

## **The Nature and Role of Affect in Consumer Behavior**

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In the intervening years since publication of the chapter “Affect and Consumer Behavior” (Cohen & Areni, 1991) in the *Handbook of Consumer Behavior* (Kassarjian & Robertson, 1991), research in consumer behavior dealing with affect has exploded, making it one of the field’s central research topics. Within psychology more generally, Schimmack and Crites (2005) located 923 references to affect between 1960 and 1980 and 4,170 between 1980 and 2000. Since research on affect has become more specialized, this chapter will concentrate on the various ways affect influences judgment and choice rather than on broader and historical perspectives. These will include the role of affect in information retrieval, differential processing of affectively colored information (including the role of affect in strengthening mental associations and memory consolidation), how and when affect provides information that influences judgments and decisions, and the motivational role of affect in guiding behavior and signaling the need for changes in vigilance, intensity, and direction. We begin, however, with some essential definitions.

## THE NATURE OF AFFECT: FEELINGS, EMOTIONS AND MOODS

### What Affect Means

There is still some carryover from the use of the term “affect” to also refer to what is, in essence, the evaluative aspect of attitudes. This stems from the classic tri-partite depiction of attitudes: cognitive, affective, and conative (see Eagly & Chaiken, 1993) and a failure to adequately differentiate between evaluative measures (e.g., favorable/unfavorable) and antecedent or subsequent processes, which might be feeling-based. Consistent with most recent

scholarly discussions, we reserve the term “affect” to describe an internal feeling state. One’s explicit or implicit “liking” for some object, person, or position is viewed as an evaluative judgment rather than an internal feeling state. As Russell and Carroll (1999a) put it:

“By *affect*, we have in mind genuine subjective feelings and moods (as when someone says, ‘I’m feeling sad’), rather than thoughts about specific objects or events (as when someone calmly says, ‘The crusades were a sad chapter in human history’).” (Pp. 3-4)

This chapter maintains the separation of affect as a feeling state that is distinct from either liking or purely descriptive cognition. So when we use the term “affect” to describe stimuli, internal and overt responses, it is only in relation to evoked feeling states. Imagine, in contrast, an advertisement whose words or images connote a happy (i.e., successful) outcome. Affective processes cannot merely be assumed. Alternative explanations (e.g., the advertised product seems likely to produce favorable outcomes) for so-called “affective” influences on subsequent evaluations and behavior must be ruled out before implicating affect. These include semantically associated changes in object meaning or construct accessibility.

This definition also raises both philosophical and empirical questions about whether such a feeling state must be consciously experienced or whether we can be unaware that we are experiencing affect. Research where subliminally presented smiling or frowning faces were used to prime affect (outside of awareness) and bring about subsequent evaluative responses (Winkielman, Zajonc, & Schwarz, 1997), is a case in point. Affective experience in the absence of an identified basis for that experience has been a staple of psychological research since Zajonc’s (1980) early work on “mere exposure.” In that program of research, repeated subliminal exposure to unfamiliar stimuli having neutral valence such as Chinese ideographs has been

shown to generate some degree of liking for the stimuli, possibly as a result of a primitive reward mechanism associated with increasing familiarity or a reduction in uncertainty. Another standard paradigm for investigating precognitive affective processes is to present (outside of awareness) a stimulus known to evoke either a negative or positive affective response (e.g., a sad face).

Following that exposure, people are asked to indicate how they are feeling (to rule out more conscious affective responses including inferences) and to rate the emotional quality of a semantically unrelated object, such as a piece of music. Using such a procedure, for example, Strahan, Spencer, and Zanna (Strahan, Spencer, & Zanna, 2002) found that affective stimuli can influence positive/negative assessments even without producing a measurable effect on people's affective experiences (i.e., reported feelings). In a particularly sophisticated study (Schimmack, 2004), subjects received masked subliminal presentations of pleasant and unpleasant pictures, followed by supraliminal presentations of an identical picture (the target) paired with a foil whose valence was either the same as the target or opposite. If the initial subliminal target exposure produced a spontaneous affective experience, participants should be better able—and they were—to discriminate the target from the foil when they had a different valence because only one object should match the originally experienced affect. Different results have frequently been observed for pictures and words when used as subliminal stimuli (Schimmack & Crites, 2005). Words have been found to elicit a skin-conductance response under conditions of very short exposure (suggesting affective experience), whereas pictures have not. However, this finding may also be due to the greater inherent polarity of the selected words relative to pictures, since the interpretation of pictures may require more cognitive resources than words having relatively fixed affective associations.

Most consumer research on affect deals with moods (e.g., Barone, Miniard, & Romeo, 2000; Cohen & Andrade, 2004; Gorn, Goldberg, & Basu, 1993; Pham, 1998) although there has been growing interest in the study of specific emotions (e.g., Lerner, Small, & Loewenstein, 2004; Raghunathan & Pham, 1999; Raghunathan, Pham, & Corfman, 2006). Moods are usually thought of as low intensity and diffuse affective states that generally lack source identification.<sup>1</sup> The individual, prompted either by physiological or hormonal/chemical activity (such as changes in levels of serotonin and dopamine) or by external stimuli (music, weather, exposure to happy versus sad information), experiences a vague sense of feeling good or bad without necessarily knowing quite why. Some days or after certain experiences, we are aware of feeling good or bad, optimistic or pessimistic, up or down, relaxed or restless, alert or drowsy. Mood states also track our bodily energy levels (e.g., blood glucose levels), our daily circadian rhythm, and our general wellness or illness, thereby guiding relatively automatic self-regulatory responses as well as more conscious decisions, as we shall discuss later on. Emotions, on the other hand, are much more differentiated and hence provide more attitude- and behavior-specific information. Feeling anger, for example, will often lead to target and context-specific responses rather than more general displays of unhappiness (Bushman & Baumeister, 1999). It should be noted, however, that specific emotions can produce mood-like effects (e.g., being angry or sad can affect a pattern of behavior) often without realizing that one has transferred the emotional response (to an identified target) to unrelated behaviors. Recent studies show that the degree of transfer will be a function of two factors: (1) the salience of the source of the emotional state—transfer is more likely when the actual source of the affect is not salient; and (2) the domain similarity between

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<sup>1</sup> As will be discussed later, more recent research suggests that incidental mood states may be more differentiated and have greater content specificity than previously thought (e.g., Lerner & Keltner, 2000, , 2001; e.g., Raghunathan & Pham, 1999; Tiedens & Linton, 2001).

the actual source of the affective state and the objectively unrelated behavior (Raghunathan, Pham, & Corfman, 2006).

Moods have been shown to be easily manipulated through exposure to affectively charged stimuli such as music, videos, and pictures, or through the recall of emotionally involving experiences (e.g., Cohen & Andrade, 2004). Note that the use of low intensity emotion manipulations, such as sadness, displeasure, or happiness, to create positive or negative mood states tends to blur the line between emotions and moods, especially when the source is made salient.

Because affect is often used as information about “how things are going” (Schwarz, 1990; Schwarz & Clore, 1983), the misattribution of incidental affect may play a powerful role in everyday life. Even experimentally-induced proprioceptive feedback of head nodding or shaking can lead a person to conclude that message-related thoughts are positive or negative (Brinol & Petty, 2003). The duration of mood changes is typically assumed to be short, from a few minutes to a couple of hours (Isbell & Wyer, 1999), although this duration probably varies with the method of instigation (Ehrlichman & Halpern, 1988; Isen, Clark, & Schwartz, 1976).

## Experimental Manipulation of Affective States

Multiple techniques have been used to manipulate individuals' transient affective states. In most experiments, participants are exposed to a sequence of ostensibly unrelated studies, where the first study is meant to manipulate people's feelings while the second assesses the dependent variables of interest. In the first study, participants might be exposed, for instance, to false positive or negative performance feedback (Barone, Miniard, & Romeo, 2000; Swinyard, 1993), cheerful or depressing movies (E. B. Andrade, 2005; Cohen & Andrade, 2004), pleasant or unpleasant music (Gorn, Goldberg, & Basu, 1993), positive or negative affective self-referential statements such as the Velten procedure (Velten, 1968), unexpected gifts (Barone, Miniard, & Romeo, 2000; Isen & Simmonds, 1978), or recalling and describing in writing an affectively charged experience (Pham, 1998). Due to their transient and mild, hence, short-lived nature, experimentally induced moods may dissipate relatively fast (see Isen, Clark, & Schwartz, 1976). Therefore, regardless of the mood induction procedure, the dependent measure usually is collected not long after the manipulation. Sometimes the mood manipulation and dependent measures co-occur. Mood manipulations using background music or physical ambience, like scent, for instance, allow for a simultaneous assessment of dependent variables (Grunberg & Straub, 1992; Schwarz, Strack, Kommer, & Wagner, 1987).

There is no single best option among all potential techniques. Different techniques raise different issues in terms of potential confounds, control for intensity levels, reliability, demand characteristics, and motivational requirements. For instance, receiving an unexpected gift, a common manipulation of positive mood (Isen, Shalke, Clark, & Karp, 1978; Kahn & Isen, 1993), can activate norms of reciprocity independently of affective changes (e.g., "The

experimenter was nice to me, I'll be nice to him/her"). Similarly, false performance feedback can influence self-esteem or self-efficacy along with desired changes in affective states (Hill & Ward, 1989). Such unwanted effects might be confounding depending on the research question and other aspects of the procedure.

Asking participants to report an affectively charged personal experience can avoid some of the above-mentioned concerns. A major advantage of this method is that because each participant recruits his or her own personal experience, there is a lesser chance of confounding with the *content* of the affect-inducing event. Content-related confounds are much more likely with manipulations that involve exposure to a *common* affect-inducing stimulus across participants, such as watching a happy or sad movie. On the other hand, the personal experience method requires relatively high participant motivation; otherwise, the manipulation tends to be weakened. A second drawback of this method is that participants usually are explicitly directed to write about experiences that lead them to feel good or bad, which may enhance the likelihood of hypothesis guessing and demand artifacts. This concern is heightened if a salient mood manipulation check is administered before the dependent measures are collected. In addition, there may be extra variability in emotional states induced—hence higher experimental error—because participants may have different interpretations of the type of experience they are supposed to report. Some respondents may interpret “an event that made you feel bad” as one that made them feel angry, whereas others may interpret it as one that made them feel sad. It is therefore important that the instructions be very precise when using this manipulation.

Music does not require highly motivated participants, does not direct participants to specific feelings, and has been shown to produce significant effects on judgment and behavioral measures (Gorn, Goldberg, & Basu, 1993; Gorn, Pham, & Sin, 2001). However, there is



significant variance in the population when it comes to music tastes, which can compromise reliability. Exposure to affectively charged videos has proven to be quite successful due to the general appeal of these stimuli (low motivation required), their easy-to-determine valence, and their higher intensity, compared to written or audio stimuli. However, as mentioned before, using a common video across participants within a given mood condition raises the possibility of confounding between affective experience and the semantic or episodic content of the video. To try to mitigate this problem, one can consider using different stimulus replicates across conditions or experiments. Another potential drawback of video-based inductions is that, compared to other procedures, exposure to videos may also facilitate hypothesis guessing and, consequently, demand artifacts. To avoid such concern, the cover story must be “convincing” and, also importantly, the affect manipulation check disguised. For example, Cohen and Andrade (2004) used a combined technique of video plus personal experience, in which participants were informed that the university, in order to augment its web-based teaching environment, attempted to assess the impact of audio and video stimuli transmitted through the web. Students were informed that they would watch five minutes of a video and then would perform memory and judgment recall tasks. After the video, the “memory task,” instructed them to write a personal story related to the scenes watched in the clip. After the “memory task,” a “judgment task” (i.e., the manipulation check) asked participants to assess ten items related to the video. Only three of them were affect-related. The other items were in line with the general cover story. This manipulation has shown strong and reliable effects on people’s feelings and, importantly, very low incidence of hypothesis guessing (see also E. B. Andrade, 2005).

Videos have also been used to manipulate specific emotional states, such as anger (Eduardo B. Andrade & Ariely, 2006; Phillipot, 1993) sadness and disgust (Lerner, Small, &

Loewenstein, 2004), and fear (Eduardo B. Andrade & Cohen, 2007). Restricting the effect to one specific emotion may be challenging; some video manipulations can enhance more than one specific affective state at the same time. For instance, Gross and Levenson (1995) showed that an anger manipulation tended to increase disgust levels as well. As they pointed out, “With films, it appears that there is a natural tendency for anger to co-occur with other negative emotions.” (p. 104) Still, videos and some combined techniques (video and personal story writing) are relatively successful affect manipulations (Westermann, Spies, Stahl, & Hesse, 1996).

### Physiological and Cognitive Antecedents of Emotion

The influential James-Lange theory (James, 1884) held that emotional stimuli elicited bodily responses, that is, peripheral activity such as changes in heart rate, blood pressure, and skin conductance, and that these bodily responses were translated fairly directly into conscious differences in emotional experience (e.g., fear versus anger). While there was modest success relating “energetic” physiological responses to higher arousal negative affect (compared to lower arousal states such as sadness and guilt), there was no consistent translation of bodily responses into differential positive affect. More generally, such physiological measures do not appear to reflect essential differences in the valence of emotion (Bradley, Cuthbert, & Lang, 1993; Schimmack & Crites, 2005). One response to the failure to support the James-Lange theory was to search for other, more sensitive indicants of emotional response that could then be interpreted as particular types of emotion. Facial feedback theories identified patterns that corresponded to happiness, surprise, sadness, fear, anger, and disgust (Ekman, 1973; Izard, 1977; Kleinke, Peterson, & Rutledge, 1998). However, a meta-analysis of these studies (including those where

participants were induced to adopt musculature associated with smiling and frowning) indicated that these effects were too weak to perform the central function ascribed to bodily responses in the James-Lange theory (Matsumoto, 1987).

A more basic challenge to the original theory was to question the central role of bodily response to subsequent emotional experience. Schachter and Singer (1962) made significant inroads by showing (via injections of either epinephrine or a placebo) that peripheral arousal only differentiated an emotional response from merely cognitive responses. In their two-factor theory, cognitive processes played the decisive role in interpreting the arousal that was being experienced. A substantial challenge to the bodily arousal component of this theory can be seen in other research conducted at about the same time. Lazarus and Alfert (1964) asked people to watch a film depicting a tribal ritual involving what appeared to be genital mutilation. However, half of those watching were given misinformation that the experience was actually not painful and that adolescents looked forward to this initiation into manhood, and significant cognitive control over arousal was observed. Subsequent research on spinal cord injured patients best supports the view that peripheral arousal is not necessary to the experience of emotion, but can intensify it (Mezzacappa, Katkin, & Palmer, 1999). However, the importance of emotional intensification should not be minimized. Recent research on memory, for example, demonstrates the importance of such emotional experience to memory consolidation, and is, thus, consistent with evolutionary underpinnings of classical conditioning (Cahill & McGaugh, 1998). More generally, emotional response was shown to be far more under cognitive control and appraisals of experience than had been imagined.

Since then, cognitive appraisal theories have dominated research on emotion (see Scherer, Schorr, & Johnstone, 2001, for current theoretical perspectives). While emotional

underpinnings may be somatic, and in that sense have significant evolutionary value in predisposing the body toward approach/appetitive or avoidance/inhibitory action, modern theories point to relatively few hardwired connections to discrete emotional states (Oatley & Johnson-Laird, 1987; Ortony, Clore, & Collins, 1988). Instead, such theories stress the involvement of cognitive appraisal (Scherer, Schorr, & Johnstone, 2001). These appraisal processes assign evaluative meaning to objects and events (i.e., desirable versus undesirable) and facilitate causal attributions to sources either in the external world, such as another person's actions or in our own behavior or thoughts. The combination of evaluative meaning, assessment of internal versus external causation and responsibility, and temporal perspective is then assumed to produce such highly differentiated emotions as happiness, pride, envy, disgust, sadness, anger, and fear (see Lazarus, 1991). While research supports the role of arousal in the experience of relatively intense emotions, cognitive processes (e.g., telling someone that an experience is/is not painful) play a major role and have been shown to alter the experience even when assessed by heart rate and skin conductance.

Building on earlier work by Leventhal (1980), Buck (1985), and Hoffman (1986), Cohen and Areni (1991) advanced a three-phase dynamic model in which activation of a mental concept (e.g., identification of a flashing red light) produces a largely unconscious and very rapid, sensory-level affective response. Some such responses may be largely innate (e.g., surprise) or at least potentiated by evolutionary processes, for example, (e.g., responses to taste; Steiner, Glaser, Hawilo, & Berridge, 2001). Others require very little learning beyond simple association to become generalized tendencies, such as preferences for smiling and familiar faces. These phase-one emotional responses interrupt other cognitive processes, orient attention, and bring resources to bear on the instigating stimulus. In phase two, the cognitive system attaches somewhat greater

meaning to the stimulus by automatically extracting easily processed stimulus information and associating it with experienced pleasantness/unpleasantness and arousal. Thus, the second-phase affective response becomes more differentiated through the operation of associational, rather than reasoning processes. In phase three, affective experience results from cognitive elaboration, thereby taking into account context and previous experience. At stage two, and to a much greater degree at stage three, cognitive appraisal can enhance or suppress arousal (Lazarus & Alfert, 1964) as well as create more nuanced feeling states, such as disgust rather than sadness.

## Memory for Affective Experiences

There is considerable evidence that the arousal intensity of an affective experience increases people's immediate and long-term memory for this experience (Bradley, Greenwald, Petry, & Lang, 1992; Kroeber-Riel, 1979; Thorson & Friestad, 1989), especially with respect to the central elements of this experience (Christianson, Loftus, Hoffman, & Loftus, 1991). This appears to be the case even when the source of arousal is unrelated to the material to be learned and comes after the learning has taken place, which suggests that the phenomenon may be due, in part, to a better consolidation of memory traces under high emotional arousal (Nielson, Yee, & Erickson, 2005). Emotional intensity is no guarantee of memory accuracy, however. Biases due to changes in cognitive appraisals of the events or revised standards of judgment (e.g., looking back, a person may have a different perspective on the emotion-eliciting event) as well as a desire to see things differently (e.g., when anticipating a recurrent experience such as childbirth) may intrude on people's memory (Levine, 1997; Levine, Prohaska, Burgess, Rice, & Laulhere, 2001). Retrospective assessments of affective experiences also seem to be more impacted by intensity at both the peak and the end of the experience, with duration playing a less significant role (Ariely & Loewenstein, 2000; Fredrickson & Kahneman, 1993; Kahneman, Fredrickson, Schreiber, & Redelmeier, 1993).

## THE STRUCTURE AND ASSESSMENT OF AFFECT

There are two separate research traditions among those whose work involves the assessment of affect. The first is to identify the underlying dimensions of affect by analyses of judged similarities and semantic differential ratings of mood terms, as well as facial and vocal

emotional expressions. The second combines a more functional/motivational analysis with evidence from studies of neurophysiological and hormonal processes.

The first body of work supports the existence of two general dimensions: pleasantness versus unpleasantness and activation/arousal/engagement (see Remington, Fabrigar, & Visser, 2000; Russell & Carroll, 1999a; see Russell & Carroll, 1999b; Watson, Wiese, Vaidya, & Tellegen, 1999). Research in this tradition is heavily measurement-based and has been extended into several practical domains to classify affective responses to stimuli of interest, such as pictures and advertisements, as well as to provide a more general basis for delineating categories of emotional response (Watson & Tellegen, 1985).

#### Affect Taxonomies in Consumer Research

Researchers with a primary interest in affective aspects of stimuli, such as advertisements and how people describe their affective responses to them, have been less interested in the underlying dimensionality of affect and often prefer to think in terms of affect taxonomies that correspond to more macro-level constellations or prototypes (Shaver, Schwartz, Kirson, & Oconnor, 1987). They rely on specially constructed inventories of mood and emotion terms, as well as scales that have been developed for other purposes (e.g., to represent appetitive and aversive motivational systems). In research on advertising, for example, Holbrook and Batra (1987) began with over 90 items that combined emotional responses and evaluative reactions to advertising content, and Edell and Burke (1987) used a 69-item inventory of feelings. In such research, investigators typically attempt to reduce the individual items to distinct clusters using techniques such as factor analysis and hierarchical cluster analysis (Shaver, Schwartz, Kirson, &

Oconnor, 1987). At times, claims are made about underlying structure, but the generality of such claims is questionable because of the arbitrary selection of items and stimuli, the ambiguity of hierarchical configurations of emotion terms, as well as measurement issues to be discussed below (see also Mano, 1991; Schimmack & Crites, 2005). Nevertheless, such research may serve the investigator's needs in differentiating between types of affective responses to content and situations (e.g., store settings) of particular interest. Much of the earlier affect taxonomy research in consumer behavior, at least through 1990, was reviewed by Cohen and Areni (1991), and so it will not receive explicit attention here.

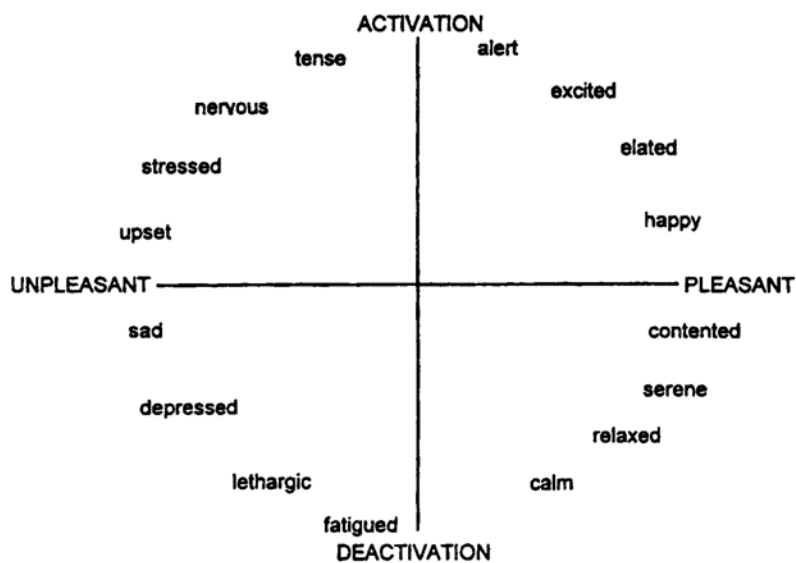
An extremely comprehensive analysis of many of the emotion measures used in consumer research was carried out by Richins (1997), who identified shortcomings in their ability to address a greater variety of consumption experiences. These included the contemplation, purchase, use, and subsequent reactions to a broad variety of products and services from the mundane to the important and sentimental (see also C. Derbaix & Pham, 1991). She identified a list of 175 emotion terms that had been used in consumer research and that satisfied criteria developed by Ortony, Clore & Collins (1988) to screen out non-emotion terms focusing on bodily states such as "sleepy," subjective evaluations such as "feeling confident," behaviors and action tendencies such as "crying" and "hesitant," and cognitive states such as "interested." She supplemented this list by prompting open-ended self reports of positive and negative feelings (most commonly, the positive affective terms "happiness," "relief," and "excitement," but also "worry," "sadness," and "guilt") to a variety of consumption experiences. Although the underlying dimensionality of the resulting "Consumption Emotion Set" (CES) is somewhat ambiguous (beyond the traditional positive-negative axis), the instrument appears to be quite



useful for those who wish to assess consumers' affective responses to a more comprehensive set of consumption experiences.

### Underlying Dimensions: The Bipolarity of Affect

More basic research on the structure of affect attempts to identify relationships among two primary components of affect, pleasantness and arousal/activation. Russell (1980) originally proposed that these two dimensions be viewed as a circumplex, that is, a model in which individual mood and emotion descriptors are systematically arranged around the perimeter of a circle. Data from Russell and Feldman Barrett, (1999) indicate that affective structure actually falls somewhere between a classic simple structure in which the variables cluster in dense groups around labeled axes and a true circumplex, as in Figure 1, in which the variables are more evenly spaced and define a complete circle.



*Figure 1.* The circumplex model of affect. The circumplex model describes affect in terms of the two orthogonal dimensions of valence and activation. From "The structure of current affect: Controversies and emerging consensus," by L. Feldman Barrett and J. A. Russell, 1999, *Current Directions in Psychological Science*, 8, p. 11. Copyright 1999 by the American Psychological Society. Reprinted with permission.

Within this measurement tradition, there has been a debate over the bipolarity versus independence of positive and negative affect. When people experience and report affect, and negative affect is high, does that mean that positive affect is low (i.e., bipolarity)? When thinking about implications of bipolarity, it is important to differentiate between “core affect” (Russell & Barrett, 1999) and evaluative outcomes of affective processes. The latter are the result of cognitive appraisals and clearly allow for mixed assessments (i.e., positive in some respects and negative in others). Core affect, on the other hand, refers to how a person is feeling emotionally at a point in time. Also, when the analysis shifts to over-time emotional experiences (Diener & Irannejad, 1986; Diener, Smith, & Fujita, 1995), bipolarity assumptions offer no predictions about independence; people who are asked to report emotional states using experience sampling diaries are just as likely to have self reports indicating high average negative affect, regardless of their average levels of positive affect.

A general consensus has emerged that a bipolar structure dominates (see Russell & Carroll, 1999a), as acknowledged even by original proponents of the independence assumption (see Watson & Clark, 1997; Watson, Wiese, Vaidya, & Tellegen, 1999). While interested readers should consult the extensive literature directly, several key issues must be noted. First, tests of independence versus bipolarity require truly independent measures of positive and negative affect. Using bipolar items (e.g., -3 = sad, 0 = neutral, +3 = happy) artificially promotes bipolarity. On the other hand, using unipolar items often leaves the lower endpoint of the scale ambiguous. For example, if respondents are asked to rate their happiness on a 1-5 scale going from “not at all” to “extremely,” does a “1” mean a mere absence of happiness or an opposite

state such as sadness? In addition, where does neutrality lie in such a scale? Such measurement issues can have major influences on the factor structure of the resulting scale.

Even assuming independent measurement of positive and negative affect, the bipolarity of specified circumplex axes (corresponding to particular affective states shown in Figure 1 and measured by various scales) has proven to be far more problematic. A primary reason is the confounding caused by variations in arousal/engagement that prevent the semantic opposites in Figure 1 from lying along a 180 degree angle. Across a number of such studies, positive and negative affect have been found to be moderately negatively correlated (typically around  $r = -.44$ ) rather than nearly perfectly negatively correlated, implying bipolarity, or nearly perfectly uncorrelated, implying independence (Diener, Smith, & Fujita, 1995; Watson, Clark, & Tellegen, 1988; Watson, Wiese, Vaidya, & Tellegen, 1999). However, the correlation increases dramatically when people report affect in the presence of strong, intense emotion (Diener & Irannejad, 1986), demonstrating the bipolarity of strong emotional states. On the other hand, feelings originally characterized as low positive affect (hence low in activation/arousal) and that correspond to quietude and calmness are not far removed from low negative affect states (e.g., sluggish) characteristic of mild depression. Consider a person who views himself as experiencing a lack (or loss) of pleasure or lack of response to pleasurable stimuli. At low levels, then, self reports of positive and negative affect can be positively correlated (Watson, Wiese, Vaidya, & Tellegen, 1999), suggesting independence.

Underlying neurophysiological processes clearly register and potentiate positive and negative affect simultaneously. Though conflict and/or ambivalence would seem to be logical consequences of events and stimuli that simultaneously prompt fear and excitement, making effective reactions difficult, emotional paralysis is not the norm. A great deal of current research

beyond the scope of this chapter is providing substantial insight about how these underlying neurophysiological processes translate into more molar responses. We will discuss some relevant work on “mixed emotions” a bit later.

### The PANAS Scales: Combining Valence and Activation

Consumer researchers rely heavily on the positive and negative affect scales of the PANAS (Watson, Clark, & Tellegen, 1988). The positive cluster consists of active, alert, attentive, determined, enthusiastic, excited, inspired, interested, proud, and strong. The negative cluster consists of afraid, ashamed, distressed, guilty, hostile, irritable, jittery, nervous, scared, and upset. While this instrument has proven to be useful in many studies, there are two significant issues that consumer researchers should consider. First, the two scales do not cover the full range of positive and negative affect. Low to moderate activation states (e.g., happy, positive, satisfied, serene, pleased) are missing from the positive affect scale where high activation states (e.g., active, alert, attentive, excited) predominate. Low to moderate activation states (e.g., unhappy, negative, depressed, sad) are also missing from the negative affect scale where high activation states (distressed, jittery, upset) predominate. This is not an oversight, though perhaps an inartful choice of labels. Watson and colleagues were clear at the outset that they wished to capture a combination of positive affect *and* activation (and the same enhanced activation on the negative side). In effect, Watson and Tellegen (1985) rotated the axes 45° to attempt to focus on two orthogonal dimensions that they now term positive activation and negative activation (Watson, Wiese, Vaidya, & Tellegen, 1999).

The functional significance of these two dimensions was recognized by Fowles (1994). PA corresponds to affect that energizes and facilitates approach behavior and reward seeking; whereas NA corresponds to affect that inhibits similar behavior and leads instead to avoidance—a “stop, look and listen” response to the environment. Considerable research in neurophysiology is being directed to understanding the processes responsible for these appetitive and aversive effects, but that is beyond the scope of this chapter (for a review, see Lang, 1995).

Most recently, then, affect researchers have been redefining the PANAS instrument to more appropriately recognize its measurement of positive activation and negative activation (J. T. Larsen, McGraw, & Cacioppo, 2001; Schimmack & Crites, 2005). The second and related problem with the PANAS instrument is that it violates the semantic-opposites requirement listed earlier for a test of bipolarity. Only positive affective states of high activation are semantically opposite (180° away) of negative affective states of low activation. Russell and Carroll (1999a) note that the negative set includes none of the semantic opposites of the positive set because the opposite of positive activation is not negative activation, but a state combining negative affect and low arousal. Accordingly, PANAS does not have psychometric properties that allow it to be used to investigate questions involving the independence of positive and negative affect.

In a reanalysis of available data, Russell and Carroll (1999a) identified three clusters of positive items that could alternatively be viewed as varying continuously in arousal. The first cluster involves positive affective states of high activation such as being enthused, ebullient, excited, and energetic. A second cluster involves positive affective states of moderate activation such as being happy, gratified, pleased and content. A third cluster involves positive affective states of low activation such as being calm, serene, tranquil and relaxed. A parallel clustering was uncovered on the negative affect side: (1) negative affective states of high activation such as

being tense, upset, jittery, and nervous; (2) negative affective states of moderate activation such as being unhappy, miserable, discontent and troubled; and (3) negative affective states of low activation such as being depressed, bored, lethargic, and glum.

### Mixed Emotions

A person can feel sad and guilty *or* happy and proud at the same time. But is it possible to feel guilty and proud (or any other combination of oppositely valenced emotions) at the same time? Imagine, for example, being very successful in a negotiation in a third-world country that deprived the seller of money that had significantly greater value to her than to you. You might feel pride at your skill (particularly if others in your group did less well in similar negotiations), but you also may experience guilt. Do we simply shift back and forth in such emotional quandaries (alternating between positive and negative feelings), or can we actually be happy and sad at the same time? Note that this is a different issue from an evaluation of one's behavior (which might be tempered because of oppositely-valenced emotions) or how a person would translate mixed emotions in responding to a sad-happy scale, since a person would need to resolve that conflict in order to make such judgments. Russell and Carroll (1999a) argue that the bipolarity of emotional experience implies that when you are happy, you are not sad, just as when you are hot, you are not cold. Strictly speaking, that claim is very strong since being at one point on the abscissa of an affect distribution precludes being at any other point. As Larsen et al. (2001) point out, bipolarity implies a linear relationship, and thus a correlation close to -1. Mutual exclusivity of positive and negative affect, on the other hand, would produce intermediate degrees of independence. But does any level of correlation between measures of

positive and negative affect imply that any (even low) levels of happiness preclude *experiencing* sadness? Watson and Tellegen (1999) maintained that sadness decreases as happiness increases. In that sense, happiness and sadness regularly co-occur and are only mutually exclusive when people are maximally happy or maximally sad.

Williams and Aaker (2002) employed either happy, sad, or mixed emotional appeals by combining the same picture with different characterizations of it. They found that the acceptance of the duality of emotions (via mixed emotional appeals) was greater among Asian American than Anglo Americans (who actually reported discomfort), although both groups reported experiencing a combination of happiness and sadness when given the mixed emotional appeal. Such self reports are ambiguous since it is difficult to know whether people assume they should be experiencing mixed emotions when confronted with a stimulus presenting a happy *and* sad event or could be translating their “somewhat sad” (or somewhat happy) feelings on to scales that allow them to report mixed emotions.

A well-known demonstration of mixed emotions was carried out by Larsen et al., (2001). They exposed people to a mixture of happy and sad events in the movie “Life is Beautiful” in which a father seeks to keep his child’s spirits up while they are in a concentration camp. Viewers reported mixed feelings of happiness and sadness. Since people may well have alternated back and forth, in a subsequent study, Larsen et al. (2004) created a gambling context which led to disappointing wins (because people expected more favorable outcomes) and relieving losses (because people expected even worse outcomes). A button-pressing task suggested that people, in fact, experienced mixed emotions simultaneously. Note, however, that these are unlikely to be extremely positive *and* extremely negative feelings—a combination that seems difficult to imagine. So, another possibility is that people subjectively interpreted these

more moderate feelings as though they were part positive and part negative in light of the information they were given. Such findings raise important questions about the nature of affective experience.

Evidence supporting mixed emotions has also shed new light into the potential processes underlying the consumption of products and services that—at least from an outside observer’s point of view—are expected to produce negative feelings (e.g., watch horror movies, practice dangerous sports, etc). Andrade and Cohen (2007) point out that previous theories tended to rely on the assumption that positive and negative feelings cannot be experienced at the same time. As a result, people who deliberately exposed themselves to apparent sources of negative feelings either do not experience much negative affect (Fenz & Epstein, 1967; Zuckerman, 1996) or focus on its relieving consequences—after removal of the aversive stimuli (Solomon & Corbit, 1974; Zillmann, 1980). Andrade and Cohen showed the importance of relaxing the single affective valence assumption in order to provide a more complete understanding of the phenomenon. In a series of four studies, it was shown that after exposing participants to horrifying scenes of a film clip (scenes from *The Exorcist*), fear approach (horror movie watchers) and fear avoidance (non-horror movie watchers) consumers displayed strikingly similar levels and patterns of negative affect. However, fear approach consumers also showed increased levels of positive affect, whereas fear avoidance consumers showed no signs of positive experiences. Also importantly, the authors demonstrated that mixed feelings are more likely when individuals are able to place themselves within a protective (detachment) frame: “An ideal detachment frame gives people the ability to increase psychological distance from the main actors of the movie, while still absorbing the impact of the scenes” (p. 32). When presented with the actors’ biography prior to the movie, and the actors’ “regular” pictures next to the video during the scenes, which was supposed to



remind the audience that these were simply actors playing a role, fear-avoidance and fear-approach participants reacted similarly, both displaying increased levels of positive or negative affective states during the movie. People tend to deliberately choose to expose themselves to sources of negative affect when a psychological protective frame is present, as it allows for the co-activation of positive and negative affect. A similar rationale has been adopted to show the presence of mixed feelings of disgust and amusement as a result of video exposure (Hemenover & Schimmack, 2004).

## AFFECT AND CONSUMER JUDGMENT AND DECISION MAKING

It is useful to distinguish three types of affect in consumer judgment and decision making. *Integral affect* refers to affective responses that are genuinely experienced and directly linked to the object of judgment or decision.<sup>2</sup> Integral affective responses include momentary feelings experienced through direct exposure to the object itself (such as the pleasant feeling of tasting a fine wine) and those experienced in response to some representation of the object—a representation that may be externally provided (e.g., a TV commercial for a product) or internally generated (e.g., thinking about a product). These affective responses are integral to the extent that they are elicited by *features* of the object, whether these features are real, perceived, or only imagined.

*Incidental affect* refers to affective experiences whose source is clearly unconnected to the object to be evaluated. Most of the literature on mood effects on consumer behavior (e.g., Gardner, 1985; e.g., Kahn & Isen, 1993; Lee & Sternthal, 1999) deals with incidental affect in that the source of the mood is typically unrelated to the judgment or decision being made. In

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<sup>2</sup> The distinction between integral and incidental affect was first introduced by Bodenhausen (1993). We elaborate on this distinction by identifying a third type of judgment and decision-relevant affect: task affect.

addition to a person's current mood, incidental affect may also come from a person's emotional dispositions (such as chronic anxiety or depression) and temperament (such as general optimism or pessimism), or from any contextual stimuli associated with integral affect (such as background music, pleasant scent, etc.).

*Task-related affect* lies somewhere between integral and incidental affect. It refers to affective responses that are elicited by the task or process of making judgments and decisions, as opposed to direct, integral responses to features of the target objects or purely incidental feelings. For example, the emotional stress of having to choose between two very attractive offers would be considered task-induced in that it is the *process* of having to choose between these two offers that is stressful, not the offers themselves. Indeed, decisions may trigger unpleasant task-related affect even when the options are associated with pleasant integral affect, for example, a choice between two vacation destinations. In the above example, the emotional stress experienced would not be incidental either because, by definition, it would not have arisen had a judgment or decision not been required. Each type of affect will be discussed separately in relation to consumer judgment and decision making.

## Integral Affect in Judgment and Decision Making

### *The Influence of Integral Affect on Target Evaluation*

Numerous studies across various disciplines show that integral affective responses to a target object—whether the object is a product, a person, or a company—are often incorporated into a summary evaluation of the object. In general, though not always, objects that elicit pleasant feelings, such as a beautiful symphony, a sweet dessert, or an attractive singer, are

evaluated more favorably, and objects that elicit unpleasant feelings, such as a noisy apartment, a sour tasting dish or a rude salesperson, are evaluated less favorably. The relation between integral affective responses and object evaluation is so strong that, for a long time, affect and evaluation (or attitude) were considered to be synonymous (e.g., Fishbein & Azjen, 1975). Nevertheless, despite the generally strong positive correlation between measures of integral affective responses and measures of overall evaluation, there is growing consensus that the two constructs are theoretically and empirically distinct, with integral affective responses generally conceived as one of several potential antecedents or determinants of overall evaluation or attitude (see Breckler & Wiggins, 1989; Crites, Fabrigar, & Petty, 1994; Pham, Cohen, Pracejus, & Hughes, 2001; Wyer, Clore, & Isbell, 1999; Zanna & Rempel, 1988).

In an early demonstration of the influence of integral affective responses on summary evaluations, Abelson, Kindler, Peters, and Fiske (1982) documented in two large surveys that people's emotional responses to prominent politicians (notably, Jimmy Carter, Gerald Ford, and Ronald Reagan) were highly predictive of their overall attitudes and preferences toward these politicians. Importantly, people's emotional responses predicted their attitudes *over and above* their own party affiliation and their assessments of the politicians' traits and behaviors. A major theme of research in social psychology and consumer research during the 1980's and 1990's was that integral affective responses to various target objects may predict judgment, choice, and behavior toward these objects over and above assessments based on more descriptive or "cognitive" bases of judgments such as beliefs, stereotypes, base-rates, prior attitudes, etc. In marketing and consumer research, this theme was pursued most extensively in the advertising domain. A large number of studies have indicated that affective responses to advertisements have direct effects on consumers' attitudes toward the ad ( $A_{ad}$ ) and at least indirect effects on

consumers' attitudes toward the brand ( $A_b$ ) through the effects on  $A_{ad}$  (cf Aaker, Stayman, & Hagerty, 1986; Batra & Ray, 1986; Brown, Homer, & Inman, 1998; Brown & Stayman, 1992; Edell & Burke, 1987; Holbrook & Batra, 1987). Some studies indicate that ad-induced affective responses may also influence  $A_b$  directly, independently of  $A_{ad}$ . (e.g., Burke & Edell, 1989; C. M. Derbaix, 1995; Morris, Woo, Geason, & Kim, 2002; Stayman & Aaker, 1988) However, the findings probably deserve further analysis because, at the time, less attention was paid to separating actual affective responses to the ad from sheer liking of the ad. In addition, the mechanisms explaining how affect was transferred from the ad to the brand were not closely examined.

Conceptually related results have been obtained across a variety of other domains of judgment, choice, and behavior. For instance, Bodur, Brinberg, and Coupey (2000) indicated that affect toward various AIDS prevention behaviors such as abstinence or condom usage predicted attitudes and intentions toward these behaviors over and above personal beliefs about these behaviors. Similarly, Allen, Machleit, and Klein (1992) reported that emotional responses to past blood donations predicted future donation behavior over and above expressed attitudes toward donation. Likewise, Oliver (1993) indicated that affective responses to products such as cars and a college class predicted overall satisfaction with these products over and above one's satisfaction with the products' specific attributes. In the investment domain, MacGregor, Slovic, Dreman, and Berry (2000) found that investment banking students' feelings toward various industry sectors (electronics, managed healthcare, etc.) were strongly predictive of their intentions to invest in these sectors, independent of the sectors' financial fundamentals. In summary, the literature indicates that integral affective responses to a variety of target objects influence consumers' overall evaluations of and behaviors toward these objects beyond more

descriptive bases of object evaluation such as beliefs, stereotypes, prior attitude, etc. However, as noted above, some caution may be called for because some of the studies in this line of research may not adequately distinguish actual feeling states from overall liking responses.

### *Underlying Processes*

Three mechanisms may explain why integral feelings have a direct influence on overall evaluation and behavior independent of one's descriptive knowledge about the target. The first two mechanisms both imply a noninferential, "automatic" influence of integral feelings on target evaluation. The first possibility is that integral feelings enter evaluations directly through simple evaluative conditioning. Evaluative conditioning refers to the transfer of evaluative meaning across stimuli that are presented simultaneously (see Staats & Staats, 1957); it differs from classical (Pavlovian) conditioning in that one stimulus does not serve as a signal of another (see De Houwer, Thomas, & Baeyens, 2001). A close proximity between a target and an integral feeling experience may result in the evaluative meaning of the feelings (mostly their valence) being carried over to the target—a mechanism sometimes called "affect transfer" in consumer research and marketing (e.g., Mackenzie, Lutz, & Belch, 1986). A second possibility builds on the idea that affective experiences are associated with particular action tendencies such as approach, avoidance, withdrawal, or confrontation (see Frijda, Kuipers, & Terschure, 1989). These action tendencies may not only carry over to actual behavior, but also be translated spontaneously into proxies of behavior such as evaluations and intentions. This mechanism would be consistent with the emerging view of affect as an embodied mode of evaluation (e.g., Clore & Schnall, 2005; Damasio, 1994; Forster, 2004; Zajonc & Markus, 1982).

A third mechanism is based on the hypothesis that integral affective responses are often viewed as sources of information during object evaluation (Schwarz, 1990; Schwarz & Clore,

1996). To evaluate a target, people may consciously inspect their feelings to see “how they feel” about it. Pleasant feelings would be interpreted as evidence of liking, satisfaction, well-being, and so on; unpleasant feelings would be interpreted as evidence of disliking, dissatisfaction, misery, and so on. This process is known as the “how-do-I feel-about-it?” heuristic (Schwarz & Clore, 1988). Numerous studies have documented the existence and operation of this heuristic both in psychology (e.g., Schwarz & Clore, 1983; see Schwarz & Clore 1996, for a review) and in consumer research (e.g., Gorn, Goldberg, & Basu, 1993; Pham, 1998; Pham, Cohen, Pracejus, & Hughes, 2001). Although the heuristic was originally proposed as an explanation of incidental mood effects on judgment (Schwarz & Clore, 1983, 1988; see the discussion of incidental affect below), there is growing evidence that the heuristic is used with integral feelings as well (Pham et al., 2001). In fact, the primary application of this heuristic—its *raison d’être*—is in relation to integral affective feelings (see Pham, 2004 for a discussion). Some research indicates that the heuristic is also used *anticipatorily* in consumer decision making. Sometimes consumers appear to construct “mental pictures” of the alternatives and assess how they feel as they hold these pictures in their minds (Pham, 1998).<sup>3</sup> (See also Gilbert, Gill, & Wilson, 2002 for conceptually related results). These pictures appear to be concrete, which explains why the reliance on momentary feelings in decision making has been found to be more pronounced among people with high imagery ability (Pham, 1998). Unlike the first two mechanisms, the “how-do-I-feel-about-it?” heuristic is assumed to be inferential, as opposed to purely associationistic or

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<sup>3</sup> This anticipatory use of the “how-do-I feel-about-it?” heuristic should be distinguished from the notion of anticipated or expected affect to be discussed further below. When relying on this heuristic anticipatorily, consumers appear to experience genuine momentary affective responses at the time of the decision (see Pham 1998, Experiment 3). These momentary affective responses, which can be called *anticipatory* affective responses, are not merely affective beliefs as is of typical anticipated or expected affect.

<sup>5</sup> These spontaneous thoughts should not be confused with the thoughts elicited by explicit requests to analyze reasons in judgments and decisions. As Wilson and his colleagues have repeatedly demonstrated, explicit requests to analyze reasons in judgments and decisions often trigger thoughts and reasons that are unrelated to the ones that people would otherwise generate and rely on spontaneously (e.g., Wilson, Dunn, Kraft, & Lisle, 1989; Wilson & Schooler, 1991).

mechanistic. That is, people are assumed to *reflect* on what their integral feelings mean for the judgment to be made; they do not rely on these feelings automatically (see Avnet & Pham, 2004 for evidence consistent with this interpretation).

The three mechanisms described above all predict a direct effect of integral affective responses on evaluations. A fourth mechanism posits an *indirect* effect. It has been suggested that integral affective responses enter evaluations only indirectly by changing the person's perceptions or beliefs about the target (e.g., Fishbein & Middlestadt, 1995). For instance, feelings of frustration toward a service provider might reinforce perceptions that “they are not reliable” or trigger beliefs that “they don't care about the customer.” It is these perceptions and beliefs—not the feelings that triggered them—that are then summarized and integrated into the overall evaluation. Consistent with this mechanism, some studies indicate that affective responses to advertisements may also influence brand attitudes by changing brand beliefs (see Brown & Stayman, 1992; Mackenzie, Lutz, & Belch, 1986). This mechanism is also consistent with a major explanation of incidental mood-congruency effects on evaluations (discussed further below). According to this explanation, evaluations tend to be assimilated toward incidental mood states because these states cue mood-consistent materials in memory, which then color perceptions of the target (Isen, Shalke, Clark, & Karp, 1978).

#### *Properties of Evaluations and Decisions based on Integral Affect*

It is widely accepted that, in general, judgments and decisions based on integral feelings are *reached more rapidly* than are comparable judgments and decisions based on descriptive inputs. Although this property was originally assumed mostly on theoretical grounds (e.g., Epstein, 1990; Zajonc, 1980), it has since been documented empirically both with stimulus-based evaluations (Pham, Cohen, Pracejus, & Hughes, 2001) and with memory-based evaluations

(Verplanken, Hofstee, & Janssen, 1998). This property should logically extend to decisions and choices as well, although this prediction remains to be tested. Three factors account for the generally greater speed of judgments and decisions based on integral affect. First, integral affect often arises very rapidly (e.g., LeDoux, 1996; Zajonc, 1980). Second, integral affective responses often enter evaluations through simple associations. Finally, even if integral affective responses have to be interpreted, as they do in the “how-do-I-feel-about-it?” heuristic, their interpretation is generally very clear (Strack, 1992).

It is also widely accepted that judgments and decisions based on integral affect generally *require less processing resources* (e.g., Epstein, 1990). As a result, any constraint on processing resources (time pressure, distraction, cognitive load, etc.) tends to increase the reliance on integral affective responses both in evaluative judgments (Pham et al., 2001) and in choices (Nowlis & Shiv, 2005; Shiv & Fedorikhin, 1999). For example, when given a choice between a tempting piece of chocolate cake (an affectively attractive option) and a healthier fruit salad (a “cognitively” attractive option), consumers whose cognitive resources were not constrained tended to choose the healthier fruit salad. However, when cognitive resources were constrained, consumers tended to choose the more tempting cake, presumably because affective drivers of preference still operated while the more cognitive drivers could not (Shiv & Fedorikhin, 1999). Similarly, Nowlis and Shiv (2005) found that distracting consumers while they are sampling a pleasant-tasting but relatively unknown brand of chocolate increases the likelihood that they will subsequently choose the sampled brand over a better-known brand of chocolate. Again, this is presumably because distraction increases the relative weight attached to the pleasant integral feelings associated with the sampling experience.



Evaluations and decisions based on integral affect also tend to be *myopic*. Immediate affective rewards and punishments tend to be weighted too heavily, whereas delayed consequences are not weighted sufficiently (see Loewenstein, 1996). This property is very salient in impulse control situations where people have to trade off the immediate hedonic consequences of an option (such as the pleasure of eating junk food or the pain of visiting the dentist) against its long-term consequences (high cholesterol and obesity; healthy teeth and gums). According to Loewenstein (1996), the myopia of affect-based judgments and decisions is caused by the differential accessibility of current and delayed affective states. Whereas the experience of immediate integral affect has strong drive properties (e.g., the cathartic anger release of yelling at an uncooperative salesclerk), it is more difficult to anticipate and vividly picture future affective states (e.g., the embarrassment of being escorted out of the store). As a result, a reliance on affect tends to yield preferences for options that are more rewarding (or less painful) in the short term even if these options are less desirable in the long run. Consistent with this proposition, recent brain imaging studies indicate that preferences for immediate rewards are associated with greater activation in parts of the limbic system that are associated with affect (McClure, Laibson, Loewenstein, & Cohen, 2004). Affective responses, it seems, are part of a decision making system of the present (Pham, 2004).

A lesser-known property of evaluations based on integral affect is that they *can exhibit relatively high consensus*. Contrary to popular beliefs that affect is highly subjective, a growing body of evidence suggests that affective judgments are, in fact, quite consensual, sometimes even more so than cognitive judgments. For instance, judgments of physical attractiveness, long thought to be purely subjective (“beauty is in the eye of the beholder”) have recently been shown to be largely universal (Etcoff, 1999). Similarly, emotional responses to music have been shown

to be largely shared (Peretz, Gagnon, & Bouchard, 1998). It has also been observed that, although juries may disagree widely on the amount of punitive damages they are willing to award in legal cases, they tend to agree strongly on how outraged they feel in response to each case (Kahneman, Schkade, & Sunstein, 1998). In fact, for a variety of everyday stimuli, people seem to agree more on how they feel toward the stimuli than on how they would cognitively assess these stimuli (Pham, Cohen, Pracejus, & Hughes, 2001). According to Pham et al., (2001), affect-based judgments will be most consensual when the integral affective responses are triggered through hardwired programs involved in bioregulation (such as the pleasure experience of eating ice cream) or through emotional schemata acquired through conditioning and socialization (e.g., the outrage elicited by an unprovoked insult). Affect-based judgments will be less consensual when based on integral affective responses arising through controlled appraisal processes such as the guilt experienced when attributing one's failure to a lack of effort.

Evaluations and decisions based on integral affect additionally tend to be *sensitive to the presence or absence of affect-producing stimuli but relatively insensitive to further variations in the magnitude of these stimuli*. This property was recently demonstrated in an interesting series of studies by Hsee and Rottenstreich (2004). In one study, respondents were asked to assess how much they would pay for a used collection of either five or ten Madonna CDs. One group of respondents was primed to make their assessments based on how they felt toward the target (Madonna and her music); the others were primed to make their assessment in a calculating fashion. Consistent with the researchers' predictions, respondents' willingness to pay for the CD collection was much more sensitive to the size of the collection among respondents who had had been primed to rely on calculation than among respondents who had been primed to rely on their feelings. In another study, respondents were asked to assess how much they would be willing to

donate for a rescue effort that would save either one or four pandas' lives. For one group of respondents the number of pandas saved was simply represented by one or four dots. For the other group, the number of pandas saved was represented by one or four cute pictures of pandas, which was expected to trigger a more affective mode of evaluation. Again, as predicted, respondents' donations were much more sensitive to the number of pandas saved in the affect-poor (dot) condition than in the affect-rich (picture) condition. Hsee and Rottenstreich (2004) explain this phenomenon as follows. Affect-based evaluations are often based on concrete mental images of the target (see Pham, 1998). Because these images are discrete, usually consisting of prototypical representations of the target (a lovely panda, a popular Madonna song), continuous quantitative information tends to be lost (Kahneman, Ritov, & Schkade, 1999).

Similarly, evaluations and decisions based on integral affect are *relatively insensitive to probabilities*, except for the presence or absence of uncertainty (Loewenstein, Weber, Hsee, & Welch, 2001; Rottenstreich & Hsee, 2001). In a telling demonstration of this phenomenon, Rottenstreich & Hsee (2001) asked respondents how much they would be willing to pay to avoid two types of negative outcomes, either losing \$20 or receiving a painful but harmless electric shock, with an either 1% or 99% probability of occurrence. Consistent with standard economic theory, respondents were willing to pay much more to avoid a 99% probability of losing \$20 (Mean = \$18) than to avoid a 1% probability of losing \$20 (Mean = \$1). However, when the decision was about receiving an electric shock, a prospect rich in negative affect, respondents were not willing to pay much more to avoid a 99% probability of shock (Mean = \$10) than to avoid a 1% probability of shock (Mean = \$7). According to Loewenstein et al. (2001), this phenomenon again arises because affective decisions and evaluations often involve anticipatory affective responses to discrete images of the options that do not incorporate probabilities.

However, affect-based decisions and evaluations are sensitive to deviations from absolute certainty (i.e., from impossibility to small probability and vice versa). For example, many consumers grossly overpay to turn zero probabilities of winning in big lotteries (a prospect rich in affect) into probabilities that are infinitesimal. Similarly, most consumers would be willing to pay large insurance or security premiums to convert minute probabilities of catastrophic events (prospects rich in affect) into zero probabilities. Loewenstein and colleagues (2001) argue that anticipatory affective responses such as dread (of negative outcomes) or hope (of positive outcomes) are sensitive to *possibility* (i.e., deviations from certainty) rather than actual probability (see also Slovic, Finucane, Peters, & MacGregor, 2002).

Finally, evaluations and decisions based on integral affect tend to have a *high degree of internal coherence* (Pham, 2004). This is because integral affective responses to a target, which are often immediate and highly accessible, often trigger a confirmatory search for information that supports or helps explain these initial feelings (Pham, Cohen, Pracejus, & Hughes, 2001; Yeung & Wyer, 2004). This confirmatory search results in a strong correlation between the immediate affective response elicited by a target and the spontaneous thoughts that people associate with the target.<sup>5</sup> This strong correlation in turn results in more polarized evaluations (Adaval, 2003). Consistent with this proposition, Pham et al., (2001) found, for instance, that affective feelings toward a variety of stimuli (magazine pictures, TV commercials, etc.) are almost perfect predictors of the thoughts generated spontaneously by the stimuli. Similarly, Yeung and Wyer, (2004) found that that consumers' initial affective responses to a product's appearance make them more likely to attend and weigh product attribute information that is evaluatively consistent with the valence of the initial affective responses. A review of neurophysiological evidence led Damasio (1994) to a similar proposition: "Somatic states,

negative or positive, caused by the appearance of a given representation, operate not only as a marker for the value of what is represented, but also as a booster for continued working memory and attention.” (p. 198) That immediate integral affect directs subsequent thoughts may partly explain why personal impressions based on very limited samples of expressive behavior (watching a 30-second video clip of an instructor teaching) are surprisingly predictive of long-term evaluations (the instructor’s end-of-semester student evaluations). (see Ambady & Rosenthal, 1992) Pham (2004) speculates that the internal coherence of affect-based judgments and decisions may have had the evolutionary purpose of promoting faster and more efficient behavioral responses to the environment by increasing the intrapsychic consistency of the signals that the person receives.

#### *Determinants of Reliance on Integral Affect*

A number of factors have been found to increase people’s reliance on integral affective responses in judgment and decision making. Although some of these factors were actually identified in studies of incidental affect, they are discussed here to the extent that they apply to integral affect as well. Because integral affective responses are easy to access, monitor, and interpret (e.g., Pham, Cohen, Pracejus, & Hughes, 2001; Wyer, Clore, & Isbell, 1999), consumers tend to rely on integral affect more when (a) their motivation to process information is low (e.g., Miniard, Bhatla, Lord, Dickson, & Unnava, 1991; Petty, Schumann, Richman, & Strathman, 1993), (b) they are distracted, cognitively constrained, or under time pressure (e.g., Albarracin & Wyer, 2001; Pham, Cohen, Pracejus, & Hughes, 2001; Shiv & Fedorikhin, 1999), (c) other bases of evaluation are ambiguous (e.g., Gorn, Pham, & Sin, 2001; e.g., Isen & Shalcker, 1982; Miniard, Bhatla, & Sirdeshmukh, 1992), or (d) they lack expertise in the target domain (Ottati & Isbell, 1996; Srull, 1987). This type of results has led some authors to theorize that the

reliance on feelings in judgment and decision making is primarily a low-involvement, simplifying strategy (e.g., Clore, Schwarz, & Conway, 1994; Forgas, 1995; Petty, Schumann, Richman, & Strathman, 1993). However, the reliance on feelings is not always a low-involvement heuristic. Certain high-involvement decisions, such as who to marry or which house to buy, often seem based on affect (e.g., P. R. Darke, Chattopadhyay, & Ashworth, 2006). Sometimes, integral affective responses are considered to be very relevant for the judgment or decision to be made, even if the judgment or decision is highly involving (Pham, 1998).

Several factors have been found to influence the perceived relevance of affective responses in judgments and decisions. Affective responses to the target are perceived to be more relevant (hence, are relied upon more) under the following conditions: (a) when the consumer has experiential motives (e.g., evaluating a book as a potential beach read), as opposed to instrumental motives (e.g., evaluating a tax manual as potential help for a tax return) (Pham, 1998); (b) when the judgment or decision is inherently affective, e.g., evaluating one's satisfaction (Clore, Schwarz, & Conway, 1994; Wyer, Clore, & Isbell, 1999); (c) when the consumer makes the decision for himself or herself as opposed to someone else (Raghunathan & Pham, 1999); (d) when the consumer is promotion-focused (an inclination to use approach strategies in goal pursuit) as opposed to prevention-focused (an inclination to use avoidance strategies in goal pursuit) (Pham & Avnet, 2004); and (d) when the consumer generally trusts his or her feelings (Avnet & Pham, 2005). Overall, it appears that consumers are much more flexible in their reliance on feelings than previously thought (Pham, 2004).

#### *Emerging Research on Anticipatory and Anticipated Integral Affect*

As demonstrated by Pham's (1998) research on the use of the "how-do-I-feel-about-it?" heuristics in consumer decision making, consumers often make decisions based on feelings that

they experience *anticipatorily* while holding a mental representation of the target in their minds (see also Gilbert, Gill, & Wilson, 2002 for conceptually related results ). These anticipatory feelings function as valuation proxies for the anticipated consequences of alternative courses of actions (Pham, 2004).

Although the two notions are often confused, the notion of *anticipatory* feelings should be differentiated from the notion of *anticipated* or *expected* affect. Anticipatory feelings refer to actual feeling experiences that arise during the decision process in the course of evaluating a target object (Bechara, Damasio, Tranel, & Damasio, 1997; Pham, 1998). Although anticipatory feelings may be subtle, they are genuine feelings with a distinct emotional quality (see Pham, 1993, Experiment 3). In contrast, anticipated or expected affect refers to *predictions* about potential affective consequences of the decision (see Loewenstein & Lerner, 2003). For example, in order to make a choice between two houses, a consumer may try to predict how happy she and her family would be in each house. This type of affect, sometimes called “predicted utility” by decision theorists (Kahneman & Snell, 1990), is central to the standard economic theory of choice, where people are posited to make choices based on the predicted hedonic consequences of the various options. These predictions appear to be strong determinants of risky choice in gambling tasks (Mellers, Schwartz, Ho, & Ritov, 1997; Mellers, Schwartz, & Ritov, 1999). As shall be discussed later in the section on Affect and Motivation, expected affect also plays an important role in affect regulation where options and behaviors are chosen specifically in terms of their affect-changing or affect-maintaining consequences. However, these predictions are affective *beliefs* (i.e., cognitions), not genuine visceral feelings. Although anticipatory feelings and affective beliefs (expected affect) will naturally be correlated when the former informs the latter, there can be substantial dissociation between the two (Raghunathan, Pham, & Corfman,

2006; Robinson & Clore, 2002). For example, whereas genuine feelings of anxiety tend to push decision makers toward low-risk/low-reward options and genuine feelings of sadness tend to push decision makers toward high-risk/high-reward options, affective beliefs about anxiety or sadness do not have the same influences (Pham & Raghunathan, 2006). As Pham (2004) recently pointed out, the distinction between genuine anticipatory feelings and mere affective beliefs has important methodological implications. Certain methodologies such as survey questionnaires about future behavior (commonly used in attitude research) and hypothetical scenarios (commonly used in decision research) may tap into people's affective beliefs (and the intuitive theories that guide these beliefs) rather than genuine integral feelings.

An important type of anticipatory feeling is the fear response. Although such responses were examined many years ago in connection with fear appeals in persuasion (Dollard & Miller, 1950; see Eagly & Chaiken, 1993), they remain important in understanding the reluctance of people to depart from the status quo and to take action when pathways to successful outcomes are uncertain and risky. Leventhal (1970) argued that threat-related cues instigated both a problem-solving process ("danger control") and a process that focused on threat avoidance ("fear control"). To the extent the latter dominates, people may minimize or rationalize the threat and fail to take effective action. This parallel-response model influenced the development of protection motivation theory (Rogers, 1975) and the health-belief model (Janz & Becker, 1984) in which perceived vulnerability and response efficacy are key elements of coping behavior. Consistent with the affect-as-information perspective (Schwarz & Clore, 1996), a growing body of evidence suggests that subjective estimates of risks are largely based on anticipatory feelings elicited by the threat—a proposition known as the "risk-as-feelings" hypothesis (Loewenstein, Weber, Hsee, & Welch, 2001).



## Incidental Affect in Judgment and Decision Making

Although integral affect appears to play a major role in consumers' judgments and decisions, social and consumer psychologists have generally focused instead on incidental affect, especially mood states.

### *Congruency Effects of Mood and other Forms of Incidental Affect*

Numerous studies have shown that mood states and other forms of incidental affect generally have assimilative (i.e., affect-congruent) influences on evaluations, decisions, and behaviors. Objects are typically evaluated more favorably when the evaluator is in a good mood than when the evaluator is in a bad mood (for reviews, see Forgas, 1995; Gardner, 1985), and more generally when the objects are evaluated in the context of pleasant stimuli than when they are evaluated in the context of unpleasant stimuli. In fact, some of the earliest demonstrations of this phenomenon appeared in marketing. In a pioneering study, Axelrod (1963) observed that, after viewing a depressing television documentary, consumers evaluated a variety of products more negatively than they did before they saw the documentary. These shifts in evaluation were found to be directly related to changes in participants' moods. In another early study, Dommermuth and Millars (1967) found that consumers, who one week earlier had watched a pleasant movie after tasting a soft drink, evaluated the drink more favorably than consumers who had watched an unpleasant movie. Still, the most widely-cited demonstration of mood-congruency effects is the one published more than 10 years later by Isen, Shalke, Clark, and Karp (1978), who observed that people who were put in a good mood through a small gift were

more willing to participate in a survey and evaluated products more favorably than control subjects who did not receive a gift. In a debated study, Gorn (1982) also observed that people who had seen a pen advertised while pleasant music was playing in the background were more likely to choose this pen than people who had seen the same pen advertised with unpleasant music playing in the background. Similar congruency effects of incidental affect have been observed on a variety of other evaluative and behavioral responses, including judgments of life satisfaction (e.g., Schwarz & Clore, 1983), evaluations of brand extensions (Barone, 2005; Barone, Miniard, & Romeo, 2000; Yeung & Wyer, 2005), evaluations of political candidates (Isbell & Wyer, 1999), judgments of perceived risks (Johnson & Tversky, 1983), and decisions about future consumption episodes (e.g., Gilbert, Gill, & Wilson, 2002; Pham, 1998).

Much of the early evidence about this phenomenon was reviewed 20 years ago by Gardner (1985). Two main types of developments have emerged since. Substantive-oriented investigations have focused how various aspects of the marketplace can trigger incidental affect that influences evaluations in a congruent fashion. A number of studies have shown that incidental affect elicited by the media context of an ad (TV program or magazine) generally has a congruent influence on consumers' evaluations of the ad but less influence on their evaluations of the advertised brand (e.g., Gardner & Wilhelm, 1987; Goldberg & Gorn, 1987; Mathur & Chattopadhyay, 1991; Murry & Dacin, 1996; Yi, 1990); but see Kamins, Marks, & Skinner, 1991 for different findings). Gift wrapping can also enhance the recipient's evaluation of the gift by elevating the recipient's mood (Howard, 1992). Even the mere action of browsing a series of attractive options may elevate a consumer's mood and result in assimilative effects on subsequent evaluations (Raghunathan & Irwin, 2001). Incidental affect can "transfer" to the target object very rapidly. Morales and Fitzsimons (forthcoming) recently found that a mere

physical contact between a new, factory-sealed pack of sanitary napkins (a product most consumers find disgusting) and another factory-sealed product is sufficient to decrease consumers' intention to try the latter product even though there is no chance of real contamination by the former. An important question is whether this type of spontaneous incidental affect transfer is limited to disgust—as Morales and Fitzsimons (forthcoming) propose—or whether it applies to other types of incidental affect as well (e.g., pride, anger, joy).

More theoretically-oriented investigations have focused on clarifying the process (or processes) that underlie the phenomenon and identifying its boundary conditions. The best-known explanation for the congruency effects of incidental affective states attributes the phenomenon to a differential accessibility of valenced materials in memory under positive versus negative affective states (Isen, Shalke, Clark, & Karp, 1978). Consistent with other research on the effects and representation of mood states in memory (Bower, 1981), Isen and her colleagues (1978) proposed that positive moods enhance target evaluations by making positive thoughts about the target object more accessible in memory. Consistent with this explanation, they found that participants who were put in a good mood through false success feedback had better memory for pleasant words studied earlier than did participants who were put in a bad mood through false failure feedback. Interestingly, however, there was no difference between the two groups in their memory for unpleasant words, suggesting that the proposed explanation may not equally account for negative mood congruency effects.

Building on the idea that affect is often seen as having information value—an idea known as the “affect-as-information” hypothesis, Schwarz and Clore (1983) proposed a different explanation. They argued that positive and negative affective states have congruent effects on evaluations because, in the course of evaluating objects, people are often inclined to inspect how

they feel about these objects—a process known as the “how-do-I-feel-about-it?” heuristic (Schwarz & Clore, 1988);(see also Pham, 1998). When relying on this heuristic, people may not always realize that the feelings they experience while evaluating an object may have been affected by preexisting affective states, resulting in assimilation effects. Consistent with this interpretation, Schwarz and Clore (1983) found that respondents, who were in a good mood as a result of being interviewed on a sunny day, reported higher levels of life satisfaction than respondents who were in a bad mood as a result of being interviewed on a rainy day. Importantly, this mood congruency effect disappeared when respondents were made aware of the actual source of their affective state (i.e., the weather). This contingency—known as the *representativeness* principle (Pham, 1998; Strack, 1992)—supports the interpretation that incidental feelings influence evaluations only to the extent that they are perceived to provide information about the target. In a related study in a consumer context (Gorn, Goldberg, & Basu, 1993), respondents were asked to evaluate a pair of speakers through which music was being played. Incidental affect was manipulated by varying the music being played to be either pleasant or unpleasant. Awareness of the actual source of the feelings was manipulated by asking respondent to rate the music either before they evaluated the speakers (high awareness) or after they had evaluated the speakers (low awareness). As predicted, respondents in the low awareness condition evaluated the speakers more favorably when the music was pleasant than when it was unpleasant—a classic affect congruency effect. In contrast, respondents in the high awareness condition evaluated the speakers equally whether the music was pleasant or unpleasant—consistent with the idea that the congruency effect was driven by the perceived informativeness of the music-induced feelings.

According to the integrative “affect-infusion” model (Forgas, 1995), the two accounts—differential memory accessibility and mood-as-information—are not inconsistent; instead, they operate under different conditions. The differential memory accessibility account is more likely when the person engages in extensive substantive processing such as full and open search in memory, which presumes a certain level of involvement. The mood-as-information account is more likely when the person engages in heuristic processing, which is more common under conditions of low involvement. Consistent with this proposition, it has been found that positive moods have two separate effects in persuasion (Batra & Stayman, 1990; Petty, Schumann, Richman, & Strathman, 1993). Under conditions favoring low elaboration, positive moods have direct assimilative effects on attitudes—a finding consistent with a mood-as-information process. Under conditions favoring high elaboration, the assimilative effects of positive moods on attitudes appear to be mediated by the valence of target-related thoughts during message exposure—a finding consistent with a differential memory accessibility explanation.

Within the mood-as-information account, there is still uncertainty as to the exact locus of the process. In conventional interpretations of the process, feelings are assumed to enter judgments during the formal evaluation stage (Schwarz & Clore, 1988, , 1996). However, recent findings suggest that the informative influence of incidental feelings may take place earlier in the process, during an initial appraisal of the object (Yeung & Wyer, 2004).

#### *Moderators of Congruency Effects of Incidental Affective States*

Factors that increase the reliance to integral feelings in evaluations generally also increase the influence of incidental affect on evaluations. Incidental moods are generally found to have stronger assimilative influences on evaluations when motivation to process information

is low (e.g., Miniard, Bhatla, Lord, Dickson, & Unnava, 1991; Petty, Schumann, Richman, & Strathman, 1993) and when processing resources are constrained such as under distraction (e.g., Albarracin & Wyer, 2001) or under time pressure (Siemer & Reizenzein, 1998). However, recent studies suggest that higher levels of motivation and ability to process information do not necessarily result in a monotonic decrease of the influence of incidental mood on evaluations. The relationship may instead be curvilinear, with stronger influence of incidental mood under moderate levels of motivation and ability (Albarracin & Kumkale, 2003). This is because when motivation and ability to process information are very high, people are likely to recognize that their feelings are incidental and therefore irrelevant for the judgment at hand. Incidental feelings would therefore be discounted. However, when people's motivation and ability to process information is very low, they may fail to even notice their incidental feelings. Incidental feelings would therefore not have any influence. There is also consistent evidence that incidental affective states have stronger affect-congruent influences on evaluations when other bases of evaluation are ambiguous (e.g., Bakamitsos, 2006; Gorn, Pham, & Sin, 2001; e.g., Isen & Shalcker, 1982; Miniard, Bhatla, & Sirdeshmukh, 1992), or when people lack expertise with the target domain (Ottati & Isbell, 1996; Srull, 1987).

The affect-as-information hypothesis implies two additional moderators. Consistent with the principle of representativeness mentioned earlier, incidental affective states tend to be more influential when their actual source is not salient (Gorn, Goldberg, & Basu, 1993; Raghunathan, Pham, & Corfman, 2006; Schwarz & Clore, 1983; Siemer & Reizenzein, 1998). This is because, when the actual source of the affective state is salient, people recognize that the affective state is unrelated to (i.e., not representative of) the target and therefore noninformative. Further evidence of a representativeness interpretation of this contingency comes from the finding that, *even when*

*their actual source is salient*, incidental affective states may still influence objectively unrelated judgments and decisions provided that there is a superficial domain similarity between the judgment or decision and the salient origin of the affective state (Raghunathan, Pham, & Corfman, 2006). Inferences of representativeness, we know, are very sensitive to surface similarity (Gilovich, 1981).

Also consistent with the logic of affect-as-information is the findings that, even when people do not recognize that their feelings are truly incidental—that is, even when they assume that their feelings are representative—they do not seem to use them unless they perceive their feelings to be a relevant basis for judgment—a contingency known as the *relevance* principle (Pham, 1998). For example, people are more influenced by their mood when making decisions guided by experiential motives, such as assessing a movie for an evening out, than when making decisions guided by instrumental motives, e.g., assessing the same movie as material for a school project (Pham, 1998). As a result, they are typically more influenced by their moods in decision involving hedonic products than in decisions involving utilitarian products (Adaval, 2001; Yeung & Wyer, 2004). Mood states have also been found to have greater influence on global judgments of well-being than on more specific judgments such as satisfaction with one's work or housing (Schwarz, Strack, Kommer, & Wagner, 1987). In addition, incidental affective states have been found to be more influential when people make decisions for themselves as opposed to for someone else (Raghunathan & Pham, 1999). Avnet and Pham (2004) recently suggested and found evidence that the reliance on feelings in judgments and decisions may involve a meta-cognitive stage in which people assess whether they *should* use their feelings in a given judgment or decision. This meta-cognitive assessment appears to require significant cognitive resources; when resources are insufficient, incidental and integral feelings influence judgments

and decisions more indiscriminately. The dual-process, meta-cognitive model proposed by Avnet and Pham (2004) appears to account for a wide variety of findings about the moderators of incidental and integral affect in judgments and decisions.

According to Forgas's (1995) affect-infusion model, incidental affective states have greater assimilative influences on evaluations when the person engages in constructive processing. Evaluations based on nonconstructive processes, such as the retrieval of prior attitudes, are less amenable to affect infusion. For example, Fedorikhin and Cole (2004) found that respondents exposed to a mood-inducing video *prior* to being exposed to a commercial were more influenced by their mood in their evaluation of the advertised product than were respondents exposed to the mood-inducing video *after* viewing the same commercial and forming an initial evaluation of the product. This is presumably because respondents in the mood-before condition had to form their product evaluations "from scratch," which required constructive processing, whereas respondents in the mood-after condition could simply retrieve their previously-formed initial evaluations. More generally, Srull (1987) showed, in a very compelling series of studies, that mood congruent evaluation effects generally require that the incidental mood be experienced at the same time the evaluation is constructed.

### *Beyond Simple Valence Congruency*

Recent findings suggest that incidental mood states do not always influence evaluations in a mood-congruent fashion (i.e., higher evaluations under positive moods than under negative moods). Sometimes, incidental mood states *interact* with the target object to produce evaluations that are *configural* rather than mood-congruent. Martin, Aben, Sedikides, and Green (1997) observed that, when asked to evaluate a story that was meant to be happy, participants in a happy



mood reported more favorable evaluations than participants in a sad mood. However, when asked to evaluate a story that was meant to be sad, participants in a sad mood reported more favorable evaluations than participants in a happy mood. This finding suggests that people do not literally interpret the valence of their feelings as meaning “goodness” versus “badness.” Instead, they interpret the valence of their feelings in light of salient goals and judgment criteria (Pham, 2004). If the criterion is “Is this a good happy story?”, feelings of happiness will mean “Yes” and feelings of sadness will mean “No.” On the other hand, if the criterion is “Is this a good sad story?”, feelings of happiness will mean “No” and feelings of sadness will mean “Yes.” Similar configural effects were obtained by Kamins, Marks, and Skinner (1991) who observed that a happy commercial was evaluated more favorably and elicited stronger purchase intentions when presented after a happy TV program than when presented after a sad TV program. In contrast, a sad commercial was evaluated more favorably when presented after a sad program than when presented after a happy program. Somewhat related to the idea of configurality, some findings suggest that mood states increase the weight attached to information that is evaluatively consistent with the mood in product evaluations (Adaval, 2001). According to Adaval (2001), when there is a match between the consumer’s affective state and the valence of a piece of information, this information “feels right” and is therefore relied upon with greater confidence.

A growing body of research suggests that incidental affective states also influence target evaluations when the valence of the affective state is held constant. Two main types of findings have been uncovered in this regard. The first set of findings pertain to the effects of incidental emotional arousal. The second set of findings pertain to the differential influence of qualitatively distinct emotional states.

A large number of studies show that, holding valence constant, the arousal component of incidental affective states tends to polarize the evaluation of objects. Evaluations of target objects are usually more extreme under incidental states of high arousal than under incidental states of low arousal (Dutton & Aron, 1974; Foster, Witcher, Campbell, & Green, 1998; Gorn, Pham, & Sin, 2001; Mattes & Cantor, 1982; White, Fishbein, & Rutsein, 1981; Zillmann, 1971). For example, individuals aroused by contextual factors such as a roller-coaster ride or crossing a high suspension bridge have been found to be more attracted to good-looking individuals of the opposite sex and less attracted to individuals of the same sex (Dienstbier, 1979; Dutton & Aron, 1974; White, Fishbein, & Rutsein, 1981). Similarly, Gorn, Pham, and Sin (2001) observed that consumers who had recently listened to an arousing piece of music (in a supposedly unrelated study) reported more polarized evaluations of an advertisement than consumers who had listened to a less arousing piece of music. Compared to consumers in the low arousal conditions, consumers in the high arousal condition reported more favorable ad evaluations when the ad's affective tone was positive and more unfavorable evaluations when the ad's affective tone was negative. Therefore, incidental states of arousal seems to amplify people's inherent affective and evaluative responses to a target.

Three main explanations have been offered for this phenomenon. According to the cognitive-complexity hypothesis (Paulhus & Lim, 1994), under high arousal, people's representations of target objects become simpler. As a result, the evaluative dimension becomes relatively more salient, causing more polarized judgments. This explanation is consistent with the finding that high arousal induces a selective reliance on information perceived to be more diagnostic in judgment (Pham, 1996). A second explanation is that states of high arousal encourage dominant responses in judgment and behavior (Zajonc, 1965). Because evaluative

responses tend to be dominant, high arousal induces polarization (e.g., J. B. Allen, Kenrick, Linder, & McCall, 1989). A third explanation, consistent with the affect-as-information hypothesis, is that individuals misattribute their incidental arousal as indicating the strength of their integral affective response to the target, which again results in more polarized evaluations (Pham, 2004). Overall, it seems that all three explanations are viable and may be differentially operative in different situations. For instance, Gorn, Pham, and Sin (2001) suggest that the cognitive-complexity may be more valid under conditions of very strong arousal, whereas the misattribution explanation may be more applicable under conditions of milder arousal. This is because strong arousal states are known to narrow people's focus of attention (Easterbrook, 1959) but are unlikely to be misattributed, whereas milder arousal states may not narrow people's attention but are more likely to be misattributed.

More recent demonstrations of the importance of studying incidental affective states beyond their valence come from the growing body research on the differential effects of distinct emotional states (Lerner & Keltner, 2000, , 2001; Lerner, Small, & Loewenstein, 2004; Raghunathan & Pham, 1999; Raghunathan, Pham, & Corfman, 2006; Tiedens & Linton, 2001). In one of the earliest demonstrations, Raghunathan and Pham (1999) found that, in choices between high-risk/high-reward and low-risk/low-reward options, sad individuals consistently favor the former, whereas anxious individuals consistently favor the latter. This is presumably because, even though their states are incidental, sad individuals tend to infer that they have lost something of value (a typical cause of sadness), which activates a goal of reward acquisition that shifts preferences toward high-reward options. In contrast, anxious individuals tend to infer that the situation is uncertain and beyond control (typical causes of anxiety), which activates a goal of risk avoidance that shifts preferences toward low-risk options. Similarly, Lerner, Small, and

Loewenstein (2004) found that incidental states of sadness amplify the endowment effect—the tendency to overvalue one’s possessions—whereas incidental states of disgust attenuate this effect. This is presumably because sadness, even if incidental, triggers an impulse to hold on to sources of rewards, whereas disgust triggers an impulse to expulse sources of discomfort. Tiedens and Linton (2001) also observed that respondents made predictions with greater confidence when under states of disgust or happiness than when under states of fear or hopefulness. This is presumably because both disgust and happiness typically arise in situations appraised as certain (e.g., witnessing something repulsive or receiving very good news), whereas fear and hope typically arise in situations appraised as uncertain (e.g., going up for tenure). These findings are generally consistent with an affect-as-information process in which the information conveyed by affective states comes from the typical appraisal content of these affective states (Pham, 2004). Further evidence that these effects are driven by an affect-as-information process comes from the finding that they tend to disappear when the true source of the affective state is made salient (Raghunathan et al. 2006, Experiment 1), unless there is a surface domain resemblance between the source of the incidental affective state and the target decision (Raghunathan et al. 2006, Experiment 2).

### *Effects of Incidental Affect on Judgment and Decision Processes*

In addition to shaping the *content* of consumer’s judgments and decisions, incidental affective states can also influence the *process* through which these judgments and decisions are made. The nature of these influences seems to depend on (a) the intensity of the affective state, (b) the valence of the affective state, and (c) the appraisal content of the emotional state.

Because high arousal is known to impair working memory capacity (S. Darke, 1988a; Humphreys & Revelle, 1984), it is generally believed and often observed that states of high emotional arousal interfere with people's ability to reason and make judgments and decisions. For example, compared to nonanxious participants, anxious participants have been observed to (a) take longer to verify logical inferences (S. Darke, 1988b), (b) scan alternatives in a more haphazard fashion and select options without considering every alternative (Keinan, 1987), (c) commit more errors in analogical problems (Keinan, 1987; Leon & Revelle, 1985), and (d) process persuasion arguments less thoroughly (Sanbonmatsu & Kardes, 1988; but see Pham, 1996 for a different interpretation) It should be noted, however, that most of these findings pertain to the effects of high anxiety. It is therefore not clear whether they generalize to other types of emotional arousal such as intense joy, anger, or pride. It should also be noted that states of intense emotional arousal can benefit judgment processes in at least one respect. Compared to states of lower arousal, states of high emotional arousal seem to increase the relative reliance on diagnostic versus nondiagnostic information in persuasion and judgment in general (Pham, 1996). This explains the finding that incidental states of high anxiety do not decrease message elaboration when the message is related to the source of anxiety (Sengupta & Johar, 2001).

Interestingly, intense emotional states characterized by low arousal also appear to interfere with people's judgment abilities. A number of studies indicate that chronic depression interferes with people's reasoning and ability to engage in effortful processing in judgment (Conway & Giannopoulos, 1993; Hartlage, Alloy, Vazquez, & Dykman, 1993; Silberman, Weingartner, & Post, 1983). Overall, it appears that intense emotional states, regardless of their associated level of arousal, generally interfere with people's reasoning and judgment processes.

One exception, however, relates to the ability to prioritize diagnostic versus nondiagnostic information, which seems to increase under states of high emotional arousal (Pham, 1996).

Milder incidental affective states, such as moods, can also influence people's judgmental processes. Compared to individuals in a neutral mood, individuals in a good mood have been found to (a) categorize objects more broadly (Isen & Daubman, 1984; Isen, Niedenthal, & Cantor, 1992), (b) generate more creative answers in response-generation tasks (Greene & Noice, 1988; Hirt, Melton, McDonald, & Harackiewicz, 1996), (c) perform better in problem-solving tasks that require ingenuity (Greene & Noice, 1988; Isen, Daubman, & Nowicki, 1987), and (d) solve a multi-attribute decision problem more efficiently (Isen & Means, 1983). These and other findings have been interpreted as showing that positive moods have generally beneficial effects on reasoning, problem solving, judgment, and decision making (Isen, 2001).

However, a number of studies suggest that positive moods lead to poorer reasoning performance in a variety of respects. Positive mood individuals are more likely to commit the "fundamental attribution error" of overestimating the degree to which others' behaviors are driven by their personal disposition as opposed to by situational factors (Forgas, 1998). Positive mood participants have also been found to perform more poorly in deductive reasoning tasks (Oaksford, Morris, Grainger, & Williams, 1996) and exhibit more intransitive preferences (Fiedler, 1988). Numerous studies also indicate that positive moods generally decrease the depth with which people process substantive information in persuasion and attitude formation (Batra & Stayman, 1990; Bless, Bohner, Schwarz, & Strack, 1990; Bless, Mackie, & Schwarz, 1992; Mackie & Worth, 1989; Worth & Mackie, 1987). Positive mood individuals seem to rely instead on global knowledge structures and internal cues including scripts (Bless, Schwarz, Clore, Golisano, & Rabe, 1996), stereotypes (Bodenhausen, Kramer, & Süsser, 1994), and judgmental

heuristics such as the ease of retrieval (Ruder & Bless, 2003). Overall, positive moods seem to have mixed effects on people's reasoning and judgment processes. On the one hand, they seem to promote greater flexibility and creativity in problem solving; on the other hand, they seem to promote a more top-down, less data-driven, and less thorough mode of processing. Recent studies by Adaval (2003) suggest that one consequence of this more top-down form of processing is that positive moods polarize the evaluative impact of judgment inputs involving preexisting knowledge structures (e.g., schemata, stereotypes, categories, brands, etc.). Adaval's (2003) studies show that, under positive mood, brand names (and their associated knowledge structures) have greater influence on product evaluations than under negative mood. Specifically, products from popular brands are evaluated more favorably under positive mood than under negative mood, whereas products from unpopular brands are evaluated less favorably under positive mood than under negative mood.

Negative moods, especially those of sad nature, have generally been found to have effects that mirror those described above. Compared to neutral and pleasant moods, sad moods have been found to increase the care with which people process substantive information in persuasion (Bless, Bohner, Schwarz, & Strack, 1990; Sinclair, Mark, & Clore, 1994), decrease the reliance on general knowledge structures such as scripts and stereotypes (Bless, Schwarz, Clore, Golisano, & Rabe, 1996; Bodenhausen, Kramer, & Suesser, 1994), increase the ability to estimate covariation from scatter plot data (Sinclair & Mark, 1995), reduce the susceptibility to halo effects (Sinclair, 1988), reduce fundamental attribution errors (Forgas, 1998), and increase the transitivity of preferences (Fiedler, 1988). Overall, temporary sad moods seem to trigger a more systematic, data-driven, and analytical form of reasoning. One possible explanation, also based on the affect-as-information hypothesis, is that sad moods signal to the individual that the

situation is problematic and therefore requires a more vigilant form of processing, whereas good moods signal that the situation is benign and allows a more nonchalant form of processing (Schwarz, 2002).

It should be noted, however, that not all negative moods trigger a vigilant form of processing. States of anger or disgust seem to *decrease* the depth of processing and increase the reliance on stereotyping and other heuristic cues, apparently because these states trigger a sense of certainty (Bodenhausen, Sheppard, & Kramer, 1994; Tiedens & Linton, 2001).

It should also be noted that negative moods do not always increase task effort and positive moods always decrease it. Martin, Ward, Achee, and Wyer (1993) asked respondents in a positive or negative mood to perform various tasks under one of two sets of instructions. One group was asked to keep working until they were satisfied with their performance. The other group was asked to keep working until they no longer enjoyed the task. When instructed to keep working until they were satisfied with their performance, respondents in a negative mood worked longer than those in a positive mood (a result consistent with the typical finding that negative mood leads to more careful processing compared to positive mood). However, when instructed to keep working until they no longer enjoyed the task, the effect reversed: respondents in a negative mood stopped *sooner* than those in a positive mood. Apparently, when the instruction was to keep working until satisfied with the performance, a negative mood was construed as dissatisfaction with one's effort, producing greater perseverance, whereas a positive mood was construed as satisfaction with one's effort, triggering an early stop. In contrast, when the instruction was to keep working until the task was no longer enjoyed, a negative mood was construed as the task being not fun, producing an early stop, whereas a positive mood was construed as the task being fun, producing perseverance. This interpretation, known as the



“mood-as-input” hypothesis (Martin, Ward, Achee, & Wyer, 1993), illustrates a broader principle about the informative role of feelings in judgments. The same feelings can have very different interpretations depending on the question that people are asking themselves (Pham, 2004). The information value of the feelings lies not so much in the feelings themselves as in the interaction between these feelings and the questions that people are trying to answer when consulting their feelings, which depends on situational demands and more generally on the person’s currently active goals.

### *Effects of Mood States on Risk-Taking*

A number of studies indicate that, compared to neutral moods, positive moods promote risk-taking when the stakes and chances of loss are low but risk-avoidance when the stakes and chances of loss are high (Arkes, Herren, & Isen, 1988; Dunegan, Duchon, & Barton, 1992; Isen & Geva, 1987; Isen, Nygren, & Ashby, 1988; Kahn & Isen, 1993; Nygren, Isen, Taylor, & Dulin, 1996). For example, Arkes, Herren, and Isen (1988) observed that, compared to control participants, participants who received a small gift were willing to pay more for lottery tickets, especially when the prize level and probability of winning were high—indicating greater risk-seeking under positive mood in situations with only upsides. However, participants who received a small gift were also more willing to pay more to insure against a variety of losses, especially when potential losses were high—indicating greater risk-aversion under positive mood in situations characterized by downsides. Kahn and Isen (1993) observed a similar pattern in the effects of positive mood on variety-seeking. They found that, compared to control participants, participants who were in a good mood sampled a greater variety of products such as crackers, soups, and chips, unless the choice set included items expected to taste poorly. Again, positive

mood appeared to promote risk-seeking in benign settings and risk-avoidance in settings involving potential risk. According to Isen and her colleagues, when the decisions entail low risks and stakes, positive mood individuals tend to have more optimistic (mood-congruent) expectations about the outcomes and, therefore, take greater risks compared to neutral mood individuals. However, when the stakes are high and the potential for losses significant, positive mood individuals become risk-averse because they want to maintain their positive affective state, which a loss would disrupt (e.g., Isen, Nygren, & Ashby, 1988; Kahn & Isen, 1993) as will be discussed further in the section on affect regulation.

The effects of negative affective states on risk-taking are not as clear. Several studies indicate that negative emotional states accompanied by strong arousal increase risk-seeking (Fessler, Pillsworth, & Flamson, 2004; Leith & Baumeister, 1996; Mano, 1992, , 1994). For example, Leith and Baumeister (1996) found that angry participants and participants anticipating impending embarrassment were more likely to choose an economically inferior “long-shot” gamble with a low probability of obtaining a larger amount of money and a high complementary probability of enduring some stressful noise, over a superior “safe-bet” gamble with a higher probability of obtaining a smaller amount of money with a low probability of enduring the stressful noise. Sad participants, however, did not exhibit this bias. Fessler, Pillsworth, and Flamson (2004) also found that anger triggered more risk-seeking in gambling, especially among men. Similarly, Mano (1994) found that intense emotional arousal increased people’s willingness to pay for lotteries and decreased their willingness to pay for insurance; that is, increased risk-taking for both potential gains and potential losses.

However, other findings indicate that people’s attitude toward risk under negative affective states is not just a function of the level of arousal associated with the affective state, but

also a function of the appraisal content of the affective state (Lerner & Keltner, 2001; Raghunathan & Pham, 1999). For example, as mentioned previously, in choices between low-risk/low-reward and high-risk/high-reward options, anxious individuals tend to prefer the former, whereas sad individuals tend to prefer the latter (Raghunathan & Pham, 1999; Raghunathan, Pham, & Corfman, 2006). The consistent risk-aversion exhibited by anxious individuals in these studies seems inconsistent with Leith and Baumeister's (1996) proposition that high-arousal emotion lead to risk-seeking. In fact, other studies show that, when the level of arousal is held constant, anxiety *reduces* risk-seeking (Mano, 1992, , 1994). According to Raghunathan and Pham (1999), this is because anxiety, which is typically associated with situations of low control and high uncertainty, activates a goal of risk and uncertainty minimization, whereas sadness, which is typically experienced in response to the loss of a source of reward, activates a goal of reward maximization. Similarly, Lerner and Keltner (2001) observed that, even though fear and anger are both high-arousal negative emotions, fear tends to trigger risk-aversion, whereas anger tends to trigger risk-seeking. This is apparently because fear is typically associated with situations of uncertainty and low control, whereas anger is typically associated with situations of certainty and high control. It has also been found that disgust, another high arousal emotion, decreases risk-seeking in gambling among women (Fessler, Pillsworth, & Flamson, 2004).

In summary, it appears that intense negative emotions do not have a uniformly positive effect on risk-seeking. High emotional arousal seems neither necessary, nor sufficient to explain risk-seeking under negative emotions. The effects of negative emotions on risk-seeking appear to depend not only on the level of arousal associated with the emotional state, but also on complex interactions between the goals activated by the emotional state and the nature of the risks to be taken. This may partly explain why a meta-analysis of published studies relating chronic states of

anger, sadness, and anxiety to risky sexual behavior (Crepaz & Marks, 2001) found virtually no correlation ( $r = .05$ ).<sup>6</sup>

### Task-Related Affect in Judgment and Decision making

The *process* of making judgments or decisions may *itself* induce feelings and emotions. We call this type of affect *task-related affect*. A common task-related affect is the unpleasant feelings that consumer often experience when they have to trade off important attributes whose values are negatively correlated across choice options. Consider a choice between prospective apartments. Apartment A is much roomier, but is located in a bad neighborhood; whereas Apartment B is much smaller, but located in a great neighborhood. It has been found that the aversive emotional experience of having to make trade-offs across important attributes often lead consumers to prefer avoidant options such as choosing the status quo or deferring the choice (Luce, 1998). This avoidant behavior seems to be a deliberate attempt by the consumer to mitigate the unpleasant feelings by eschewing the trade-offs altogether. This avoidant behavior is attenuated under situations of cognitive load, which reduce the aversiveness of the trade-offs by making them less apparent (Drolet & Luce, 2004). Another way in which consumers attempt to deal with the emotional aversiveness of difficult decisions is to resort to simpler, heuristic decision strategies such as processing by attribute-by-attribute (as opposed to alternative-by-alternative) and invoking dominance relations (Luce, 1998; Luce, Bettman, & Payne, 1997). It has also been found that, when trade-offs are emotional, consumers tend to place greater weight on the relative quality of the options, such as the relative safety of two cars, rather than on their

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<sup>6</sup> Another explanation could be that chronic emotional states have lesser effects on risk-taking than momentary states.

relative resource requirements, e.g., the relative price of the cars (Luce, Payne, & Bettman, 1999).

Task-related affect, in the form of stress, can also be induced by giving decision makers some time pressure and the impression of being monitored during the decision (Stone & Kadous, 1997). Unlike the manipulations based on trade-off difficulty mentioned above, this method presents the advantage of holding information about the options constant. Stone and Kadous (1997) found that, under task-related stress, decision makers tend to use a “scanning” strategy of quickly but indiscriminately examining available information, which may increase choice accuracy in easy choice environments but decrease choice accuracy in difficult choice environments.

Another common type of task-related affect in decision making is the unpleasant feeling of having to forego attractive options. In a choice among a Mercedes-Benz S550, a BMW 750i and an Audi A8, for example, choosing the Mercedes-Benz also means forfeiting the BMW and the Audi, which may be emotionally stressful. Dhar and Wertenbroch (2000) found that the emotional discomfort of forgoing an option is greater when the option is primarily hedonic, such as a fun sports car, than when the option is primarily utilitarian, such as a functional minivan. It has also been found that the more consumers deliberate about their choices, the more they become emotionally attached to the options, which leads to decision-related discomfort once one option has been chosen (Carmon, Wertenbroch, & Zeelenberg, 2003).

A particularly important outcome of a task-related affect is the transfer of that affect onto the valuation of the chosen alternative. Just like incidental affective states, task-related affective responses may be misconstrued as reflecting genuine integral affective responses to one of the options—a phenomenon again broadly consistent with the affect-as-information framework

(Schwarz, 1990; see also Pham [2004] for a review). For example, Garbarino and Edell (1997) found that reducing the effort involved in selecting an alternative (i.e., making a task less unpleasant) can increase the price respondents are willing to pay for that alternative. The transfer of task-related affect onto the valuation of alternatives underlies a growing body of research on the “value-from-fit” hypothesis (Higgins, 2000). According to this hypothesis, a fit between the manner in which a decision is made and the current orientation of the decision maker can produce pleasant task-related feelings of “being right,” which can then be (mis)attributed to a chosen object, enhancing its perceived value (Avnet & Higgins, 2003, , 2006; e.g., Higgins, Idson, Freitas, Spiegel, & Molden, 2003). This finding also illustrates the close connection between affect and motivation, discussed next.

## AFFECT AND MOTIVATION

The study of affect and the study of motivation have traditionally been interrelated (Young, 1961). Motivation and emotion share the same Latin root, *movere*, which means “to move.” Affective states are said to stimulate action tendencies (Elster, 1999; Lazarus, 1991), action readiness (Frijda, 1986; Lang, 1995), and goal shifts (Oatley, 1992; Simon, 1967). Some researchers argue that affective states function as part of a superordinate program that directs motivational priorities and goal choice (Cosmides & Tooby, 2000) and motivates individuals to pursue specific goals. The interaction between motivation and affect is bidirectional: (1) affective states set goals; and (2) goal pursuit (achievement, blockage, progress rate, etc.) triggers specific affective reactions (Carver, Lawrence, & Scheier, 1996). Although both

directions of influence are of substantial theoretical interest, in this chapter we focus on the former because a larger number of studies have examined the affect to → motivation direction.

In general, affective motivation relies on affect's informational role. As previously described, Schwarz and Clore's (1983) seminal work represents the cornerstone of the informational tradition associated with experienced affective states. When asked to assess their life satisfaction, many respondents in this study misattributed their weather-induced feelings to the unrelated judgment at hand. Usually overlooked in the literature is the fact that the study also asked individuals to assess their "desire to change." When asked this question on a rainy (versus sunny) day, individuals reported a stronger desire—hence, a stronger motivation—to change. Schwarz and Clore's (1983) findings thus demonstrate not only the informational role of affect, but also its *motivational* consequences.

#### Strength of the Signal, Approach, and Avoidance

When affect deviates from a homeostatic range, this signals that something has altered the actual or anticipated state of the environment, thus increasing the likelihood of unanticipated negative or positive consequences, such as those related to threats or safety. The strength of this signal is a direct function of how much affect deviates from its normal homeostatic range. However, the relation is not symmetric. Cacioppo, Gardner, and Burnsten (1999) suggest that when the affective signal is at zero (in terms of motivational input), there is a weakly positive approach tendency (in terms of motivational output)—a phenomenon, the authors call the "positivity offset." In other words, at very low levels of affective activation, the motivation to approach is stronger than the motivation to avoid. Cacioppo, Gardner, and Burnsten (1999) further suggest that the evolutionary function of the positivity offset is to increase the organism's

tendency to approach novel objects and stimuli in neutral environments. In the absence of such a motivation to explore, organisms would learn little about novel or neutral-appearing environments and their potential reward value.

However, there is also a well documented negativity bias in human behavior (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001), which cannot be fully explained by the greater diagnosticity (e.g., reduced frequency and greater information value) of negative information (Skowronski & Carlston, 1989). Ito, Cacioppo, and Lang (1998) analyzed affective responses to hundreds of slides from the International Affective Picture System (Lang, Bradley, & Cuthbert, 1997). In one analysis, subjective ratings of positivity of the mostly pleasant slides, and subjective ratings of negativity of the mostly unpleasant slides, were modeled as a function of the level of arousal elicited by each slide. Not surprisingly, both relationships were positive: pleasant slides were rated more positively as they arousal levels increased; and unpleasant slides were rated more negatively as they arousal levels increased. More importantly, ratings of positivity had a *higher intercept* than ratings of negativity. When arousal was very low, pleasant slides were rated more positively than unpleasant slides were rated negatively—a finding consistent with a positivity offset. On the other hand, the slope of the negativity ratings was steeper than that of the positivity ratings—a finding consistent with the negativity bias. Therefore, at low levels of activation, positive stimuli have a greater impact on affective responses (and presumably behavior) than negative stimuli do. However, at higher levels of activation, negative stimuli have greater impact than positive stimuli do. (See Crites, Fabrigar, & Petty, 1994; Taylor, 1991; See Wojciszke, Brycz, & Borkenau, 1993 for supportive findings.) A recent study by Dijksterhuis and Aarts (2003) provides additional support for these propositions. Respondents were exposed subliminally to both positive and negative words and asked to guess whether the



words were positive or negative. Performance was better than chance for negative words, but not for positive words. This finding suggests a lower threshold for unconscious negative affect to become accessible. According to Cacioppo, Gardner, and Bernsten (1999), the positivity offset fosters useful exploratory behavior. However, because exploration can also have aversive consequences, and it is more difficult to reverse adverse consequences, natural selection may have favored a capacity to respond more strongly to, and withdraw from, proximate negative stimuli. This duality of function may have contributed to distinguishable approach and avoidance mechanisms mobilizing the individual toward immediate action.

A similar analysis by Lang and his colleagues (Lang, Bradley, & Cuthbert, 1990, , 1992) supports the distinction between an aversive/defensive/withdrawal system and an appetitive/approach system, each with distinct patterns of neural activity. The greater the appetitive input, the stronger the activation of positivity and approach forces; the greater the aversive input, the stronger the activation of negativity and avoidance forces. Cacioppo & Berntson's (1994) evaluative space formulation allows for a co-activation of both systems, resulting in either directional action (approach or avoidance), indifference (low activation of both positivity and negativity), or ambivalence (high activation of both positivity and negativity).

However, physical behavior is facilitated by integrating the output of these dual processes and resolving any co-activation of opposing forces to express the dominant tendency and inhibit the weaker tendency. This is evident in postural support reactions, balance, and dynamic motor adjustments and implies a neurological substrate for central bivariate control (i.e., coactivity) of flexors and extensors despite the fact that outcomes are physically constrained into bipolar molar responses. Co-activation is also consistent with findings indicating that central mechanisms for reward and aversion can be independently manipulated, since this implies a fundamental

dissociability of related brain systems. Whether this separability can help explain why initiatives designed to produce positive affective responses, such as to minorities and organ donation, do not necessarily overcome negative biases is an important research issue (see Sarason et al., 1993; see Schofield, 1991). One important implication of co-activation is that an increase in the intensity of either positive or negative valence can transform inaction into action, perhaps leading a person to take risks that had restrained behavior, as when fear of unsafe sex or cigarette addiction are overcome by either added momentary attractiveness or the perception of reduced likelihood or severity of consequences (Bolton, Cohen, & Bloom, 2006).

Broadly speaking, then, affective signals direct attention to both environmental and personal factors (particular current actions) that seem likely to alter consequences. This also fosters, or mitigates, energy and resource expenditure for both mental and behavioral activity. This “effort to perform” response is one of the accounts used to explain why people may devote more time or higher levels of thought in scrutinizing the information available (versus relying on heuristics) when experiencing a negative (versus positive) affective state (Schwarz, 2002).

While goal achievement and harm avoidance are particularly responsive to affective signals, hedonism (the emphasis on feeling good) can be a default goal. For example, psychological theories have traditionally stressed the dynamic tension between task success and accuracy motivations, on the one hand, and ego-bolstering and feeling good on the other (e.g., Lazarus & Folkman, 1984). Of particular interest in research on affect is the notion that a currently negative affective state can motivate individuals to pursue a short-term hedonistic objective, whereas a positive affective state can motivate individuals to protect the current given state. People are not necessarily spending more effort in order to perform well, but are selectively choosing the stimuli that will regulate their current affective states.

## Affect Regulation

In the last two decades, affect regulation has received special attention in the literature (Forgas, Johnson, & Ciarrochi, 1998; Gross, 1998; R. J. Larsen, 2000; Zillmann, 1988a, , 1988b). For our purposes, affect regulation corresponds to people's spontaneous (conscious or unconscious) attempt to intensify, attenuate, or maintain a given affective state, usually in the short-term. It incorporates related constructs, such as mood regulation (M. W. Erber & Erber, 2001; R. J. Larsen, 2000), negative state relief (Cialdini, Darby, & Vincent, 1973), mood management (Forgas, Johnson, & Ciarrochi, 1998; Wegener & Petty, 1994; Zillmann, 1988b), mood maintenance (Clark & Isen, 1982; Isen, 1984), emotion regulation (Gross, 1998), and coping (Lazarus, 1991). Although biological drives such as hunger and thirst (Buck, 1999) could also be incorporated within the affect regulation umbrella (Gross, 1998), they are beyond our scope of analysis.

As a basic psychological mechanism, Andrade (2005) proposes that affect regulation rests on three principles: dynamic affect, conditional hedonism, and affective signaling (see also Cohen & Andrade, 2004). *Dynamic affect* represents individuals' projected discrepancy between feelings at two points in time, that is, what they feel now and what they could feel in the future as a result of the cognitive or behavioral activity. This gap captures the motivational property of affect in guiding information processing, judgment, and decision making. Coupled with a basic hedonistic assumption, when no contingencies are available in the environment, affect regulation predicts that people in negative affective states will the most likely to engage in cognitive or behavioral activities in anticipation of the mood-lifting consequences of such enterprises, whereas people in a positive mood will be the most likely to avoid thoughts and actions in

anticipation of the mood-threatening consequences associated with them. In short, as a result of a dynamic analysis, people are likely to move toward the goal of a more positive affective state when they feel bad, as well as to protect a current affective state when they feel good. At the core of the dynamic affect principle is the idea that people's intuitive theories about the affective changing properties of the forward-looking cognitions or behaviors are critical determinants of the impact of affect regulation. For affect regulation to guide responses, people must intuitively believe that the forthcoming thoughts and/or actions will regulate a current state upward or downward (e.g., Manucia, Baumann, & Cialdini, 1984; e.g., Tice, Bratslavsky, & Baumeister, 2001).

Although individuals are predisposed to improve a negative affective state and/or protect a current positive affective state, there are circumstances in which internal or environmental contingencies convince them to follow a different route (e.g., R. Erber, Wegner, & Theriault, 1996). *Conditional hedonism*, therefore, implies that both upward and downward affect regulation, and negative and positive mood maintenance, represent potential affect regulation strategies, depending on competing goals available in the environment. If a performance goal overcomes a short-term hedonistic goal, the former may be preferred (e.g., Cohen & Andrade, 2004).

Finally, stronger, more accessible affective signals lead to clearer assessment of the discrepancy between current and expected affective states and the appropriateness of the actual state. As polarized affective states produce stronger signals compared to more neutral feelings, affect regulation should lead to stronger impacts when people experience positive or negative affect versus neutrality (e.g., Cohen & Andrade, 2004; Wegener & Petty, 1994). If one's current affective state is not activated, a discrepancy is less likely to be identified, minimizing the impact

of affect regulation on thoughts and behavior. Not only accessibility, but also diagnosticity should play a role. Consistent with the affect-as-information hypothesis (Schwarz & Clore 1983; Pham 1998), the impact of affect regulation can be corrected if the diagnosticity of the current affective state is called into question. When a sad consumer realizes that he is suddenly buying cookies in a supermarket in an attempt to regulate his/her current negative feelings, misattribution correction may mitigate the impact of affect regulation on impulse buying, unless the cookies seem somewhat related to the cause of sadness (Raghunathan, Pham, & Corfman, 2006). However, at least two other aspects must be considered. First, a normative assessment of the affect-behavior relationship is required. One must believe that the ongoing/forthcoming cognitive or behavioral activity that results from the transient feeling state is *inappropriate* (e.g., “I shouldn’t be buying that much just because I feel sad today”). This may not be always the case. For instance, many consumers report going shopping in a *deliberate* attempt at affect regulation (Babin, Darden, & Griffin, 1994; Mick & Demoss, 1990). Trying to regulate current negative feelings through a shopping experience may sometimes be perceived as an appropriate and effective reaction. In that case, to highlight negative affect as a potential cause for the behavior may intensify rather than mitigate the impact of affect regulation on behavior. Second, the consumer must have the *skills* to stop the ongoing action or avoid the forthcoming action. Behavioral reactions driven by current affective states are sometimes much more difficult to control than one would expect, even when the person consciously knows that his/her behavior is inappropriate (e.g., “I shouldn’t be doing this, but I can’t control myself”; Loewenstein, 1996). The impact of appropriateness and skills on the correction of affect regulation attempts remain an open question in the literature.

*Affect Regulation Effects on Information Processing*

Affective states have been shown to produce changes in attention, recall, and processing style via affect regulation. Most research has so far been conducted in the psychology literature (for a review, see Gross, 1998), although consumer researchers have demonstrated growing interest in the topic (e.g., Keller, Lipkus, & Rimer, 2003; Meloy, 2000).

*Attention.* Standard information processing theory assumes limited cognitive resources and therefore selective processing. Thus, at the perceptual level, decisions have to be made as to what pieces of information one attends to. Incidental (dispositional or situational) and integral affect have both been shown to influence such perceptual decision processes via affect regulation (Krohne, 2003). First, one can simply avoid the threatening stimulus when there is no reason to pay attention to it. For instance, MacLeod and Mathews (1988) observed that states of high anxiety (as assessed one week before a exam) shifts attention toward exam-relevant threat words, suggesting vigilance, whereas, states of low anxiety (as assessed 12 weeks before the exam) shifts attention away from exam-relevant threat words, suggesting avoidance. Second, recent evidence suggests that negative stimuli may not necessarily capture, but also hold, people's attention (Fox, Russo, Bowles, & Dutton, 2001; Putman, Hermans, & van Honk, 2004). Thus, those who display stronger upward affect regulation tendencies should demonstrate faster disengagement skills. Mather and Carstensen (2003) adopted such a rationale to provide further evidence that upward affect regulation skills improve with age. After being presented with pairs of negative and neutral faces, older adults responded faster to a subsequent dot probe that appeared on the opposite side of the negative (versus neutral) face. This attentional bias did not emerge among younger adults. Finally, it has been suggested that affect regulation directs people's attention not only away from negativity, but also toward relieving cues (Derryberry & Tucker, 1994).

*Memory.* Feelings not only influence what individuals encode but also how much they store and retrieve (Blaney, 1986). Initial evidence supported mood congruent recall. However, as data accumulated, the phenomenon has been shown to be more robust on the positive side of the affective spectrum—i.e., people in a positive mood were more likely to recall positive events than those in a negative mood were to recall negative events (Bower & Forgas, 2000). Isen (1984) suggested that affect regulation could explain this asymmetry. Negative feelings can sometimes encourage the recall of positive information because people are naturally motivated to feel better. Considerable evidence supports Isen’s initial proposition (R. Erber & Erber, 1994; McFarland & Buehler, 1997, , 1998; Parrott & Sabini, 1990; Rusting & DeHart, 2000; Sedikides, 1994; Smith & Petty, 1995). However, boundary conditions do exist. The impact of upward affect regulation is weaker among chronically sad individuals. Josephson and colleagues (1996) found that whereas a negative affect manipulation increased mood-incongruent recall among non-dysphoric individuals, the effect dissipated among chronically dysphoric participants. Moreover, further evidence showed that when explicitly asked to recall more positive autobiographical memories, non-dysphoric and dysphoric participants were equally capable of accomplishing the task. However, only non-dysphoric participants felt better afterwards (Joormann & Siemer, 2004). These results suggest that recall of positive memories is reduced among dysphoric individuals, not because of cognitive inability but probably because such memories are not perceived as an affect regulation opportunity within this group. According to the *dynamic affect* assumption described above, if the cognitive or behavioral activity is not perceived as mood-lifting, or mood-threatening, affect regulation will be less likely to influence information processing.

Whereas the impact of mood incongruent recall has been more consistently explored within the negative affect realm, there has been some evidence suggesting that positive affect can also trigger affect regulation and biased recall. Parrott and Sabini (1990) showed in natural (studies 1 and 2) and laboratory (studies 3 and 4) settings that not only did subjects in a negative mood recall more positive events, but that subjects in a positive mood were also more likely to recall negative events. The authors do not make strong claims as to the reason for mood incongruent recall but speculate that people may be engaging in spontaneous, and probably unconscious, downward mood regulation. According to the *conditional hedonism* assumption described above, positive mood attenuation is possible. However, this usually happens when competing goals—including the need for accuracy and objectivity—are made available. In this case, individuals have a reason to give up their short-term happiness in exchange for better task performance and subsequent pleasantness (e.g., Cohen & Andrade, 2004; R. Erber, Wegner, & Theriault, 1996).

Affect regulation motivates people to protect positive affect sometimes at the expense of performance. However, when the task at hand produces harmful effects in the long run, performance becomes a major concern (a stronger competing goal) and positive affect can serve as a psychological buffer to help individuals cope with the negativity in the environment. That is the rationale behind Trope and colleagues' mood-as-resource hypothesis and findings (Raghunathan & Trope, 2002; Trope & Neter, 1994; Trope & Pomerantz, 1998). They showed that when information is highly self-relevant, those in a positive, hence bolstered, mood were more likely to select and/or recall negative information. For example, heavy consumers of caffeine in a positive (versus negative) mood recalled more pieces of negative information, as compared to positive information, about caffeine consumption. However, a positive mood did



not enhance the recall of the negative information for light consumers of caffeine. Although it is not clear whether this effect is mediated solely by motivation (i.e., goal shift from happiness in the short-term to happiness in the long-term) or also by skill (i.e., higher cognitive capacity to deal with information), the mood-as-a-resource hypothesis can, under certain circumstances, account for mood incongruent recall by people experiencing positive affect.

*Processing Style.* Some authors have suggested that the motivational influence of affect may not only represent a stronger or weaker desire to process the information per se, but also corresponds to a deliberate attempt at affect regulation (Ambady & Gray, 2002; Forgas, 1998). People experiencing negative affect may be pursuing more systematic and effortful processing in an attempt to improve their negative affective state (Clark & Isen, 1982; Forgas, 1991a, , 1991b; Sedikides, 1994), whereas those in a good mood may spend less effort in an attempt to protect their current affective state (Clark & Isen, 1982; Isen, 1984). According to the main implication of the *dynamic affect* principle, the impact of affect regulation on the quantity and quality of information processing is highly contingent on the expected affective changes associated with the task (i.e., its mood-lifting or mood-threatening characteristics). For instance, if people's unbiased assessment of the attitude object when in a bad mood represents an effective mood-lifting opportunity (e.g., "I will feel happier if do not rely on stereotypes"), sad people should be less likely to rely on such heuristics. Similarly, if the effort spent processing the information represents a mood-threatening experience (e.g., "If I think too much about it, I will feel bad"), happy people should be more likely to rely on heuristics. Although plausible, one of the major challenges in this line of research is to isolate the impact of the affect regulation motive from other mediating processes, such as affect-as-information and the role of confidence. For instance, when a sad person processes a message more carefully than a happy person, is it due to (1) a

basic inner signal (“Threatening environment, be careful!”), (2) a lower level of confidence about his/her level of accuracy (“I’m not yet ready to make up my mind.”), and/or (3) an affect regulation strategy (“If I accomplish this task accurately, I will feel much better!”)? Moreover, these accounts may overlap, which makes claims about affect regulation effects on information processing even more challenging. For affect regulation to operate and bias thought and behavior, individuals must perceive the usually short-term, mood-lifting or mood-threatening cues associated with the upcoming activity. In the information processing world, people have to recognize that the *effort or performance consequences* will regulate their affective state upwards when they feel bad; whereas it will attenuate their affective state when they feel good. Further research is needed to tackle this issue.

#### *Affect Regulation in Judgment and Decision Making*

The impact of affect regulation on decision making has drawn increasing attention. Consumers often take the affective consequences of decisions (buy versus not buy; shop versus not shop; buy product “A” versus “B”) into account. In the past 25 years, the results converge with the affect regulation principles described above.

*Negative affect and affect regulation.* An overview of different research streams shows that people experiencing negative affect are more willing to make behavioral choices that will lead to more positive feelings. Thus, they will engage in a wide variety of behavior in an attempt to change the current feelings. Documented regulation behaviors include watching comedies (Weaver & Laird, 1995; Zillmann, 1988a, , 1988b), listening to uplifting music (Cohen & Andrade, 2004; Knobloch & Zillmann, 2002), eating (Grunberg & Straub, 1992; Tice, Bratslavsky, & Baumeister, 2001), exercising (Hsiao & Thayer, 1998), acting in an aggressive

fashion toward others (Bushman, Baumeister, & Phillips, 2001), reading uplifting news (R. Erber, Wegner, & Therriault, 1996), purchasing gifts for themselves (Luomala & Laaksonen, 1997; Mick & Demoss, 1990), helping others (Bagozzi & Moore, 1994; Cialdini, Darby, & Vincent, 1973), taking greater risks for greater rewards (Raghunathan & Pham, 1999), buying impulsively (Rook & Gardner, 1993), selling unwanted items (Lerner, Small, & Loewenstein, 2004), choosing the status-quo option (Luce, 1998), or simply procrastinating (Tice, Bratslavsky, & Baumeister, 2001).

Under the affect regulation umbrella, these examples all represent mood-lifting alternatives pursued in an attempt to restore or achieve the desired affective state (i.e., to close the gap between current and ideal affect). At the core of the dynamic affect principle is the implication that affect regulation is contingent on one's intuitive theories about the affective changing properties of the forward-looking cognitions and behavior. Thus, for affect regulation to fully operate, sad people must expect the behavioral activity to improve their current affective state. If that expectation is not present, the effect disappears. Several experiments have intrinsically or extrinsically controlled for the mood-changing properties associated with the behavioral activity. For example, helping is usually perceived as a mood-lifting opportunity because most people have learned the self-satisfying, and therefore uplifting, benefits associated with altruistic acts. This explains why, when experiencing negative affect, teenagers and adults are more willing to help compared to children who have yet to learn these associations (Cialdini & Kenrick, 1976). Food items, such as chocolate, have also been shown to present different mood-lifting expectations. Affect regulation via chocolate has a greater influence on women who are more likely to perceive chocolate as a mood-lifting opportunity (E. B. Andrade, 2005; Grunberg & Straub, 1992). Similarly, sad participants are more willing to snack as long as they

believe the action will regulate their affective states. Chronic tendencies such as general low expectations about affect regulation dampen many such effects (Tice, Bratslavsky, & Baumeister, 2001). Also, when people are led to believe their affective states are going to be temporarily frozen (i.e., the “mood-freezing pill” technique), attempts at upward affect regulation via aggression (Bushman, Baumeister, & Phillips, 2001) or helping (Manucia, Baumann, & Cialdini, 1984) also dissipate. Finally, specific emotions can alter the perceived mood-lifting opportunity of a given behavioral activity. As mentioned previously, anxious people take fewer risks than sad individuals (Raghunathan & Pham, 1999). Since anxiety stems from feelings of uncertainty, a risky choice may not represent an effective mood-lifting opportunity. Also, disgust has been shown to increase people’s willingness to sell (Lerner, Small, & Loewenstein, 2004) probably because they have learned that “getting rid of” something when experiencing disgust will make them feel better.

Attempts at upward affect regulation can also be mitigated by competing goals. The principle of *conditional hedonism* implies that goals other than feeling better may lead individuals to give up a short-term pleasant opportunity (R. Erber, Wegner, & Therriault, 1996) or even to pursue an unpleasant path to achieve a competing goal, to improve performance, for example. Cohen and Andrade (2004) found that when people were expecting a task that required control over impulse buying, participants experiencing either positive or negative affect preferred to listen to mood incongruent songs in an attempt to neutralize stronger affective states prior to the task.

*Positive affect and affect regulation.* There is also evidence suggesting that people experiencing positive affect can, under certain circumstances, be less willing to take risks (Arkes, Herren, & Isen, 1988; Isen & Geva, 1987), to help others (Forest, Clark, Mills, & Isen, 1979;

Isen & Simmonds, 1978), or to seek variety (Kahn & Isen, 1993). Isen and Simmonds (1978) found that when the helping scenario displayed situational cues that threatened participants' current positive feelings, participants were less willing to help compared to a control (neutral affect) condition. Similarly, Kahn and Isen (1993) showed that the increase in variety-seeking behavior for happy subjects disappeared as soon as a product's negative features were included or made salient in the search context. In other words, as mood-threatening cues become salient, happy subjects—who have more to lose—anticipate negative affect, which triggers a strong self-protective regulatory mechanism.

Mood-threatening stimuli may also be more persuasive when the message attempts to convince people of the risks associated with a particular activity. Keller, Lipkus, and Rimer (2003) showed that a loss-framed (versus gain-framed) message was more persuasive when people were experiencing positive affect, *increasing* the perceived risk associated with breast cancer as well as the participant's intentions to get a mammogram. In other words, as the consequences seemed more threatening, the message became more influential. The opposite was true for those experiencing negative affect, where the gain-framed message was more persuasive, probably as a result of its mood-lifting cues.

It has also been suggested that people may be more willing to take actions that will help them to maintain the current affective state. So, people would not only avoid what is bad in order to protect their current positive state but also approach what is good in order to maintain it (Clark & Isen, 1982). However, claims about mood maintenance effects must rule out people's willingness to act as a result of a more positive assessment of the environment (affect-as-information and/or mood congruency effects) rather than a deliberate attempt to “fuel” current positive feelings. Moreover, there is evidence inconsistent with the “mood fueling” proposition.

First, whereas negative affect increases helping among adults but not among children (Cialdini & Kenrick, 1976), positive affect increases helping across both groups (Barden, Garber, Duncan, & Masters, 1981; Rosenhan, Underwood, & Moore, 1974). If children are less likely to perceive helping as a mood-lifting alternative, why would they be more willing to help? Similarly, Manucia, Baumann, and Cialdini (1984) showed that positive and negative mood increased helping. However, after a mood-freezing pill was administered, the effect of mood on helping disappeared in the sad mood condition *only*. Finally, Andrade (2005) showed that positive affect increased intentions toward chocolate tasting even among those who reported not perceiving chocolate as a mood-lifting alternative—in that case, most of the male participants. However, intentions toward tasting the product decreased for those in a bad mood who did not perceive chocolate as mood-lifting.

In short, when it comes to the impact of positive affect on behavior via affect regulation, it is important to make salient two distinguishable propositions. First, there are the *mood protection effects*, in which positive affect makes people more sensitive to mood-threatening cues, and less likely to take risks, help, or seek variety in order to preserve a current state (E. B. Andrade, 2005; Arkes, Herren, & Isen, 1988; Forest, Clark, Mills, & Isen, 1979; Isen & Geva, 1987; Isen & Simmonds, 1978; Kahn & Isen, 1993). Second, there are potentially *mood fueling effects*, in which positive affect makes people more sensitive to mood-lifting cues, and as a result, more likely to act in order to fuel an otherwise decaying positive feeling. However, direct evidence to support the latter proposition is still scant. The “fueling”-like effects have usually been explained by evaluation (affect-as-information and/or mood-congruency) rather than regulation mechanisms (E. B. Andrade, 2005; Manucia, Baumann, & Cialdini, 1984). Future

research should address circumstances in which mood fueling effects are likely, independently of evaluation biases.

Our review suggests that from the more basic (perceptual) to the highest (decision making) cognitive levels, affective states can shape responses. In many circumstances affect regulation seems to represent an important mechanism driving the effects. Changes in the perceived mood-altering consequences of the cognitive or behavioral activity, the quantity and quality of the competing goals, and the strength of the affective signals will influence the impact of affect regulation on attention, retrieval, processing style, judgments, and decision making. However, many issues deserve further exploration. As described above, the role of perceived appropriateness and correction skills are important research avenues. Also, the impact of affect in judgment and decision-making cannot be well understood without placing it in a more multifaceted context. For example, people could be led to discount or heighten the relevance of affect for a decision (in relation to other informational inputs or goals). So, a person with an eating disorder may be led to realize that s/he is eating too much, not because of hunger or even especially good-tasting food, but because of a mood repair need. One could, however, speculate that certain types of advertising for fattening food might engage mood repair needs. In that case, focusing on feelings may foster consumption.

We know relatively little about how affect regulation interacts with the other mechanisms (e.g., affect-as-information/mood congruency) also known to mediate the impact of affect on information processing and decision making. Direct evidence of the interaction of these mechanisms on both sides of the affective spectrum is still scant (E. B. Andrade, 2005; Manucia, Baumann, & Cialdini, 1984). Based on evidence from three largely unrelated research streams (helping, risk-taking, and eating), Andrade and Cohen (2006) showed how a merger of the

*affective evaluation* (affect-as-information and/or mood-congruency) and the *affect regulation* mechanisms can be critical to more complete understanding of the affect-behavior relationship.

## CONCLUSION

In the past 15 years, consumer research as a field has greatly matured in its understanding of the important role of affect in consumer behavior. The field has moved away from its original emphasis on mood states as “just another” source of contextual influence on consumer behavior and ad-induced feelings as “just another” determinant of brand attitudes. The field has moved toward a richer analysis of the very central role that affect—in its different forms: integral, incidental, task-related—plays in consumers’ experiences, decisions, motives, and actions. Yet, while our understanding of the role affect in consumer behavior may be growing rapidly, the subject is barely in its adolescence. As illustrated by this review, so many important questions remained to be answered. For example, an important avenue for future research would be to analyze to what extent emotional experiences have lasting influences on consumer judgment, decision, and behavior—influences that persevere after the feeling state has dissipated. Some preliminary evidence suggests certain cascading mechanisms contribute to such lasting influences (Eduardo B. Andrade & Ariely, 2006). It has also been noted that feelings seems to be interpreted differently depending on the questions that people are asking themselves when inspecting their feelings (Pham, 2004). These questions seem to function as lenses through which feelings are read and understood. Another important research avenue would be to better understand the types of questions that feelings are meant to answer. It is hoped that this chapter will motivate many readers to tackle these and other important research questions so that in another 15 years the field will have further progressed.



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