Context-Induced and Ad-Induced Affect: Individual Differences as Moderators

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ABSTRACT

The present article had two objectives: (a) to explore the relative impacts of context-induced and ad-induced affect on ad and brand evaluations, and (b) to investigate how individual differences in affect intensity and introversion/extroversion moderate the effects of ad-induced affect. In Study 1, ad-induced affect, but not context-induced affect, significantly influenced ad and brand evaluations when both forms of affect induction were manipulated. Furthermore, Studies 1 and 2 showed that individuals scoring differently on affect intensity and introversion/extroversion responded in divergent ways to ad messages that elicited positive and negative affect. © 2006 Wiley Periodicals, Inc.

In an ad-processing context, affect can be induced by either the ad message itself or the message's context, such as program or editorial content (e.g., Goldberg & Gorn, 1987; Mathur & Chattopadhyay, 1991), clutter ads (Aaker, Stayman, & Hagerty, 1986), or the viewing environment (Batra & Stayman, 1990; Srull, 1983, 1990). Past research has indicated that ad-induced affect influences ad and brand evaluations (e.g., Batra & Ray, 1986; Edell & Burke, 1987). Similarly, context-induced affect has also been shown to exert impacts on ad and brand evaluations (e.g., Goldberg & Gorn, 1987; Mathur & Chattopadhyay, 1991; Srull, 1990). The question remains: When both context-induced affect and ad-induced affect are present, will both exert influences on ad and brand evalua-

Psychology & Marketing, Vol. 23(9): 757–782 (September 2006)
Published online in Wiley InterScience (www.interscience.wiley.com)
© 2006 Wiley Periodicals, Inc. DOI: 10.1002/mar.20128

tions? In the study presented here, participants' affective states were manipulated to explore whether and how their affective states influenced their responses to ads that evoked positive or negative affect.

Past research has suggested that, when both the context and the ad itself induce affect, consistency in the induced affect will lead to more favorable evaluations (Gardner & Wilhelm, 1988; Kamins, Marks, & Skinner, 1991). However, empirical support for this hypothesis is still limited. Moreover, subsequent research indicated that affect is more likely to exert influences on a judgment if it is perceived to be relevant for that judgment (Pham, 1998). In line with Pham's argument, it is posited in this article that the degree to which context-induced and ad-induced affect influences ad judgments is determined by the perceived relevancy of the affect to the ad judgments. Specifically, context-induced affect is considered to be incidental to the ad, whereas ad-induced affect is integral to the ad (Bodenhausen, 1993). It is thus expected that when both context-induced and ad-induced affect are elicited, individuals are capable of recognizing the irrelevancy of context-induced affect to their ad evaluations, thereby reducing its possible influence.

Individuals not only can tell whether their affect is relevant to the judgments they make, but they also vary in their responses to affect-evoking stimuli. Past literature has indicated that personality differences moderate the degree to which individuals are influenced by affect-evoking stimuli (e.g., Forgas, 1998; Forgas & Ciarrochi, 2001; Rusting, 1998; Smith & Petty, 1995). Therefore, how personality traits influence the effect of ad-induced affect on ad judgments will be another focus of this study. The two personality traits explored are affect intensity and introversion/extroversion. In addition, how the relevance of product attributes may moderate the interaction between personality traits and ad-induced affect will also be examined.

The Impact of Context-Induced and Ad-Induced Affect on Ad Effectiveness

In an ad-viewing context, either the context or the ad itself can induce affect. Social psychology literature differentiates between incidental affect and integral affect (Bodenhausen, 1993). The former refers to affect evoked by situations that are unrelated to the target; the latter refers to affect elicited by the target. Similarly, communication literature distinguishes message-irrelevant affect from message-induced affect, with the former referring to emotional states that exist prior to message processing and the latter to emotional states generated in direct response to the message (Dillard & Wilson, 1993). In line with these distinctions, in this study, context-induced affect can be characterized as affect that is incidental and thus irrelevant to the ad, whereas ad-induced affect can be characterized as affect that is integral and relevant to the ad.

The influence of context-induced affect on ad effectiveness has been widely explored in past research (e.g., Goldberg & Gorn, 1987; Mathur

& Chattopadhyay, 1991). For example, Goldberg and Gorn (1987) showed that when a preceding program evokes positive affective states, participants' evaluations of advertisements are much more positive than when the program evokes negative affective states. They also found that more positive cognitive responses are generated when program-evoked affective states are positive than when they are negative. Mathur and Chattopadhyay (1991) demonstrated similar effects, showing that program-evoked affective states encourage cognitive responses of the same valence as the affective states. In addition to program-induced affect, mood induction techniques have also been used to understand how ad perceivers' affective states influence ad evaluations (Batra & Stayman, 1990; Srull, 1983, 1990). Findings are consistent, showing that positive affective states at ad exposure lead to more favorable ad evaluations than negative affective states (Srull, 1990) or neutral affective states (Batra & Stayman, 1990). This study will adopt the mood-induction procedure to explore the influence of context-induced affect. Finally, affect induced by preceding ads in the same viewing context can also alter the effectiveness of the target ad (Aaker et al., 1986).

Advertising itself can also evoke different affective responses. Some specific ad appeals known to evoke ad perceivers' affective responses are humorous appeals (Michaels, 1998), fear appeals (Hill, 1988), and emotional appeals (Page, Thorson, & Heide, 1990). Past literature has indicated that ad-evoked affect biases ad and brand evaluations in a valence-congruent way (e.g., Batra & Ray, 1986; Edell & Burke, 1987). The Brown and Stayman's (1992) meta analysis suggested that the more positive ad-evoked affect participants experience, the more favorably they rate the ad.

Similar to other affect-evoking ad appeals, ads that are framed in positive and negative terms have been shown to evoke positive and negative affect (Chang, 2002, 2005). A positively framed ad message focuses on positive benefits resulting from the purchase of a product (Smith, 1996). A negatively framed ad message concerns the unpleasant consequences resulting from not purchasing a product (Homer & Yoon, 1992; Smith, 1996). When consumption products are featured, positively framed ad messages have been demonstrated to generate more favorable ad evaluations than negatively framed ad messages (Donovan & Jalleh, 1999; Levin, 1987; Levin & Gaeth, 1988; Smith, 1996; Zhang & Buda, 1999). Chang (2002) demonstrated that the superior effects of positively framed compared to negatively framed ad messages can be attributed to the fact that the former evokes more positive affect than the latter.

In the present study, positive and negative framing were used to manipulate ad-induced affect. Controlling the information content of ad messages that evoke different affective responses is important for reducing confounds. Positive and negative frames contain similar product information, differing only in how the information is presented. Therefore, exploring ad messages that are framed in positive and negative terms may introduce fewer confounding influences caused by ad content variations than other emotional appeals.

Relevance of Context-Induced and Ad-Induced Affect to Ad Judgments

In the past, researchers have argued that context-induced and ad-induced affect interact to influence consumers' evaluations of the embedded ads (Gardner & Wilhelm, 1988; Kamins et al., 1991). This line of research mainly focused on consistency effects, suggesting that more positive ad evaluations are generated when ad-evoked affect is congruent with context-evoked affect. However, findings are not unanimous. For example, Kamins et al. (1991) demonstrated that even though sad ads are evaluated more favorably after exposure to sad programs than happy programs, exposure to these two types of programs does not influence evaluations of happy ads. Srull (1983) showed that both happy and sad ads are evaluated more favorably when consumers are in an induced happy state as opposed to a sad state. Gardner and Wilhem (1988) found that happy ads are evaluated more favorably when consumers are in happy versus sad moods, but sad ads are not evaluated differently depending on their mood.

Given mixed support for the affect consistency hypothesis, subsequent research has focused on a different possibility. Pham (1998) showed that the influence of affect on judgments only emerges when individuals perceive the relevance of the affect to the target of judgment. Pham (1998) proposed that "when people inspect their feelings to evaluate targets, it is not to inspect their mood states *per se*, but to inspect their feelings in response to the target" (p. 145). It is important to note that Gardner and Wilhelm (1988) found that the main effect of ad-induced affect on ad evaluation was significant, but the main effect of context-induced affect was not significant, suggesting that only relevant ad-induced affect exerted a significant influence on ad judgments. However, their article did not specifically address this issue.

Past research has suggested that incidental affect influences judgments only when the target itself does not evoke affect, not when the target also elicits affect. For example, Isen and Shalker (1982) found that the influence of induced positive and negative affective states is stronger on neutral slides than on slides that also generate affective responses. In a similar vein, Miniard, Bhatla, and Sirdeshmukh (1992) showed that participants' affective states influence evaluations of product consumption experiences only when product consumption itself does not evoke strong positive or negative affective responses.

Furthermore, mood and memory researchers have suggested that people seem capable of determining whether affect is relevant to the target when encoding information. Bower and Forgas (2000) specifically proposed what they call the "causal belonging hypothesis." It states that only when the emotional reaction and the target are causally related do participants associate the emotion with the specific target in memory. When an emotional reaction is linked to a target due to temporal contiguity but not causal relation, the generated memory associations will be relatively weak.

Recent theoretical developments seem to suggest a causal relevancy hypothesis as opposed to an affect consistency effect. As reviewed earlier, context-induced affect is characterized as incidental affect, whereas ad-induced affect can be characterized as integral affect. Taken together, it seems that only ad-induced affect should be regarded as relevant for developing ad and brand judgments, not context-induced affect. Therefore, it is hypothesized that only ad-induced affect will bias ad and brand evaluations.

H1: When both ad-induced and context-induced affect are present, ad-induced affect will significantly influence ad attitudes [H1(a)] and brand attitudes [H1(b)], but context-induced affect will not.

Individual Differences and Ad-Induced Affect

Personality traits function as orienting forces within an individual, affecting one's perceptions of the world, as well as interactions with the environment (Marjoribanks, 1989). Long-term, enduring personality differences also affect how responsive each individual is to feelings. For example, Batra and Stayman (1990) found that those who have low need for cognition are more influenced by context-induced affect than those who have high need for cognition. Moreover, individuals scoring high on measures of Machiavellianism and need for approval seem to be less influenced by their affective states (Forgas, 1998).

In addition, researchers exploring affect-congruent effects (positive affect leading to more favorable judgments and negative affect resulting in more negative judgments) have argued that individual differences can partly explain why sometimes affect-congruent effects are not found (e.g., Smith & Petty, 1995). For example, Forgas and Ciarrochi (2001) showed that affect-congruent effects emerge for individuals with higher levels of openness to feelings, which is the degree to which individuals are receptive to their inner feelings, whereas affect-incongruent effects emerge for individuals with lower levels of openness to feelings. Smith and Petty (1995) also demonstrated that when negative feelings are induced, participants self-rated low in self-esteem and on the negative mood regulation scale show affect-congruent cognition. On the other hand, those self-rated high in the two characteristics show more affect-incongruent cognition.

Given the importance of individual differences demonstrated by related research, this study will explore the moderating influences of two personality traits on responses to ads that induce positive and negative affect: affect intensity and introversion/extroversion.

Affect Intensity. People vary in terms of the strength of their emotional experiences (Diener, Larsen, Levine, & Emmons, 1985; Larsen & Diener, 1987; Larsen, Diener, & Emmons, 1986), a characteristic referred to as

affect intensity. Diener et al. (1985) showed affect intensity to be a stable individual characteristic, generalizable across specific emotions regardless of how frequently the emotions are experienced.

In advertising research, Moore, Harris, and Chen (1995) demonstrated that individuals high in affect intensity generate stronger emotional responses than those low in affect intensity when being exposed to emotional ad messages, whereas they do not differ in their emotional responses when the ad is neutral. This result seems to hold true regardless of the valence of the ad-induced emotion (e.g., Moore et al., 1995) or the type of ad-induced emotion, including warmth, erotic feelings, humor (Geuens & Pelsmacker, 1999), joy, and happiness (e.g., Moore et al., 1995).

However, other advertising research has suggested that the influence of affect intensity is mood specific. Escalas, Moore, and Britton (2004) showed that individuals' affect intensity can positively predict the positive affect (upbeat and warm) they experience at ad exposure but cannot significantly predict the negative affect (disinterested) they experience. Given that individuals with high affect intensity experience stronger affective responses, Moore and Harris (1996) proposed that these individuals might be motivated to approach ad messages that evoke positive affect and evade ad messages that evoke negative affect. Individuals low in affect intensity should not show this pattern.

Due to the distinction between approach and avoidance mechanisms toward positive and negative affective stimuli, Moore and Harris (1996) expected that individuals high in affect intensity would generate more favorable attitudes toward a positive emotional ad appeal and more negative attitudes toward a negative emotional ad appeal than participants with low affect intensity. Consistent with their predictions, findings of their study demonstrated that participants high in affect intensity generate significantly more favorable evaluations of ads that induce positive affect than participants low in affect intensity. Yet, contrary to expectations, high- and low-affect-intensity participants did not generate significantly different responses to negative ad messages. Moore and Harris accounted for the unexpected null result by reasoning that the psychological disengagement of high-affect-intensity participants when being exposed to negative stimuli might have reduced their message elaborations. Indeed, their findings are consistent with Escalas et al. (2004), in that the influence of affect intensity was mainly limited to positive affect. However, their study did not specifically test their reasoning that individuals with high or low affect intensity engage in different levels of message elaboration when exposed to positive ad messages but not when exposed to negative ad messages.

Entertainment seeking is believed to be one of the primary reasons for media use (e.g., Blumer & Katz, 1974). Zillmann (1988) reasoned that individuals select media content in such a way as to maximize gratification. Chang (2006) also demonstrated a mood-management mechanism in a magazine-reading context, where participants reading sad articles were

more motivated to elaborate on embedded happy ads than those reading happy articles, assumingly to get cognitive disruption in the process and thus be able to attenuate their negative affective states. In general, maintaining positive and avoiding negative affective states seem to be natural drives for individuals regardless of their affective intensity. Therefore, in a media-viewing context, the influence of affect intensity should be affect specific.

Given that more pleasure is likely to be obtained by elaborating on messages that evoke positive affect, high-affect-intensity individuals, who experience stronger positive affect in response to positive stimuli, will be motivated to elaborate on ad messages that evoke positive affect to a greater degree than individuals with low affect intensity. As a result of increased elaboration, they will generate more cognitive responses. In addition, greater elaboration of ad messages that elicit positive affect will bias cognitive responses, resulting in more positive cognitive responses.

In contrast, because of a mood-management mechanism, relative to participants low in affect intensity, those high in affect intensity will not be more motivated to elaborate on messages that evoke negative affective responses. Therefore, in the negative ad affect condition, there will be no differences between those high and low in affect intensity in terms of their cognitive responses.

H2: Affect intensity will moderate the effect of ad-induced affect on cognitive responses. When the ad-induced affect is positive, participants scoring high on affect intensity will generate more total cognitive responses [H2(a)] and more positive cognitive responses [H2(b)] than those scoring low on affect intensity. However, when the ad-induced affect is negative, the two groups of participants will not generate different amounts of total or positive cognitive responses.

Past research has suggested that affect primes more cognitive responses of the same valence and thus biases judgments in a valence-congruent way (Clore, Schwarz, & Conway, 1994). It is therefore expected that biased cognitive responses will influence ad and brand evaluations, leading to the same interaction pattern for ad and brand evaluations as H2 specifies.

H3: Affect intensity will moderate the effect of ad-induced affect on ad and brand attitudes. When the ad-induced affect is positive, participants scoring high on affect intensity will generate more favorable ad attitudes [H3(a)] and brand attitudes [H3(b)] than those scoring low on affect intensity. However, when the ad-induced affect is negative, the two groups of participants will not differ in their ad and brand attitudes.

Extroversion/Introversion Ad-Induced Affect. Extroversion/introversion is recognized as one of the most primary personality dimensions

(e.g., Eysenck & Eysenck, 1976). In general, extroverts and introverts differ in terms of their behavior orientation (e.g., Eysenck, 1967), the values they hold (Furnham, 1984), and their attitudes toward their environments (Marjoribanks, 1989).

Additionally, extroversion/introversion seems to be associated with feelings of positive and negative affect (e.g., Costa & McCrae, 1980; Rusting & Larsen, 1995). For example, Costa and McCrae (1980) demonstrated that the more extroverted individuals are, the happier they are. Rusting and Larsen (1995) showed that extroversion is positively correlated with the degree to which individuals report experiencing pleasant affect. In contrast, Mowen, Harris, and Bone (2004) found that introversion is a positive predictor of fear responses to advertising.

Rusting and Larsen (1995) posited that individuals differ in the moods they find desirable. Their study showed that extroversion is positively associated with a desire for pleasant moods and negatively associated with a desire for unpleasant moods. This may partly explain why extroversion is associated with a predisposition for excessive rumination about positive events (Gilboa & Revelle, 1994) or why extroverts generate greater recall of positive information (Lishman, 1972). Implicit in this line of work is the notion that extroverts are more susceptible to the influence of positive affect, whereas introverts are more susceptible to the influence of negative affect (Larsen & Ketelaar, 1991).

Gray (1981) proposed that extroverts have a more sensitive behavioral activation system, suggesting that their behaviors are oriented toward award gaining. In clear contrast, introverts are characterized by a more sensitive behavioral inhibition system that is stimulated by punishment. Consistent with Gray's hypothesis, and perhaps of more relevance to marketers, is the finding that extroverts perform better under positive reinforcement, whereas introverts appear to perform better under negative reinforcement (Boddy, Carver, & Rowley, 1986; McCord & Wakefield, 1981).

In line with these findings, this study asserts that extroverted and introverted participants will respond in divergent ways to ad messages that evoke positive and negative affect. Extroverted participants, who generally prefer positive reinforcement, will be more responsive to ad messages that evoke positive affect as opposed to negative affect. On the other hand, introverted participants, shown to react more to negative reinforcement, will be more responsive to ad messages that evoke negative affect rather than positive affect.

Yet, it seems simplistic to expect that individuals will be motivated to respond to affect-evoking messages in accordance with their personality traits across all conditions. Past research indicates that relevancy of persuasive messages to message perceivers encourages message elaboration (Petty & Cacioppo, 1979; Petty, Cacioppo, & Schumann, 1983) and enhances affect-congruent processing effects (Kuiper et al., 1985). Therefore, it is predicted that only when messages are relevant will individuals engage in more message elaboration when the ad messages evoke the desirable affect.

H4: When the framed product attribute is relevant to the participants, extroverted participants will generate more cognitive responses when the ad-induced affect is positive than when it is negative, whereas introverted participants will generate more cognitive responses when the ad-induced affect is negative than when it is positive. In clear contrast, when the framed product attribute is not relevant to the participants, there will be no extroversion/introversion by valence of ad-induced affect interaction.

In parallel, it is hypothesized that when the featured attributes of a product are relevant to participants, extroversion/introversion will moderate the effect of ad-induced affect on ad and brand evaluations. In particular, introverts will favor ad messages that evoke negative affect, whereas extroverts will favor ad messages that evoke positive affect. When the featured attributes are not relevant to participants, the interaction will not be generated.

H5: When the framed product attribute is relevant to the participants, extroverted participants will generate more favorable ad attitudes [H5(a)] and brand attitudes [H5(b)] when the ad-induced affect is positive than when it is negative, whereas introverted participants will generate more favorable ad and brand attitudes when the ad-induced affect is negative than when it is positive. In clear contrast, when the framed product attribute is not relevant to the participants, there will be no extroversion/introversion by valence of ad-induced affect interaction.

STUDY 1

Methods

Design. Study 1 was designed to explore H1–H3. This study was a $2 \times 2 \times 2$ between-subjects experimental design. The two manipulated factors were context-induced affect (positive vs. negative) and ad-induced affect (positive vs. negative). The third variable was level of affect intensity (high vs. low), and participants were categorized into the groups based on their self-ratings on Larsen's (1994) affect-intensity scale.

Materials. Professionals working at an ad agency created the ad stimuli (see Appendix A). The product used in this study was a fictitious brand of facial wash. Positively framed messages suggested that the product had a special formula to help clean oily skin and give the users a clean, fresh look. Negatively framed messages described how not using the product with the special formula would lead to an oily and unclean look. Visuals and layouts were similar for ads using positive and negative frames in order to reduce any possible confounding effects.

To improve external validity, the ads were inserted between two real filler ads.

Participants and Procedures. Students ($N = 184$) were recruited from a university located in a metropolitan area in the Asian Pacific Rim region and were paid for their participation. Sixty percent of the participants were female. All participants were randomly assigned to one of the four context-induced affect by ad-induced affect conditions.

At the beginning of the experiment, participants were told that the study contained three parts. The first part was to collect happy and sad life events for ad scripts to be used in future experiments. The second part was to examine the effects of various ad formats or techniques on viewers' information processing. The final part of the study was a national survey of values and lifestyles for college students.

In the written instructions for Part 1, the participants were informed that each had been selected to provide a different type of life event, and that he or she happened to be assigned to provide a happy or sad story. The participants were then presented with a story describing a happy or sad event and were instructed to think back and then describe a happy or sad life event that they had experienced. This mood-induction procedure was similar to one used by Strack, Schwarz, and Gschneidinger (1985). The second part of the study started with participants' ratings of their affective states. Then participants read a filler ad followed by the stimuli ad and another filler ad. Next, they were asked to list the thoughts they had had while reading the ads and rate their ad and product attitudes. Finally, they rated themselves on Larsen's (1994) affect-intensity scale, as well as on other filler scales, including Snyder's (1974) self-monitoring scale and Bem's sex role inventory (1974). All of the scales were translated into Chinese following Brislin's (1987) translation and translation-back procedure. After the participants finished the study, the coordinator provided a short debriefing.

Independent Variable—Context-Induced Affect. The emotional scale contained 10 items that were selected from the UWIST mood adjective checklist (Matthews, Jones, & Chamberlain, 1990). Of the 10 items, 6 were included to measure positive and negative affective states. They were: "happy," "satisfied," "cheerful," "depressed," "dull," and "sad." Others were filler items that captured other dimensions of affective states. Cronbach's alpha was .85 for the positive items and .76 for the negative items. Because the sum of item ratings for the positive and negative scales were significantly correlated (Pearson's $r\ (182) = -.43$, $p < .01$), the negative items were reversed and averaged with the positive items. As expected, ANOVA indicated that participants who were assigned to the positive affect condition generated more positive emotional ratings than participants assigned to the negative affect condition, $F(1, 182) = 29.09$, $p < .01$, $M_{\text{positive}} = 4.96$, $SD = 0.91$, $M_{\text{negative}} = 4.18$, $SD = 1.03$. Therefore, the context-induced affect manipulation was successful.

Independent Variable—Ad-Induced Affect. Eighteen items were selected from Edell and Burke (1987); among them, six items were the same as those used for the manipulation check of context-induced affect. Cronbach's alpha was .81 for the positive items and .71 for the negative items. Because the sum of item ratings for the positive and negative scales were significantly correlated (Pearson's r (182) = –.40, $p <$ .01), the negative items were reversed and averaged with the positive items. ANOVA showed that positively framed ad messages generated more positive emotional responses than did negatively framed ad messages, $F(1, 182) = 7.23$, $p = .01$, $M_{\text{positive}} = 4.61$, $SD = 0.96$, $M_{\text{negative}} = 4.22$, $SD = 0.98$. Therefore, the manipulation of ad-induced affect was deemed successful.

Independent Variable—Affect Intensity. Participants were asked to rate their affect intensity on a 10-item, 7-point scale. The 10 items were selected from Larsen's (1984) affect intensity measures based on a pretest. Internal reliability of the scale was satisfactory (Cronbach's alpha = .74). Participants were categorized into the high- and low-affect-intensity groups with the use of a median split. As expected, the two groups differed significantly on their affect intensity ratings, $F(1, 182) = 426.44$, $p < .01$, $M_{\text{high}} = 5.77$, $SD = 0.64$, $M_{\text{low}} = 3.77$, $SD = 0.68$.

Dependent Variable—Number and Valence of Cognitive Responses. Participants were asked to write down the thoughts they had had while viewing the ads. Two independent coders, who were not aware of the research purposes, coded the responses. The coding unit was "sentence." Participants thoughts were coded into three categories based on their valence: positive, negative, and neutral. Coding procedures recommended by Kolbe and Burnett (1991) were employed to improve the objectivity of the coding. One-third of the responses were double coded to check for intercoder reliability. The percent agreement was estimated at 98 for number of thoughts and 91 for valence of thoughts. The items that the coders disagreed on were resolved through discussion. Then the two coders split up and coded the rest of the responses.

Dependent Variable—Ad Attitudes. A five-item, 7-point Likert scale was used to measure participants' ad attitudes. The items were adopted from Madden, Allen, and Twible (1988) and Mitchell and Olson (1981). The five items were: "interesting," "good," "likable," "not irritating," and "pleasant." Cronbach's alpha for the scale was .91, indicating good internal reliability.

Dependent Variable—Brand Attitudes. Brand attitudes were measured with a five-item semantic-differential scale. The items were adopted from Mitchell and Olson (1981) and Holbrook and Batra (1987). They were: "good," "likable," "pleasant," "positive," and "high quality." Reliability of the scale was high (Cronbach's alpha = .93).

Results

H1(a) stated that ad-induced affect will exert significant impacts on ad attitudes, but context-induced affect will not. ANOVA indicated that the effect of context-induced affect on ad attitudes was not significant, $F(1, 176) = 1.97, p = .16, M_{positive} = 4.51, SD = 1.21, M_{negative} = 4.70, SD = 1.07$. However, the effect of ad-induced affect was significant, $F(1, 176) = 5.74$, $p = .02, M_{positive} = 4.83, SD = 1.16, M_{negative} = 4.38, SD = 1.08$. Results of regression analyses were also as expected (for context-induced affect, $\beta = –.09, t = –1.19, p = .23$; for ad-induced affect, $\beta = .20, t = 2.78, p = .01$; for the interaction, $\beta = .06, t = .79, p = .43$). Therefore, H1(a) was supported.

H1(b) proposed that ad-induced affect will exert significant impacts on brand attitudes, but that context-induced affect will not. As predicted, the effect of context-induced affect on brand attitudes was not significant, $F(1, 176) = 1.17, p = .28, M_{positive} = 4.36, SD = 1.16, M_{negative} = 4.48, SD = 0.98$, yet the effect of ad-induced affect was significant, $F(1, 176) = 10.82, p < .01, M_{positive} = 4.70, SD = 1.05, M_{negative} = 4.13, SD = 1.02$. Results of regression analyses were also consistent with expectations (for context-induced affect, $\beta = –.06, t = –.86, p = .39$; for ad-induced affect, $\beta = .26, t = 3.68, p = .01$; for the interaction, $\beta = .01, t = .01, p = .99$). Therefore, H1(b) was supported.

It is important to note that there was no significant interaction between context-induced affect and ad-induced affect on ad attitudes, $F(1, 176) = 0.24, p = .63$, and brand attitudes, $F(1, 176) = 0.05, p = .82$, suggesting that consistency effects did not emerge.

H2(a) predicted a significant interaction between affect intensity and ad framing on the total number of cognitive responses. As expected, the interaction was significant, $F(1, 176) = 4.90, p = .03$. Further simple effects tests indicated that for positive ad messages, participants with high affect intensity generated significantly more cognitive responses than participants with low affect intensity, $F(1, 88) = 5.90, p = .02, M_{high} = 5.40, SD = 3.52, M_{low} = 3.78, SD = 2.50$. However, for negative ad messages, there was no difference between the groups on number of cognitive responses generated, $F(1, 88) = 0.24, p = .63, M_{high} = 3.75, SD = 2.53, M_{low} = 3.97, SD = 2.76$ (see Figure 1). Therefore, H2(a) was fully supported.

H2(b) predicted the same interaction for positive cognitive responses. The interaction between affect intensity and ad-induced affect on the total number of positive cognitive responses was significant, $F(1, 176) = 3.93, p = .05$. Simple effects tests indicated that when positive ad messages were viewed, those with high affect intensity generated significantly more positive cognitive responses than those with low affect intensity, $F(1, 88) = 4.10, p = .05, M_{high} = 4.55, SD = 4.04, M_{low} = 3.19, SD = 2.94$). In contrast, when negative ad messages were viewed, affect intensity did not predict the number of positive cognitive responses generated, $F(1, 88) = 0.36, p = .55, M_{high} = 2.20, SD = 2.46, M_{low} = 2.52, SD = 2.76$ (see Figure 2). Therefore, H2(b) was fully supported.

H3(a) stated that affect intensity will moderate the effect of ad framing on ad attitudes. Yet, the interaction between affect intensity and ad-induced affect was not significant, $F(1, 176) = 1.97, p = .16$. Because H3(a) was theory driven and developed *a priori*, further simple effects tests were conducted (see Winer, Brown, & Michels, 1991). Specifically, for positive ad messages, participants with high affect intensity reported significantly more favorable ad attitudes than participants with low affect intensity, $F(1, 88) = 4.30, p = .04, M_{high} = 5.03, SD = 1.21, M_{low} = 4.52, SD = 1.02$. However, for negative ad messages, affect intensity did not predict ad attitudes, $F(1, 88) = .02, p = .88, M_{high} = 4.39, SD = 0.89, M_{low} = 4.36, SD = 1.23$ (see Figure 3). Even though the interaction was not significant, the results of simple effects tests were as expected. Therefore, H3(a) was weakly supported.

According to H3(b), affect intensity will moderate the effect of ad framing on brand attitudes. As expected, the interaction between affect intensity and ad-induced affect was significant, $F(1, 176) = 3.83, p = .05$. Further simple-effects tests indicated that, when considering positive ad

Figure 1. The interaction between affect-intensity levels and ad types on number of thoughts.

Figure 2. The interaction between affect intensity levels and ad types on number of positive thoughts.

messages, participants with high affect intensity reported significantly more favorable brand attitudes than participants with low affect intensity, $F(1, 88) = 6.17, p = .02, M_{high} = 4.91, SD = 1.02, M_{low} = 4.37, SD = 1.02$. In contrast, when considering negative ad messages, affect intensity did not predict brand attitudes, $F(1, 88) = 0.08, p = .78, M_{high} = 4.10, SD = 0.88, M_{low} = 4.16, SD = 1.14$ (see Figure 4). Therefore, H3(b) was fully supported.

STUDY 2

Methods

Design. Study 2 was designed to test H4 and H5. This study was a $2 \times 2 \times 2 \times 2$ between-subjects experimental design. The two manipulated factors were context-induced affect (positive vs. negative) and ad-induced affect (positive vs. negative). The two individual difference variables were self-relevancy and introversion/extroversion.

Figure 3. The interaction between affect-intensity levels and ad types on number of ad attitudes.

Figure 4. The interaction between affect-intensity levels and ad types on number of brand attitudes.

Materials. Professionals working at an ad agency created the ad stimuli (see Appendix B). The product used in this study was a fictitious brand of lip balm. Positively framed messages suggested that the product had a special formula to moisturize dry lips, whereas negatively framed messages described how not using the product with the special formula would lead to dry lips.

Procedures and Participants. Participants were recruited through ads posted at the campus of a university located in a metropolitan area in the Asian Pacific Rim region. Those who were interested in participating were asked to contact the researcher via e-mail. Then the researcher sent those who were interested a list of screening questions asking whether or not they were concerned about an extensive variety of problems, such as split ends, cold feet, oily face, and dry lips. Those who were concerned about dry lips were categorized as the self-relevant group, and those who were not concerned about dry lips were categorized as the self-irrelevant group. The respondents were asked to come to the lab for one experimental session. Sessions were offered at different morning and evening hours. When participants arrived, they were randomly given a folder that contained manipulation materials to fit one of the four context-induced affect by ad-induced affect conditions. Within the folder, there were instructions for the study. Similar to Study 1, participants were told that the study contained three parts. The rest of the procedures were the same as in Study 1, the only difference being that participants were also asked to rate themselves on the Eysenck, Eysenck, and Barrett (1985) introversion/extroversion scale during the final section of the study. In total, 93 people participated in the study; 61 of them were female.

Independent Variable—Context-Induced Affect. The same scale as in Study 1 was adopted here. Cronbach's alpha was .83 for the positive items and .84 for the negative items. Because the sum of the item ratings for the positive and negative scale were significantly correlated (Pearson's r (91) = –.40, p = .01), the negative items were reversed and averaged with the positive items. As expected, participants who were assigned to the positive affect condition had more positive emotional ratings than did participants who were assigned to the negative affect condition, $F(1, 91) = 15.55, p = .01, M_{\text{positive}} = 5.04, SD = 0.91, M_{\text{negative}} = 4.20$, SD = 1.11. Therefore, the manipulation was successful.

Independent Variable—Ad Message-Induced Affect. The same scale as in Study 1 was adopted here. Cronbach's alpha was .84 for the positive items and .73 for the negative items. Because the sum of the item ratings for the positive and negative scale were significantly correlated, Pearson's r (91) = –.53, p = .01, the negative items were reversed and averaged with the positive items. Consistent with expectations, positively framed ad messages generated more positive emotional ratings

than negatively framed ad messages, $F(1, 91) = 3.96, p = .05, M_{\text{positive}} = 3.93, SD = 1.14, M_{\text{negative}} = 3.48, SD = 1.02$. Therefore, the manipulation was successful.

Independent Variable—Self-Relevancy. Participants were categorized into the self-relevant and irrelevant groups using screening questions at the first stage of recruitment. Then, in the lab, participants used a 7-point scale to rate their agreement with three statements that were designed to capture self-relevancy: "You are concerned about dry lips," "Dry lips bother you very much," and "You would like to reduce the problems caused by your dry lips." Internal reliability of the scale was high (Cronbach's alpha = .93). Participants categorized into the two self-relevancy groups differed in their responses to the three statements, with self-relevant participants generating higher ratings than self-irrelevant participants, $F(1, 91) = 25.30, p = .01, M_{\text{relevant}} = 5.34, SD = 1.29, M_{\text{irrelevant}} = 3.81, SD = 1.62$. Therefore, the manipulation was successful.

Independent Variable—Introversion/Extroversion. Participants were asked to rate themselves on the Eysenck, Eysenck, and Barrett (1985) 12-item introvert/extrovert scale. Reliability was satisfactory (Cronbach's alpha = .76). Participants' responses to the 12 items were averaged. Low scores indicate more introversion, whereas high scores indicate more extroversion. Based on their ratings, participants were categorized into the introvert and extrovert groups with the use of a median split. As expected, the two groups differed significantly on their ratings, $F(1, 91) = 218.98, p = .01, M_{\text{extrovert}} = 5.13, SD = 0.57, M_{\text{introvert}} = 3.33, SD = 0.60$.

Dependent Variables. The same coding procedures were adopted to code participants' open-ended responses. The percent agreement between the two coders was estimated at 95 for number of cognitive responses. This study employed the same scales for ad and brand attitudes used in Study 1. Cronbach's alpha was estimated to be .93 for both attitude scales.

Results

In replication of Study 1, the influence of ad-induced affect on ad attitudes was significant, $F(1, 77) = 4.82, p = .03$, but the main effect of context-induced affect on ad attitudes was not significant, $F(1, 77) = 1.20, p = .28$. The interaction also was not significant, $F(1, 77) = 4.82, p = .13$. Similar results emerged for brand attitudes. The influence of ad-induced affect on brand attitudes was marginally significant, $F(1, 77) = 3.41, p = .07$. Neither the main effect of context-induced affect, $F(1, 77) = .75, p = .39$, nor the interaction effect was significant, $F(1, 77) = .15, p = .70$.

H4 proposed a significant three-way interaction among ad-induced affect, introversion/extroversion, and self-relevancy on cognitive responses. ANOVA showed that the three-way interaction was not significant, $F(1,$

77) = 0.79, p = .38. Yet, as expected, simple interaction tests showed that in the self-relevant group, the ad-induced affect by introversion/extroversion interaction was significant, $F(1, 38) = 6.42$, p = .02. The introverted participants generated more cognitive responses when the message evoked negative affect than when it evoked positive affect, $M_{\text{positive}} = 3.50$, $M_{\text{negative}} = 4.82$, and the extroverted participants generated more cognitive responses when the message elicited positive affect as opposed to negative affect, $M_{\text{positive}} = 6.20$, $M_{\text{negative}} = 2.81$ (see Figure 5). In clear contrast, in the self-irrelevant group there was no significant interaction between ad-induced affect and introversion/extroversion, $F(1, 39) = .03$, p = .86. Therefore, H4 was partially supported.

The three-way interaction between ad-induced affect, introversion/extroversion, and self-relevancy on ad attitudes was marginally significant, $F(1, 77) = 3.72$, p = .06. Further analyses indicated that, for the self-relevant participants, the expected ad-induced affect by introversion/extroversion interaction was significant, $F(1, 38) = 6.43$, p = .02. Introverted participants generated more favorable ad attitudes when messages evoked negative affect rather than positive affect, $M_{\text{positive}} = 2.95$, $SD = 1.19$, $M_{\text{negative}} = 3.89$, $SD = 1.21$, and extroverted participants generated more favorable ad attitudes when the message elicited positive affect as opposed to negative affect, $M_{\text{positive}} = 4.47$, $SD = 1.19$, $M_{\text{negative}} = 3.55$, $SD = 1.34$ (see Figure 6). In clear contrast, for self-irrelevant participants, there was no significant interaction between ad-induced affect and introversion/extroversion, $F(1, 39) = .05$, p = .83. Therefore, H5(a) was supported.

As expected, the three-way interaction among ad-induced affect, introversion/extroversion, and self-relevancy on brand attitudes was significant, $F(1, 77) = 4.59$, p = .04. Further analyses indicated that in the self-relevant group, a significant ad-induced affect by introversion/extroversion interaction emerged, $F(1, 38) = 8.27$, p = .01. Introverted participants generated more favorable brand attitudes when messages were framed in a negative way rather than in a positive way, $M_{\text{positive}} = 3.16$, $SD = 0.98$, $M_{\text{negative}} = 3.97$, $SD = 1.39$, and extroverted participants generated more favorable brand attitudes when messages were framed in a positive way rather than in a negative way, $M_{\text{positive}} = 4.74$, $SD = 1.23$, $M_{\text{negative}} = 3.71$, $SD = 1.22$ (see Figure 7). In contrast, in the self-irrelevant group there was no significant interaction between ad-induced affect and introversion/extroversion, $F(1, 39) = 0.01$, p = .92. Therefore, H3(b) was supported.

DISCUSSION

This article demonstrates the dominating influence of ad-induced affect on ad and brand evaluations in contexts where positive or negative affect has been induced. It accomplishes this by exploring the influence of affect induced by positively and negatively framed ad messages. Findings sup-

Figure 5. The interaction between extroversion and ad types on number of thoughts when the product is relevant.

Figure 6. The interaction between extroversion and ad types on ad attitudes when the product is relevant.

Figure 7. The interaction between extroversion and ad types on brand attitudes when the product is relevant.

port a causal relevancy hypothesis. Ad-induced affect biased individuals' evaluations of the ad and the advertised brand in a valence-congruent way, whereas context-induced affect did not account for significant variance in ad and brand judgments. These findings suggest that participants may be able to discern the relevance of the two sources of affect to

the target ad being judged and, in the process, discount the influence of irrelevant (context-induced) affect. It is also worth noting that the interaction between context-induced and ad-induced affect was not significant, which is evidence against a consistency effect.

Findings have important implications for marketers. By carefully designing ad messages, marketers may be able to have control over which of the audience's affective responses will be evoked, and eventually, over how these affective responses encourage the audience to evaluate the advertised product in a more positive light. This article does not, however, argue that context-induced affect is of no importance to marketers. It is likely that if advertising itself is not affect eliciting, context-induced affect may still color participants' evaluations of the ad and the brand by priming affect-congruent cognitive responses and interpretations. Future research can explore this possibility.

This study only explores the influence of ad-induced affect for on-line judgments of ads and brands. Off-line retrieval-based judgments are also of concern to marketers. As the Bower and Forgas (2000) "causal belonging hypothesis" suggests, when the emotional reaction and the target are causally related, participants associate the emotion with the specific target in their memory. If ad-induced affect is more likely to be associated in memory with the target than context-induced affect, it will also be more likely to exert influences on judgments after a time delay, as long as the affect experienced at the ad exposure can be retrieved from memory. This seems to be one of the important directions for future investigations.

In an attempt to respond to past literature calling for research into personality differences, this study explored the moderating influences of affect intensity and introversion/extroversion on responses to affect evoking ads. Consistent with expectations, individuals with different personality traits varied in their responses to ad messages that elicited positive and negative affect.

What underlies the different patterns of responses generated by individuals with high and low affect intensity is a mood-management mechanism that encourages those high in affect intensity to elaborate on positive messages more than those low in affect intensity, assuming greater elaborations will bring about more positive affective experiences. Due to this difference, high-affect-intensity participants generated more valence-congruent cognitive responses and more favorable ad and brand attitudes. However, neither those high nor low in affect intensity were motivated to elaborate on ads that induced negative affect.

Findings that introverts elaborated more on and evaluated more favorably ad messages that elicited negative affect rather than positive affect may seem counter-intuitive. Yet, the results are consistent with Gray's (1981) theory. Gray's theory has been widely applied in psychology literature to explain why individuals varying on extroversion respond differently to positive and negative affect and incentives. This is the first time this framework has been adopted in consumer research to understand how positive and negative ads can generate divergent effects for

introverts and extroverts. Future research can also employ this theoretical framework to further explore how this personality trait may determine individuals' responses to other ad tactics.

Individuals who differ on these two personality traits theoretically undergo different psychological mechanisms when responding to positive and negative ad messages. On the one hand, a pleasure-approach and pain-avoidance mechanism is posited to explain the differences and similarities between those high and low in affect intensity. On the other hand, variations in behavioral activation and inhibition systems proposed by Gray's (1981) theory may account for the different results for extroverts and introverts in response to positive and negative ads. Direct tests of these psychological mechanisms are necessary for future research. In addition, there may be other psychological mechanisms that can explain the findings reported in this article. For example, Smith and Petty (1995) reasoned that personality trait differences influence affect-congruent cognition by altering an individual's ability or motivation to process messages. Due to all these possibilities, it is important for future research exploring the moderating influences of personality traits to test the specific underlying processes that may account for judgment biases.

Some possible limitations of these two experiments should be considered. Past studies have indicated that both ad-embedded program content (e.g., Mathur & Chattopadhyay, 1991) and irrelevant context manipulation (Batra & Stayman, 1990) can successfully induce affective states and lead to affect-congruent judgments. Instead of inserting ads into editorial contexts that evoke positive and negative affect, this study adopted a commonly applied two-stage autobiographical recall mood-induction technique to evoke positive and negative affective states. It is, however, likely that the manipulation procedure enhanced the perception of irrelevancy and encouraged participants to discount the possible influences of context-induced affect to a greater degree than inducing affect via editorial content. In addition to the relevance of context-induced and ad-induced affect to the target ad, the relative strength of the two types of induced affect should also be specifically controlled in future experiments. Another limitation is that this study explored the influence of affect induced by print ads but not television ads. Brown, Homer, and Inman's (1998) meta-analysis indicated that the influence of ad-induced affect is stronger in print ads than TV commercials. Caution thus should be taken when generalizing findings across media types. Finally, fictitious brands were used in this study. As Brown et al. (1998) documented, the influence of ad-induced affect is weaker for a novel brand than for a known brand. This may cause problems when generalizing findings reported in this study to known brands.

Regardless of the limitations, the results of these two studies provide valuable insights into understanding the influence of ad-induced affect on ad judgments, as well as the possible moderating roles that consumers' personality traits may play in the process.

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Appendix A. Ad Stimuli for Study One.

Appendix B. Ad Stimuli for Study Two.

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