

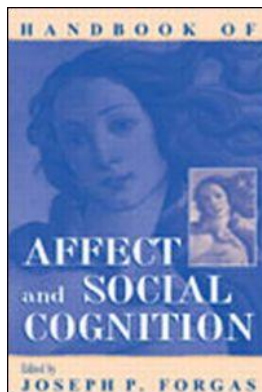
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Joseph P. Forgas

Affect and Cognitive Appraisal Processes

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Affect and Cognitive Appraisal Processes

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What does affect, or emotion, have to do with social cognition? If cognition is concerned with how people think, and social cognition concerns how people think about themselves and other people, what role is there for an analysis of how people *feel*? In the mid-1930s, the answer would have been, “Not much.” In the wake of conflict theories of emotion (e.g., Angier, 1927; Claparède, 1928; Darrow, 1935; Young, 1936), which held emotion to be a disorganized and disorganizing response to difficult circumstances,

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the impact of emotion on cognition was seen primarily as a disruption of an otherwise logical (and preferred) mode of functioning. More recently, however, the dominant scientific view of emotion has shifted radically to one of emotions as highly organized and systematic responses to environmental demands that have evolved to serve adaptive functions (e.g., Arnold, 1960; Ekman, 1984; Izard, 1977; Plutchik, 1980; Scherer, 1984; Tomkins, 1962). Accompanying this philosophical shift, and after a long period of neglect, since the 1980s there has been a virtual explosion of research on affective phenomena, and especially on the interrelations between emotion and cognition. Through this work (much of which is summarized in this volume), we have learned that emotion is of critical importance to how we perceive (e.g., Derryberry & Tucker, 1994; Niedenthal, Setterlund, & Jones, 1994), evaluate (e.g., Keltner, Ellsworth, & Edwards, 1993), reason (e.g., Fiedler, Asbeck, & Nickel, 1991), remember (e.g., Bower, 1981; Forgas & Bower, 1987), and make decisions (e.g., Petty, Cacioppo, & Kasmer, 1988; Schwarz & Clore, 1983). In fact, there is no area of social cognition, or even “pure” cognition more broadly defined, where emotions have been shown not to have a significant impact.

Although recent work on emotions has gone a long way toward establishing the crucial importance of affect in social life, it has virtually ignored the nature of the emotions themselves and how they are generated. Thus, for instance, much of the work examining the effects of mood or emotion on a variety of cognitive processes has limited itself to an examination of pleasant versus unpleasant moods and emotions, with little regard to the nature of the specific emotions contributing to these pleasant or unpleasant states (but see Niedenthal et al., 1994, for an exception). Moreover, virtually all of this work began with individuals experiencing either naturally occurring or experimentally elicited emotions, and little attention has been directed toward the processes underlying the elicitation of these emotions or moods.

It is vital, however, that we develop clear and accurate models concerning both the nature and elicitation of emotion. First, a clearer understanding of the nature of emotional experience—how it is differentiated into a variety of distinct states, as well as the various functions served by these states—should allow us to more accurately predict the likely impact of these specific emotions on any of a variety of cognitive processes. Second, the development of models describing the elicitation of emotion should allow us to predict and understand when, under what conditions, and in whom different emotions are likely to be experienced. Without these types of understanding, the value of the knowledge we have gained regarding

the effects of emotion on cognition is necessarily limited. Not only are our predictions of the effects on cognition of a particular emotion or set of emotions unlikely to be as specific as they might be, but we also have no way of predicting whether or when such emotions will arise.

In this chapter, we illustrate how appraisal theories of emotion step in to fill these gaps. First, we provide a brief overview of appraisal theory's perspective on emotion, as well as the major issues and problems appraisal theory was designed to address. Next, we discuss structural models of appraisal, which have been quite successful in delineating the relations between certain cognitions and the experience of specific emotions. We outline a structural model that we use in our research, based on Smith and Lazarus (1990), and demonstrate how such models go beyond the currently in-vogue two-dimensional models to describe the structure of emotions. Then we describe efforts to develop a process model of appraisal, designed to illustrate the mechanisms by which these cognitions are generated. Such process models are important complements to structural models of appraisal that can, by specifying the particular processes of emotion generation, account for certain phenomena that have been problematic for appraisal theory and emotion theory more generally in the past. Finally, we conclude by considering the ways in which the information about emotion and its antecedents provided by appraisal theory can be used to greatly enhance our study of the impact of emotion on social cognition.

APPRAISAL THEORY: ITS PURPOSE AND MAJOR ASSUMPTIONS

Having adopted early on the perspective that emotional reactions were organized and had evolved to serve largely adaptive functions, Magda Arnold was among the first of the contemporary emotion theorists to recognize the difficulty and importance of addressing the processes by which emotions occur. Arnold (1960) and virtually all subsequent appraisal theorists started with the assumption that different emotions served different adaptational functions that were called for under different sets of circumstances. The puzzle that appraisal theory set out to solve, then, was to describe the mechanism that had evolved to elicit the appropriate emotional reaction when a person was confronted with circumstances in which the function(s) served by that emotion were called for. This puzzle was complicated by the fact that, as Arnold (1960) recognized and subsequent appraisal theorists (e.g., Lazarus & Launier, 1978; Lazarus, 1991; Ortony, Clore, & Collins, 1988; Scherer, 1984; Smith & Lazarus, 1990) emphasized, emotions are

not simple, reflexive responses to a stimulus situation. It is relatively easy to document that the same objective stimulus situation will evoke a broad range of emotions across individuals. Thus, an evaluative exam that might be anxiety producing to a person who doubts his abilities might be a welcome challenge to one who is confident of hers, and yet elicit indifference in one who is not invested in the outcome. Rather than assuming that this heterogeneity of response reflected a disorganized or chaotic system (as did the conflict theorists cited previously), beginning with Arnold (1960), appraisal theorists have assumed that emotional reactions are highly relational, in that they take into account not only the circumstances confronting an individual, but also what those circumstances imply for the individual in light of his or her personal hopes, desires, abilities, and the like. The elicitation mechanism Arnold (1960) proposed to give emotion this relational character was one of “appraisal,” which she defined as an evaluation of the potential harms or benefits presented in any given situation. She then defined emotion as “the felt tendency toward anything intuitively appraised as good (beneficial), or away from anything intuitively appraised as bad (harmful)” (p. 182).

Beyond being relational, it is important to note that appraisal is also *meaning-based* and *evaluative*. The fact that appraisal combines both properties of the stimulus situation and of the person making the appraisal means that it cannot be a simple or reflexive response to the emotion-evoking stimulus. Instead, the appraisal is a reflection of what the stimulus means to the individual. Appraisal is also evaluative, in that it does not reflect a cold analysis of the situation, but rather, as Arnold (1960) emphasized, it is a very personal assessment of whether the situation is good or bad—is it (potentially) beneficial or harmful for me? That this evaluation is meaning based, rather than stimulus based, provides the emotion system with considerable flexibility and adaptational power. Not only will different individuals react to very similar situations with different emotions (as illustrated previously), but also objectively very different situations can elicit the same emotions if they imply the same meaning to the individuals appraising them. In addition, an individual can react very differently to the same situation across time if changes in his or her desires and abilities alter the implications of that situation for his or her well-being.

A further assumption is that appraisal occurs continuously. That is, a number of appraisal theorists have proposed that humans constantly engage in a meaning analysis in which the adaptational significance of their relationship to the environment is appraised, with the goal being to avoid, minimize, or alleviate an appraised actual or potential harm, or to seek, maximize, or maintain an appraised actual or potential benefit (e.g., Smith

& Ellsworth, 1987; Smith & Lazarus, 1990). The reason for proposing that appraisal occurs continuously is that the emotion system is seen as an important motivational system that has evolved to alert the individual when he or she is confronted by adaptationally relevant circumstances. In order to serve this alerting function, the emotion-elicitation mechanism must be constantly “on guard” in order to be able to signal such circumstances when they arise. It is important to note that in making this assumption, appraisal theorists do not assert that the appraisal process need be conscious or deliberate; instead, they have consistently maintained that appraisal can occur automatically and outside of awareness (e.g., Arnold, 1960; Lazarus, 1968; Leventhal & Scherer, 1987; Smith & Lazarus, 1990). The importance and implications of this latter assumption is considered in more detail when we discuss process models of appraisal.

A final major assumption is that the emotion system is highly organized and differentiated. Appraisal theorists recognize that the same basic approach/avoid dichotomy associated with drives and reflexes (Cannon, 1929) and subscribed to by theorists endorsing two-dimensional conceptions of emotion, such as positive and negative affect (Watson & Tellegen, 1985), is fundamental to emotion. However, appraisal theorists describe emotion as being far more differentiated than a simple view of this dichotomy would allow. They argue that there are different major types of harm and benefit, and that these different types have different implications for how one might best contend with them. This is especially true for actual and potential harms, in which, depending on the circumstances, the most adaptive course might be to avoid the harmful situation, but could also range from active attack of the agent causing the harmful circumstances to reprimanding oneself if one caused the circumstances, to accepting and enduring the harmful circumstances if they cannot be avoided or repaired. Building on Arnold’s (1960) definition of emotion mentioned previously, contemporary appraisal theorists tend to conceptualize different emotions as different modes of action readiness (Frijda, 1986), each of which is a response to a particular type of adaptationally relevant situation, and each of which physically and motivationally prepares and pushes the individual to contend with those circumstances in a certain way (e.g., to attack in anger, to avoid or flee in fear, to accept and heal in sadness; cf. Frijda, 1986; Izard, 1977). Within this differentiated system, the fundamental role of appraisal, again, is to call forth the appropriate emotion(s) when the individual is confronted with personally adaptationally relevant circumstances.

Intellectually, the construct of appraisal, as outlined previously, has considerable power and appeal. In the abstract, at least, it has the power

to drive a highly flexible and adaptive emotion system. However, to be of practical theoretical utility, the construct must be fleshed out in at least two ways. First, the *contents* of appraisal need to be described. That is, specific models must be developed to detail the appraisals that are responsible for the elicitation of the different emotions. Second, the cognitive processes underlying these appraisals must also be described. This is especially important because, as alluded to, these processes are not thought to be necessarily conscious or deliberate, as critics of appraisal theory (e.g., Izard, 1993; Zajonc, 1980) have often assumed. Considerable effort has been devoted to the first issue, with the result being the development and testing of several different *structural models* of appraisal, which are the focus of the next section of this chapter. In addition, some appraisal theorists (e.g., Leventhal & Scherer, 1987; Smith & Kirby, 2000) have begun to attempt to develop *process models* of appraisal, and these efforts will be reviewed subsequently.

STRUCTURAL MODELS OF APPRAISAL

If appraisal involves an evaluation of a situation to determine potential harms or benefits as related to individual goals, then the first step in testing appraisal theory is to identify the dimensions along which evaluations are made, then test to see whether the identified dimensions do, in fact, elicit emotions in the predicted ways. Several such models have been proposed (e.g., Roseman, 1984, 1991; Scherer, 1984; Smith & Ellsworth, 1985; Smith & Lazarus, 1990), and a large body of research designed to test these models has been highly supportive of them. In particular, many studies have now asked subjects to report on both their appraisals and a wide array of emotions across a variety of contexts, including diverse retrospectively remembered experiences (Ellsworth & Smith, 1988a,b; Frijda, Kuipers, & ter Schure, 1989; Scherer, 1997; Smith & Ellsworth, 1985), hypothetical vignettes (e.g., Roseman, 1991; Smith & Lazarus, 1993), and even ongoing meaningful experiences (e.g., Griner & Smith, 2000; Kirby & Smith, 1999; Smith & Ellsworth, 1987). In each of these studies, not only have the experiences of different emotions been consistently found to be reliably and systematically associated with different appraisals, but the specific relations observed between the appraisals and the emotions have also largely been in line with the models being investigated.

Although the specific structural appraisal models proposed by various appraisal theorists (e.g., Lazarus, 1991; Ortony et al., 1988; Roseman, 1984; Scherer, 1984; Smith & Ellsworth, 1985; Smith & Lazarus, 1990)

differ in a number of important respects (e.g., in some of the specific appraisal dimensions proposed to differentiate emotional experience; see Scherer, 1988, for an in-depth comparison of several of these models), far more telling is the fact that, overall, they are highly similar in the appraisal dimensions they propose and in the ways that outcomes along these dimensions are hypothesized to differentiate emotional experience. These similarities reflect the fact that the various appraisal theorists all set out to solve a common problem—to identify the set of evaluations that have evolved to link the various modes of action readiness, each serving different adaptational functions, to those circumstances in which those functions were called for—and that they happened to hit on similar solutions to that problem.

Thus, in one form or another, the existing appraisal models generally include some sort of evaluation of how important or relevant the stimulus situation is to the person, whether it is desirable or undesirable, whether and to what degree the person is able to cope with the situation, and who or what caused or is responsible for the situation (and thus toward what or whom one's coping efforts should be directed). Different patterns of outcomes along such dimensions are hypothesized to result in the experience of different emotions. Moreover, the specific pattern of appraisal hypothesized to result in the experience of a given emotion is conceptually closely linked to the functions proposed to be served by that emotion. To illustrate how these models are organized in this way, we draw on the model of Smith & Lazarus (1990), which is the model we use in our own research.

According to this model, situations are evaluated along seven dimensions: motivational relevance, motivational congruence, problem-focused coping potential, emotion-focused coping potential, self-accountability, other accountability, and future expectancy. *Motivational relevance* involves an evaluation of how important the situation is to the person; *motivational* is a key part of the term, however, in that the importance is appraised in a subjective, relational sense, evaluating the relevance of what is happening in the situation to the individual's goals and motivations. *Motivational congruence* is an appraisal of the extent to which the situation is in line with current goals, which again is relational—to the extent to which the circumstances are appraised as being consistent with one's goals, they are appraised as highly congruent or desirable, whereas to the extent to which they are appraised as inconsistent with those goals, they are appraised as incongruent or undesirable. *Problem-focused coping potential* is an assessment of the individual's ability to act on the situation to increase or maintain its desirability. In contrast, *emotion-focused coping potential*

evaluates the ability to psychologically adjust to and deal with the situation should it turn out not to be as desired. *Self-accountability* is an assessment of the degree to which an individual sees her/himself as responsible for the situation, whereas *other accountability* is the extent to which the individual views someone or something else as responsible. Finally, *future expectancy* involves an evaluation of the degree to which, for any reason, the person expects the circumstances to become more or less desirable. According to the model, different patterns of outcomes along these dimensions (having different adaptational implications) result in the experience of different emotions (serving different adaptational functions). Thus, these appraisal dimensions are held to be responsible for the differentiation of emotional experience.

The first two dimensions, motivational relevance and motivational congruence, are relevant to every emotional encounter, and thus are sometimes referred to as dimensions of “primary appraisal” (e.g., Lazarus, 1991; Smith & Lazarus, 1990). By themselves they can distinguish between situations that are irrelevant to well-being (low motivational relevance), and thus are not emotionally evocative, and those that are either beneficial (high motivational relevance and motivational congruence) or stressful (high motivational relevance and motivational incongruence). In certain ways, these two dimensions of primary appraisal correspond closely to the dimensions present in many two-dimensional models of affect (e.g., Russell, 1980; Watson & Tellegen, 1985). Thus, the congruence dimension corresponds roughly to the valence dimension of Russell’s (1980) and other’s models, although one should note, as discussed later, emotions associated with motivational incongruence are not always unpleasant. In addition, the dimension of motivational relevance corresponds closely to the dimension of intensity, or activation, that accompanies valence in most two-dimensional models. Similarly, for those models that emphasize separate dimensions of approach (associated with positive affect) and withdrawal (associated with negative affect; e.g., Watson & Tellegen, 1985), the combined outcomes of these two appraisal dimensions to define one’s circumstances as beneficial or stressful correspond well to those two dimensions of affect, respectively.

However, by including the additional appraisal dimensions concerning accountability and coping potential [often referred to as dimensions of “secondary appraisal” in the terminology of Lazarus (1991) and colleagues], appraisal theory is able to account for considerable further differentiation among emotional states in a way that the two dimensional models are not. For example, whereas anger and fear are essentially indistinguishable in

almost all two-dimensional models, appraisal theory can readily handle them as the highly distinct physiological and motivational states that they are. Particularly in the case of stressful situations (i.e., those appraised as both motivationally relevant and motivationally incongruent), the dimensions of secondary appraisal allow for considerable differentiation of the emotional response to circumstances that can vary greatly in terms of their specific adaptational implications (see also Smith, 1991; Smith & Lazarus, 1990).

Thus, if a stressful situation is appraised as being brought about by someone else (other accountability), anger will result, which motivates the person to act toward the perceived cause to get that agent to stop what he or she is doing, and, perhaps, to fix the situation. If, however, the situation is appraised as being caused by oneself (self-accountability), shame or guilt results, which motivates the person to make amends for the bad situation and prevent the situation from happening again. If the situation is one that the person is unsure he or she can handle (low emotion-focused coping potential), then fear or anxiety results, which motivates the person to be cautious and to get rid of and avoid the potential harm, if at all possible. If the stressful situation is one in which the harm is perceived as unavoidable and irreparable (low problem-focused coping potential), then sadness results, which motivates the person to seek help and adapt to the inevitable harm. Finally, as mentioned previously, the emotional states associated with primary appraisals of stress are not always unpleasant or negative. If one is in a stressful situation in which one does not have something one wants, but perceives that with effort one can achieve one's goals (high coping potential), then a state of challenge results that motivates the person to stay engaged and persevere to achieve his or her goals. Even if problem-focused coping potential is low, hope might result if the person believes that, somehow, things might work out in the end (high future expectancy). In sum, different components of secondary appraisal combine with the same stress-related components of primary appraisal to yield a range of distinct emotional reactions that differ dramatically in their subjective, motivational, and physiological properties (see, for instance, Tomaka, Blascovich, Kelsey, & Leitten, 1993, for evidence of differences in physiological responses associated with appraisals of low versus high coping potential in response to the same stressor).

Structural models, like the one just outlined, by linking specific patterns of appraisal to specific emotions and the adaptational functions served by those emotions, can contribute much to our understanding of emotional experience and the roles that emotions play in social life. However, as noted previously, these structural models have been largely silent with

respect to the cognitive processes responsible for producing the appraisals. We now turn our attention to issues surrounding the nature of these cognitive processes.

TOWARD A PROCESS MODEL OF APPRAISAL

Although the structural appraisal models described previously have been quite successful in describing cognitive antecedents of emotion, taken by themselves they create a potential problem for appraisal theory. By emphasizing that complex relational information is somehow drawn on in appraisal, this work could give the impression that appraisal is ponderous and slow. In fact, appraisal theory has often been criticized on just these grounds. Observers of appraisal theory have tended to interpret the structural descriptions of appraisal as implying that the process of appraisal is deliberate, slow, and verbally mediated. They then correctly note that such a process would fly directly in the face of common observations that emotions can be elicited very quickly, unbidden, often with a minimum of cognitive effort, and sometimes with little or no awareness of the nature of the emotion-eliciting stimulus (e.g., Izard, 1993; Zajonc, 1980). In addition,

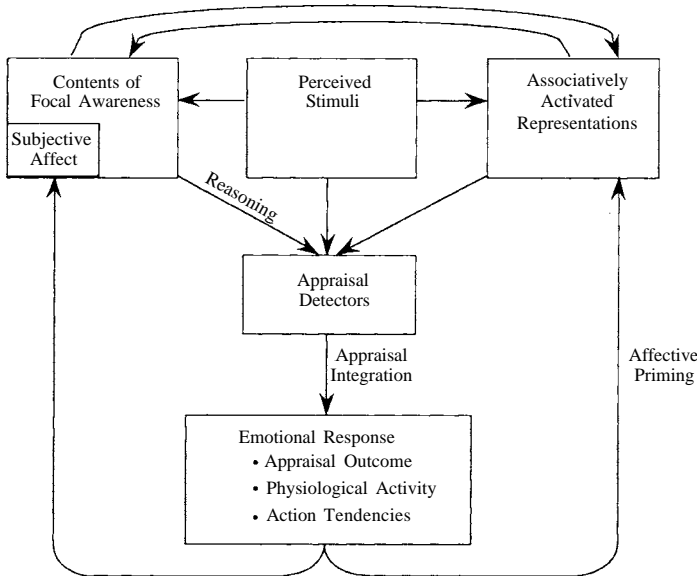


FIG. 4.1. Sketch of a model of the appraisal process.

to the extent that appraisals are thought to be necessarily verbally mediated, it seems very difficult to apply one's appraisal-based theory to either preverbal infants or nonhuman vertebrates, as many appraisal theorists would like to do (e.g., Arnold, 1960; Lazarus, 1991; Scherer, 1984; Smith & Lazarus, 1990).

Appraisal theorists have been aware of these difficulties, and to our knowledge, none has claimed that appraisal need be performed consciously or that the information evaluated in appraisal need be represented verbally. To the contrary, beginning with Magda Arnold (1960), for whom appraisal was "direct, immediate, [and] intuitive" (p. 173), most appraisal theorists have explicitly maintained that appraisal can occur automatically and outside of focal awareness (e.g., Lazarus, 1968; Leventhal & Scherer, 1987; Smith & Lazarus, 1990). However, with few exceptions (e.g. Lazarus, 1991, ch. 4; Leventhal & Scherer, 1987; Robinson, 1998), there has been little effort to back up these claims with an explicit process model of appraisal that would explain how appraisals can occur in this manner. In the absence of such a model, theorists' claims regarding the potential automaticity of appraisal may not have been fully appreciated.

In response to the perceived need for a model of this type, we (Smith, Griner, Kirby, & Scott, 1996; Smith & Kirby, 2000) have begun working on the development of an explicit model of the cognitive processes underlying appraisal. Our goal has been to draw on our current understanding of cognitive processing to articulate a model that can allow appraisal to be information rich, relational, and inferentially based, as described previously, while at the same time allowing appraisals to elicit emotions quickly, automatically, and outside of conscious awareness. Below, we provide a brief sketch of our progress to date in developing such a model (for a more complete description of the model, its functioning, and its rationale, the reader is referred to Smith & Kirby, 2000). A diagram of this model is presented in Fig. 4.1.

Building, in part, on the earlier, seminal efforts of Leventhal (1984) and Leventhal and Scherer (1987), we propose that rather than a single unitary appraisal process, there are multiple appraisal processes that can occur in parallel and that involve distinct cognitive mechanisms. In particular, we highlight two distinct modes of cognitive processing we believe are especially important for understanding appraisal—*associative processing*, which involves priming and activation of memories and can occur quickly and automatically, and *reasoning*, which involves a more controlled and deliberate thinking process that is more flexible than associative processing, but is relatively slow and attention intensive. Our distinction between

these modes of processing is modeled closely after the distinction between schematic processing and conceptual processing discussed by Leventhal and Scherer (1987), and reflects a distinction between different types of cognitive processes that is quite common in the cognitive psychological literature (cf., Sloman, 1996).

A central, distinctive feature of this model is the existence of what we call “appraisal detectors.” These detectors continuously monitor for, and are responsive to, appraisal information from multiple sources. The appraisal information they detect determines the person’s emotional state. It should be noted that these detectors are not actively computing the appraisals, in the sense that they are performing an active evaluation of the person’s relationship to the environment in terms of the various components of appraisal. Instead, they detect the appraisal information generated from different modes of processing (see description below). This information is then combined into an integrated appraisal that initiates processes to generate the various components of the emotional response, including an organized pattern of physiological activity, the action tendency, and the subjective feeling state.

As depicted in the figure, the appraisal detectors receive information from three distinct sources. First, some perceptual stimuli, such as pain sensations, looming objects, and possibly even certain facial expressions (e.g., McHugo & Smith, 1996; Öhman, 1986), may be preset to carry certain appraisal meanings that can be detected directly. For instance, all else being equal, painful sensations are inherently motivationally incongruent or undesirable. This pathway is akin to the perceptual-motor level of processing that Leventhal and Scherer (1987) include in their model. The bulk of the information processed by the appraisal detectors, however, is hypothesized to be generated through either associative processing or reasoning.

As noted previously, associative processing is a fast, automatic, memory-based mode of processing that involves priming and spreading activation (Bargh, 1989; Bower, 1981). Based on perceptual or conceptual similarities with one’s current circumstances, or due to associations with other memories that are already activated, memories of prior experiences can become activated quickly, automatically, in parallel, outside of focal awareness, and using a minimum of attentional resources. As these memories are activated, any appraisal meanings associated with them are also activated, and when these meanings are activated to a sufficient degree, they can be recognized by the appraisal detectors and influence the person’s emotional state.

Several assumptions we make about associative processing should be emphasized. First, we assume that anything that can be represented in

memory, ranging from concrete representations of physical sensations, sounds, smells, tastes, and images up to representations of highly abstract concepts, is subject to this form of processing. That is, cues that can activate appraisal-laden memories include not only concrete stimuli, such as sensations, images, and sounds, but also highly conceptual stimuli, such as abstract ideas or the appraisal meanings themselves. Second, we assume that through principles of priming and spreading activation, full-blown appraisals associated with prior experiences can be activated very quickly and automatically. Thus, highly differentiated emotional reactions can be elicited almost instantaneously. Third, we assume that the activation threshold at which appraisal information becomes available to the appraisal detectors is somewhat less than the threshold at which the appraisal information and its associated memories become accessible to focal awareness and/or working memory. Through this assumption, it becomes possible that adaptationally relevant circumstances in one's environment, of which one is focally unaware, can activate memories and produce an emotional reaction. In this way, the first conscious indication to the person that he or she might be in an adaptationally relevant situation can be the perception of the subjective feeling state associated with the associatively elicited emotional reaction. Finally, we assume that the processes of memory activation, priming, and spreading activation occur continuously and automatically, just as the appraisal detectors monitor continuously for activated appraisal information. Thus, the person can be characterized as continuously appraising his or her circumstances for their implications for well-being, albeit not in a conscious, attention-intensive manner.

In contrast to associative processing, reasoning is a relatively slow, controlled process that is effortful, requires considerable attention and focal awareness, and is largely verbally mediated. Moreover, whereas associative processing is passive in the way that appraisal information is made available to the appraisal detectors (namely, appraisal information that happens to be sufficiently activated becomes available for detection), reasoning is a much more constructive process, whereby the contents of focal awareness are actively operated on and transformed to produce the appraisal meanings. In other words, what we are calling reasoning corresponds closely to the active posing and evaluating of appraisal questions that have sometimes been incorrectly assumed to encompass all of appraisal.

Because reasoning is active and highly resource intensive, it comes at a price. In addition to being relatively slow, we believe that this mode of processing is somewhat limited in the forms of information to which it can

gain access. In contrast to associative processing, which can operate on any form of information stored in memory, we propose that only information that has been semantically encoded in some way is readily accessible to reasoning (Anderson, 1983; Paivio, 1971). That is, sensations, images, sounds, and so on are relatively inaccessible to reasoning unless and until they have been associated with some sort of semantic meaning. By implication, this means that although associative processing has access to all of the information to which the reasoning process has access, the reverse is not true.

Despite these limitations, reasoning is extremely important in that it enables the emotion system to use the full power of our highly developed and abstract thinking processes. Emotion-eliciting situations can be analyzed thoroughly and their meanings reappraised (Lazarus, 1968, 1991). Thus, initial associatively elicited appraisals that might not fully fit the current circumstances can be modified to provide a more appropriate evaluation and emotional response. New connections can be forged between one's present circumstances and potentially related previous experiences. It is even possible that appraisal meanings associated with previous experiences in memory can be reevaluated and changed. In addition, the "cognitive work" represented by reasoning—the results of the interpretation and reinterpretation of the emotion-eliciting situation—can be stored in memory as part of the emotion-eliciting event, and thus become available for subsequent associative processing. This last fact is vital, in that it provides a mechanism by which the emotion system can "learn," and through associative processing, can quickly and automatically produce the highly differentiated, information-rich signals that the motivational functions served by emotion seem to require.

The development of this model is still in its infancy. At a theoretical level, we are in the process of exploring the extent to which the model can account for phenomena, such as repression and the misattribution of arousal, that have traditionally caused problems for appraisal theory when appraisal has been conceptualized as a single, deliberative process (Smith & Kirby, 2000). In addition, we are in the process of generating testable, novel predictions from the model, particularly concerning how the two modes of appraisal, with their rather different properties, interact with one another. At an empirical level, work has just recently begun to demonstrate that the two modes of processing are both relevant to appraisal and emotion (e.g., van Reekum & Scherer, 1998).

APPRAISAL THEORY, AFFECT, AND SOCIAL COGNITION

In his book *The Science of Emotion*, Cornelius (1996) summarizes the cognitive perspective on emotion as follows: “emotions require thought; in order to understand people’s emotions, one must understand how people make judgments” (p. 115). We want to go further—in our view, if you want to understand people’s judgments, you must understand people’s emotions; emotions pervade social cognition.

In this volume, you encounter chapters on the impact of emotion on dissonance, self-concept, stereotyping, health, personality, and stress, among others. As you read through these chapters, we ask you to keep in mind both the process of emotion generation and the structure and function of the resulting emotions. Although current theories and techniques can document that being in an emotional state affects various cognitive processes in certain ways, appraisal theory is the only major theoretical approach to emotion that attempts to describe how the emotions themselves came about. In addition, in their efforts to link the antecedent appraisals in their models to the functions served by various emotions, appraisal theorists have called attention to the differentiated nature and function of emotion as much as any emotion theorists, and to a considerably greater degree than has typically been the case in the study of affect and social cognition.

We believe that both of these contributions of appraisal theory—a detailed description of the antecedents of emotion and a focus on the differential functions served by different emotions—have much to offer to our understanding of the influence of emotion on social cognition. First, knowledge of when, where, and under what conditions an individual is likely to experience this or that emotion is crucial for being able to predict the range of circumstances across which a given effect of emotion on cognition is likely to generalize and/or be especially relevant. Second, an appreciation that different emotions, such as sadness, anger, and fear, serve quite different motivational functions should encourage us to move beyond predicting differential effects of positive versus negative affect on cognitive processes to developing more emotion-specific models of those effects. The fact that in anger, the person is motivated to attack and remove a source of harm from his or her circumstances, whereas in fear, the person is motivated to be cautious and avoid the harm, whereas in sadness the person is motivated to give up and withdraw from the situation (cf. Izard, 1977; Smith & Lazarus, 1990) should have clear and differential implications as to what the person is likely to perceive and remember, as well as how

he or she is likely to reason in those emotional states. Such differential effects can not be captured while considering the influences of “negative affect,” because all three of these quite different emotions are subsumed under this superordinate construct. Drawing on appraisal theory to expand and develop our models of affect and social cognition in both of these ways should greatly enrich our appreciation and understanding of the importance of emotion in social life.

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