. Movers you can trust. Let Transportex handle the details—and you won't have any unhappy memories." Participants in the mixed emotion condition read the following: "The moment has finally arrived. A chapter in your life is ending, but another one is beginning. You'll miss the neighborhood and the friends you've made, but you're also looking forward to the future and the exciting possibilities it holds. It's such a sad and a happy time, but it doesn't have to be stressful, too -- you want movers who understand this. Movers you can trust. Let Transportex handle the details—all you have to do is look back on your old life, and look forward to your new one."

Participants indicated the degree to which they experienced a set of emotions in response to each advertisement (1 = not at all, 7 = very strongly), identical to those examined in experiment 1. A 3 x 2 between-subjects ANOVA on the Happy index ( $\alpha = .92$ ) yielded a main effect of emotion type ( $F(2, 79) = 17.26, p < .001$ ): the happy emotional appeal led to more feelings of happiness ( $M =$

4.21) than did either the sad ( $M = 2.14; F(1, 79) = 26.83, p < .001$ ) or mixed ( $M = 2.67; F(1, 79) = 16.19, p < .001$ ) emotional appeals. In addition, the mixed emotional appeal evoked marginally more happy feelings than did the sad emotional appeal ( $F(1, 79) = 2.25, p < .07$ ). There were no other significant effects ( $F$ 's  $< 1$ ). Similarly, there was a main effect of emotion type of the Sadness index ( $\alpha = .93; F(2, 79) = 14.39, p < .001$ ), whereby the sad appeal ( $M = 3.43$ ) evoked more sad feelings than did the happy ( $M = 1.82; F(1, 79) = 11.70, p < .001$ ) or the mixed ( $M = 2.42; F(1, 79) = 3.32, p < .07$ ) emotional appeals. The mixed appeal also evoked more sad feelings than the happy appeal ( $F(1, 79) = 11.56, p < .001$ ). No other effects were significant ( $F$ 's  $< 1$ ).

### *Participants and Procedure*

A total of 70 Asian American (59% female, mean age = 20.2) and 59 Anglo American (44% female, mean age = 20.7) undergraduate students participated in the study in return for partial course credit and were run in small groups ( $n = 5-15$ ). As in experiment 1, participants were told that the purpose of the study was to assess responses to the copy for potential advertisements and were instructed to review the written copy of an advertisement for a moving company. Participants were randomly assigned to the three emotion type conditions. The primary dependent variable, Aad, remained the same as in experiment 1. However, unique to experiment 2 was an additional set of emotion measures. Participants completed two separate scales regarding: (1) felt emotional responses to the appeals, and (2) recognition of emotions depicted in the appeals (1 = not at all, 7 = very strongly). The same set of emotional items used in experiment 1 was used to measure both felt and depicted emotions. However, the instructions differed. Adapted from Edell and Burke (1987), participants were either first instructed, "We would like you to tell us what types of emotions the ad depicts or is trying to depict. In this question, we are not interested in your own feelings or emotional reactions to the ad, but rather in what emotions you think the ad was trying to depict" (depicted emotions measure) or "We would like you to tell us how the ad you just saw made you feel. In this question we are interested in your feelings or emotional reactions to the ad, not how you would describe it or the emotions you think the ad was trying to depict" (felt emotions measure, same as that used in study 1 to assess emotional responses), the order of which was counterbalanced across subjects. Finally, participants completed manipulation checks and demographic questions.

## Results

A 3 (Emotion Type) x 2 (Culture) x 2 (Question Order) yielded no main or interactive effect of order (felt or depicted emotions asked first,  $F$ 's  $< 1$ ). Thus, the data were analyzed via a 3 (Emotion Type) x 2 (Culture) between-subjects ANOVA. Sample sizes ranged from 16 to 26 in each cell.

### Manipulation Checks

To determine the extent to which the appeals depicted the emotions intended, an overall 3 x 2 ANOVA was conducted on the depicted Happy index ( $\alpha = .88$ ) and yielded a significant main effect of emotion type ( $F(2, 124) = 19.99, p < .001; m_{\text{happy}} = 5.08, m_{\text{sad}} = 2.92, m_{\text{mixed}} = 3.99$ ; all contrasts  $p$ 's  $< .01$ ). No other effects were significant ( $F$ 's  $< 1$ ). Similarly, a 3 x 2 ANOVA on the depicted Sadness index ( $\alpha = .90$ ) yielded a main effect of emotion type ( $F(2, 122) = 22.89, p < .001; m_{\text{happy}} = 1.94, m_{\text{sad}} = 3.67, m_{\text{mixed}} = 3.20$ ). Contrasts showed differences in perceptions of sadness depicted in the happy and sad appeals ( $F(1, 122) = 42.53, p < .001$ ) and between the happy and mixed appeals ( $F(1, 122) = 22.48, p < .001$ ). There was a marginally significant difference in perceptions of depicted sadness between the sad and mixed appeals ( $F(1, 122) = 3.00, p < .09$ ). No other effects were significant (culture,  $F < 1$ ; interaction,  $F(2, 122) = 1.05, p > .35$ ). See Table 1 for means.

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 Table 1 about here  
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To determine the extent to which different felt emotional responses were evoked from the appeals, an overall 3 x 2 ANOVA conducted on the felt Happy index ( $\alpha = .88$ ) revealed a main effect of emotion type ( $F(2, 123) = 4.66, p < .01$ ). The happy appeal ( $M = 3.44$ ) evoked greater feelings of happiness than did the sad appeal ( $M = 2.45; F(1, 123) = 9.21, p < .01$ ), and marginally greater feelings of happiness than the mixed appeal ( $M = 2.87; F(1, 123) = 3.01, p < .09$ ). There was no difference in happy feelings evoked by the sad and mixed emotional appeals ( $F(1, 123) = 1.58, p > .21$ ). No other effects were significant (culture,  $F(1, 123) = 1.44, p > .23$ ; interaction,  $F(1, 123) < 1$ ). Analysis on the felt Sadness index ( $\alpha = .92$ ) yielded a main effect of emotion type ( $F(2, 123) = 9.63, p < .001; M_{\text{happy}} = 2.07, M_{\text{sad}} = 3.35, M_{\text{mixed}} = 2.69$ ; all contrast  $p$ 's  $< .05$ ). No other effects were significant ( $F$ 's  $< 1$ ).

A 3 x 2 ANOVA of the ambivalence index revealed a main effect of emotion type ( $F(1, 122) = 2.27, p < .05$ ) such that the mixed emotional appeal evoked higher levels of ambivalence ( $M = 3.58$ ) compared with both the happy ( $M = 2.33; F(1, 122) = 4.15, p < .05$ ) and sad ( $M = 2.56; F(1, 122) = 2.62, p < .05$ ) appeals. No other effects were significant ( $F$ 's  $< 1$ ).

Importantly, these results demonstrate that the appeals both (a) conveyed the intended emotional content and, (b) evoked the intended emotional responses across conditions.

### Felt Discomfort

A 3 x 2 analysis of the felt Discomfort index ( $\alpha = .87$ ) revealed a main effect of emotion type ( $F(2, 122) = 10.33, p < .001$ ), such that the mixed emotional appeal ( $M = 3.56$ ) evoked more discomfort than did either the happy ( $M = 2.21; F(1, 122) = 20.37, p < .001$ ) or, marginally, the sad ( $M$

$= 2.99; F(1, 122) = 3.45, p < .07$ ) appeals. A main effect of culture also emerged ( $F(1, 122) = 10.47, p < .002$ ), with Anglo American participants ( $M = 3.32$ ) experiencing more discomfort overall than Asian American participants ( $M = 2.53$ ). Importantly, these effects were qualified by a significant interaction ( $F(2, 122) = 7.26, p < .001$ ), whereby Anglo American participants ( $M = 4.54$ ) experienced more discomfort in response to the mixed emotional appeal than did Asian American participants ( $M = 2.59; F(1, 122) = 20.29, p < .001$ ), consistent with Hypothesis 1. There were no significant culture-based differences in response to the happy emotional appeal ( $F(1, 122) < 1$ ) or the sad emotional appeal ( $F(1, 122) = 2.19, p > .10$ ); see Table 1 for means.

### Attitudes

Hypothesis 2 was tested based on the overall 3 x 2 ANOVA on Aad ( $\alpha = .90$ ). As in experiment 1, there was no main effect of culture ( $F(1, 124) < 1$ ), though there was an effect of emotion type ( $F(2, 124) = 5.55, p < .01$ ). More favorable attitudes resulted from exposure to the happy appeal ( $M = 4.24$ ) than to the sad appeal ( $M = 3.42; F(1, 124) = 10.99, p < .001$ ), as well as from the mixed appeal ( $M = 3.92$ ) compared to the sad appeal ( $F(1, 124) = 3.91, p < .05$ ). Contrasts revealed no significant difference in attitudes between the happy and mixed emotional appeals ( $F(1, 124) = 1.70, p > .19$ ). This main effect of emotion type was qualified by an emotion type and culture interaction ( $F(2, 124) = 3.46; p < .04$ ). As in experiment 1, the interaction was driven by differences in attitudes toward the mixed emotional appeal; Anglo American participants ( $M = 3.54$ ) had less favorable attitudes than did Asian American participants ( $M = 4.30; F(1, 124) = 4.61, p < .03$ ), while no such differences occurred when exposed to the pure emotional appeals (mixed versus sad  $F(1, 124) < 1$ ; mixed versus happy  $F(1, 124) = 2.34, p > .14$ ), supporting Hypothesis 2. Specifically, Anglo American participants had more favorable evaluations of the happy appeal than of the sad ( $F(1, 124) = 7.83, p < .01$ ) or mixed ( $F(1, 124) = 7.22, p < .01$ ) appeals. In contrast, there were no differences in evaluations by the Asian American participants for the happy and mixed appeals ( $F(1, 124) < 1$ ); both were again preferred relative to the sad appeal ( $p$ 's  $< .05$ ); see Table 1 for means.

### Process of Mediation

To provide more direct support for the process hypothesized to underlie the results, a mediational analysis identical to that reported for experiment 1 was conducted. Consistent with (a), Asian Americans had more favorable attitudes toward the mixed appeal than did Anglo Americans ( $\beta = .76, p < .02$ ). Further (b), Asian Americans reported less discomfort after exposure to the mixed emotional appeal than did Anglo Americans ( $\beta = -1.95, p < .0001$ ). In addition (c), higher levels of discomfort led to less favorable attitudes ( $\beta = -.21, p < .04$ ). Finally, in a full model of effects (d), discomfort was a significant predictor of attitudes ( $\beta = -.22, p$

< .04), while culture was not a significant predictor of attitudes ( $\beta = .53, p > .19$ ), as predicted.

### Discussion

The results of experiment 2 provide evidence of generalizability for the basic result found in experiment 1. Again, we find that Anglo American participants prefer happy emotional appeals to sad or mixed appeals, and feelings of discomfort appear to account for the lowered attitudinal responses to the mixed appeals. In contrast, Asian American participants had similar attitudes toward the happy and mixed emotional appeals, and feelings of discomfort played no mediating role with respect to attitudes toward mixed appeals. More importantly, however, the results suggest that the observed attitudinal differences were due to felt emotional responses rather than recognition of the emotions depicted in the mixed appeals.

By disentangling felt versus depicted emotions, experiment 2 sheds light on both the differences and similarities between the two constructs for individuals with distinct cultural backgrounds. The results indicate that each appeal type was perceived to depict similar emotional content across cultures, consistent with the intended manipulations. These results corroborate past research documenting similarities in the extent to which individuals with distinct cultural backgrounds appraise and recognize emotions (Smith and Ellsworth 1985). Moreover, there were no differences across cultural groups with respect to the experience of happiness and sadness in response to either the pure or mixed emotional appeals. Instead, the results demonstrate that experienced discomfort mediates attitudes for individuals with cultural backgrounds that do not embrace duality, resulting in lowered attitudes toward mixed emotional appeals.

Experiments 1 and 2 provide support for the hypothesized attitude and processing differences between those with a higher versus lower propensity to accept duality, when propensity to accept duality is operationalized through cultural background. However, there are limitations to this particular operationalization. For example, there is no measurement scale to assess differential tendencies to accept duality, thereby limiting the ability to provide manipulation checks for this key construct. It is possible that potential confounding variables, which may not have been controlled for but may vary with cultural background (e.g., socioeconomic status), could account for the pattern of results. To further examine the validity of the proposed underlying construct, experiment 3 examines variation in propensity to accept duality based on age differences. To the degree that a similar pattern of results occurs, both in terms of attitude and mediational measures, corroborative evidence of the proposed theoretical relationships may be found.

## EXPERIMENT 3: AGE AS AN ANTECEDENT TO THE ACCEPTANCE OF DUALITY

### Overview and Design

The primary objective of experiment 3 is to examine the robustness of the effects found in experiments 1 and 2 by focusing on age, instead of cultural background, to manipulate the differences in propensity to accept duality. We expect the same set of effects as predicted and found in experiments 1 and 2. While experiment 3 relies on the same context as in experiment 1 (film product category), only a partial design is used to replicate the effects due to difficulties in obtaining participants in the older sample. Since the pure sad advertisement was a conceptual replication of the pure happy ad, but one that is less externally valid, we eliminated the sad advertisement condition. Thus, we rely on a 2 (Emotion Type: Happy versus Mixed) x 2 (Age: Younger versus Older Adults) between-subjects design.

### Method

While the methodology used in experiment 1 was replicated in experiment 3, the two groups of participants varied in their profiles. The participants in the younger age group remained Anglo American undergraduate students ( $n = 40$ ; 42% female, mean age = 21.1 years), who completed the experiment in return for partial course credit and were run in small groups ( $n = 5-15$ ). Participants in the older adult age group ( $n = 48$ ; 72% female, mean age = 73.2 years) were recruited from two senior citizen's homes. Prior to the experiment, the elderly participants were screened for major health problems (e.g., Alzheimer's disease) that would impair their ability to complete the experiment. In addition, only those volunteers who indicated having completed at least two years of college were allowed to participate, thus minimizing differences in educational background among the younger (all of whom were third or fourth year undergraduates) and older participants. Participants from one senior citizen's home (20% of the older adult sample) were paid \$10 each in return for their involvement in the research, while those from the second facility agreed to participate in return for a \$10 donation for each participant to their home's general activity fund. The older participants were also run in groups ( $n = 12-20$ ). All other aspects of the study remained the same as in experiment 1.

### Results

The data were analyzed based on a 2 (Emotion Type) x 2 (Age) between-subjects ANOVA. Sample sizes ranged from 15 to 27 in each cell.

#### *Manipulation Checks*

An overall 2 x 2 ANOVA on the Happy index ( $\alpha = .90$ ) yielded no main effect of emotion type ( $F(1, 81) = 1.01, p >$

.32). However, a main effect of age was found ( $F(1, 81) = 6.35, p < .01$ ), with older adults expressing more feelings of happiness overall ( $M = 4.30$ ) than the young adults ( $M = 3.35$ ), an effect which is consistent with prior literature (Lawton, Kleban and Dean 1993). The interaction was not significant ( $F(1, 81) = 1.64, p > .20$ ). The same  $2 \times 2$  ANOVA on the Sadness index ( $\alpha = .87$ ) revealed a main effect of emotion type ( $F(1, 76) = 12.87, p < .001$ ;  $M_{\text{happy}} = 2.65, M_{\text{mixed}} = 3.58$ ), indicating that the mixed appeal provoked more feelings of sadness, as intended. There was also a significant main effect of age ( $F(1, 76) = 19.39, p < .001$ ), such that younger adults felt more sadness ( $M = 3.68$ ) relative to older adults ( $M = 2.54$ ). The interaction was again not significant ( $F(1, 76) = 1.62, p > .21$ ). For means, see Table 2.

A  $2 \times 2$  ANOVA of the ambivalence index revealed a significant main effect of emotion type ( $F(1, 76) = 6.26, p < .02$ ) with the mixed emotional appeal ( $M = 4.70$ ) evoking more ambivalence than the happy appeal ( $M = 3.01$ ). There was no significant main effect of age group ( $F(1, 76) = 2.17, p > .15$ ) or interaction between emotion type and age ( $F(1, 76) = 1.50, p > .23$ ).

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 Table 2 about here  
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#### *Felt Discomfort*

An overall  $2 \times 2$  ANOVA on the Discomfort index ( $\alpha = .68$ ) yielded a marginal main effect of emotion type ( $F(1, 78) = 2.90, p < .09$ ), such that greater discomfort was felt in response to the mixed ( $M = 3.39$ ) versus happy ( $M = 2.82$ ) emotional appeal. In addition, there was a main effect of age ( $F(1, 78) = 8.75, p < .01$ ), with the older adult participants experiencing less discomfort ( $M = 2.61$ ) than the younger participants ( $M = 3.61$ ). As the interaction between the two factors was at least marginally significant ( $F(1, 78) = 2.67, p < .06$ ), planned contrasts consistent with hypothesized effects were conducted (Aiken and West 1991). As predicted, younger participants experienced greater feelings of discomfort ( $M = 4.17$ ) in response to the mixed emotional appeal than did older adults ( $M = 2.62, F(1, 78) = 10.58, p < .01$ ), consistent with Hypothesis 1. In contrast, there were no significant differences between the two age groups in the case of the happy ad ( $F(1, 78) < 1$ ).

#### *Attitudes*

The hypothesis regarding the effects of age and emotion type on Aad ( $\alpha = .95$ ) was tested based on the same overall  $2 \times 2$  ANOVA. Results revealed a marginal main effect of age ( $F(1, 75) = 3.25, p < .08$ ), with the older adults expressing more favorable attitudes ( $M = 4.54$ ) than the younger participants ( $M = 3.84$ ). This effect was qualified by an interaction between age and emotion type ( $F(1, 75) = 5.74, p < .02$ ). While no significant attitudinal differences occurred in response to the happy emotional appeal ( $F(1, 75) < 1$ ),

younger participants ( $M = 3.23$ ) had less favorable attitudes in the mixed emotional appeal than did older participants ( $M = 4.87; F(1, 75) = 8.74, p < .01$ ), as predicted by Hypothesis 2. There was no effect of emotion type ( $F(1, 75) < 1$ ).

#### *Process of Mediation*

To provide more direct support for the process hypothesized to drive the results, a mediation regression analysis was again conducted. Consistent with (a), older adults had more favorable attitudes toward the mixed emotional appeal than did younger adults ( $\beta = .35, p < .04$ ). Further (b), older adults reported less discomfort after exposure to the mixed emotional appeal than did younger adults ( $\beta = -.51, p < .01$ ). In addition (c), higher levels of discomfort led to less favorable attitudes ( $\beta = -.56, p < .0001$ ). Finally, in the full model (d), discomfort was a significant predictor attitudes ( $\beta = -.54, p < .0001$ ), while age was not ( $\beta = .10, p > .59$ ), again consistent with the mediational hypothesis.

## Discussion

The results of both experiments 1 and 2 suggest that individuals with a cultural background that tends to not embrace duality, relative to those with a cultural background that embraces duality to a greater degree, have less favorable attitudes toward a mixed emotional appeal. The findings in experiment 3 corroborate those results by relying on another antecedent to the acceptance of duality, level of maturity as operationalized through age. It should be noted that the use of both culture and age to manipulate the propensity to accept duality has limitations. For example, in the case of culture-based effects, there are potential confounds (e.g., socio-economic background) that may co-vary with cultural background and could explain the results. Similarly, for age-based effects, the results may be due to an increased comfort that older participants have toward the mixed emotional appeal because of a heightened ability to identify themselves with the elderly grandmother portrayed in the appeal. However, the use of multiple operationalizations of the acceptance of duality and the robustness of the findings across the three experiments helps to address, at least in part, these issues. Together, the results help provide evidence of the mediating effect of discomfort and shed light on the moderating variable, differential propensity to accept duality.

## GENERAL DISCUSSION

The objective of this research was to understand the psychological impact of mixed emotions on attitudes, and shed insight on how this relationship varies based on the level of discomfort that individuals experience when exposed to mixed emotions. The results of experiment 1 show that individuals with a lower versus higher propensity to accept duality have more negative attitudes toward mixed emotional appeals. Such attitudinal differences do not occur after

exposure to pure emotional appeals. Importantly, these negative attitudes were not a result of a focus on the negative emotion in the stimulus. Rather, they were driven by the experience of a third independent emotion: discomfort. Mixed emotional appeals led to heightened levels of discomfort for individuals with a lower versus higher propensity to accept duality, which in turn led to more negative attitudes. Importantly, experiment 2 provides evidence that the effects are driven by differences in felt emotional responses rather than differences in the recognition of the emotions in the appeals. Finally, experiment 3 replicates the above effect but operationalizes propensity to accept duality by relying on younger versus older individuals, thereby providing convergent evidence for the generalizeability of the basic effect.

Through these three experiments, the current research aims to contribute to literatures in consumer behavior on emotion and persuasion, as well as that in psychology. In these literatures, researchers have focused primarily on understanding the role of pure emotions in emotion-based persuasion processes (e.g., Burke and Edell 1986; Holbrook and Batra 1987) and in the recognition and expression of emotions (e.g., Matsumoto 1990; Russell 1994). This paper attempts to extend this research into the domain of mixed emotions where multiple emotions are contained in the same stimulus. In doing so, we hope to shed light on the types of reactions that individuals experience when exposed to mixed emotions by showing that differences in proclivity to accept duality lead to differences in discomfort as a response to mixed emotions, and that these reactions influence attitudes and lead to differential persuasive outcomes.

From a broader perspective, the present research adds to a growing interest in consumer research on experiences of duality or paradox. Most of this research has focused on conflict experienced during the act of consumption and the emotional outcomes of such conflict. The current set of studies extends this stream of research by focusing on conditions in which there is conflict between emotions, and specifically examining the felt discomfort that results from that emotional conflict. Importantly, however, this felt discomfort only arises for certain individuals, namely those with a lower propensity to accept duality. For those with a higher propensity to accept duality, this negative third emotion does not result. Indeed, favorable attitudes, similar to those found in response to the happy appeal, resulted for those with a higher propensity to accept duality. This finding suggests that the use of mixed emotional appeals may be an effective advertising strategy when targeting consumers with an Asian background or the elderly, two markets that may be particularly important given trends in global marketing and demographics.

The current research also has several limitations that deserve attention in future research. For example, the actual simultaneous experience of mixed emotions merits additional empirical exploration. Though we measure both positive and negative emotional reactions to the mixed emotional appeal and find that they do co-occur, future research is needed to

provide a more direct measure of mixed emotional experience (see Diener 1999; Larsen et al. in press; Priester and Petty 1996), specifically one that may provide greater insight into whether mixed emotions are truly experienced simultaneously. Similarly, future research is needed to provide measures that directly assess the propensity to accept duality, and yield deeper insight into the types of antecedents that lead to differential propensities to accept duality. The results of this research suggest that one such antecedent is culture, which is consistent with prior findings. For example, Shore (1996) argues that socialization and child rearing in Samoa, relative to the United States, foster the experience of ambivalence. However, the specific aspect of culture that serves to influence the experience of mixed emotions remains unclear.

Another area for future exploration involves identifying potential conditions under which individuals with low propensity to accept duality might not experience discomfort after exposure to mixed emotional appeals. Are there mitigating conditions under which the effects documented for those with a low propensity to accept duality may be muted? One possibility involves conditions under which one emotion may dominate the other, rather than conflicting emotions experienced in equal intensity. Recent unpublished research begins to address this question by relying on a priming manipulation to increase the salience of one emotion (happy) relative to the other (sad) in the mixed emotional appeal. Results show that after receiving the happy prime, Asian Americans did not change their attitudes relative to the neutral prime condition. Interestingly, after receiving a happy prime, the attitudes of Anglo American participants toward a mixed appeal were more favorable than in a neutral prime condition.

In addition, while the current research suggests that mixed emotions lead to positive outcomes for those with a relatively high proclivity to accept duality, it does not offer insight as to why this effect occurs. Previous research has shown that not only are dialectic relations often preferred in cultures characterized by a high propensity to accept duality, but also that such relationships tend to be more common. For example, dialectic proverbs tend to be more commonly used in Chinese than American traditions (Choi and Nisbett 2000). Thus, it is likely that for those with a relatively high propensity to accept duality, evidence of dialectic relationships in their environments are seen as natural, salient and commonplace. As a result, mixed emotional appeals may be perceived as more reflective of reality for those with a high propensity to accept duality, resulting in the observed favorable responses. To examine this premise, additional recent unpublished research asked participants to listen to radio advertisements for a moving company (based upon the current experiment 2). After participants rated their attitudes toward the appeal, they were asked their perceptions of verisimilitude for each appeal type. Asian Americans rated the mixed emotional appeal higher on verisimilitude than did Anglo Americans, and perceived it to have higher levels of verisimilitude than either the happy or sad appeals. By

contrast, Anglo Americans found the happy appeal to have the highest degree of verisimilitude. In addition, verisimilitude was also found to act as a mediator on attitudes toward the mixed emotional appeal, but only for those with a relatively high propensity to accept duality. While preliminary, this study suggests that the use of mixed emotions in appeals may be a preferred and more effective method of persuasion among advertisers targeting individuals with a high propensity to accept duality. There are, however, several issues to explore in this research including a full understanding of the conceptual relationship between verisimilitude and felt discomfort across the two cultural groups.

Finally, the present work suggests a rich research area in the examination of distinctions between and consequences of emotional versus cognitive dissonance. Similar to the research on cognitive dissonance, we find that feelings of discomfort arose after experiencing two conflicting emotions. However, in contrast to cognitive dissonance, the subsequent steps taken to reduce emotional dissonance may differ. For example, cognitive dissonance can be resolved by altering a cognition or behavior. In the classic case of a cigarette smoker, the smoker could quit, deny or diminish health risks by rationalizing that the benefits of smoking (e.g., relaxation) outweighed its risks. Importantly, each of these resolutions includes cognitive or conative changes related to the provoked inconsistency.

However, the degree to which the typical cognitive dissonance resolution processes (e.g., re-appraisal) can occur for dissonance between emotional elements is unclear, and in fact some research suggests the parallels may be limited. For example, the opportunity or ability to consciously shift one set of beliefs or behaviors may be more limited in the domain of emotions relative to cognitions because emotional experience may occur below conscious awareness (Zajonc 1980). Further, the ability to change an emotionally-based attitude or experience with a cognitively-based belief or argument is often difficult (Edwards 1990). Therefore, the outlets for the reduction of emotional dissonance may be fewer in number or different in type than those for cognitive dissonance, thereby leading to the possibility that emotionally dissonant states may not be as well-accepted as cognitively dissonant states by Americans. Indeed, McQuarrie and Mick (1992) found that American subjects had little problem with ads that appeared to communicate conflicting rhetorical meanings (positive and negative) about a brand. Such indirect evidence supports the premise that Americans may deal with, and indeed even like, conflicting cognitive meanings if they are part of a playful rhetorical ad (e.g. Scott 1994), but perhaps cannot or do not respond positively when the conflict focuses on emotional reactions. Future research is needed to examine these possibilities, and in doing so explore the differences and similarities in the consequences of emotional versus cognitive dissonant states.

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**TABLE 1**  
**EXPERIMENT 2 DEPENDENT MEASURES**  
**AS A FUNCTION OF EMOTIONAL APPEAL TYPE AND CULTURE**

Dependent Measures	Anglo American			Asian American		
	Happy Emotional Appeal	Sad Emotional Appeal	Mixed Emotional Appeal	Happy Emotional Appeal	Sad Emotional Appeal	Mixed Emotional Appeal
Attitude toward the Ad	4.50	3.45	3.54	3.98	3.39	4.30
Felt Happy	3.58	2.58	3.07	3.28	2.32	2.67
Felt Sad	2.08	3.47	2.60	2.06	3.24	2.79
Felt Ambivalence	2.23	3.10	3.63	2.43	2.04	3.52
Felt Discomfort	2.05	3.38	4.54	2.38	2.61	2.59
Depicted Happy	5.38	2.83	3.89	4.78	3.01	4.10
Depicted Sad	1.73	3.80	3.01	2.15	3.53	3.39

NOTE. -- Higher means indicate more intense feelings and more positive attitudes. Cell sizes range from 16 to 26.

**TABLE 2**  
**EXPERIMENT 3 DEPENDENT MEASURES**  
**AS A FUNCTION OF EMOTIONAL APPEAL AND AGE GROUP**

Dependent Measures	Younger Participants		Older Participants	
	Happy Emotional Appeal	Mixed Emotional Appeal	Happy Emotional Appeal	Mixed Emotional Appeal
Attitude toward the Ad	4.45	3.23	4.22	4.87
Felt Happiness	3.78	2.92	4.24	4.35
Felt Sadness	3.06	4.32	2.24	2.85
Felt Ambivalence	3.92	4.62	2.10	4.62
Felt Discomfort	3.04	4.17	2.60	2.62

NOTE. -- Higher means indicate more intense feelings and more positive attitudes. Cell sizes range from 15 to 27.