

# Appraisal in the Emotion System: Coherence in Strategies for Coping

Ira J. Roseman

Department of Psychology, Rutgers University, USA

## Abstract

Emotions can be understood as a coherent, integrated system of general-purpose coping strategies, guided by appraisal, for responding to situations of crisis and opportunity (when specific-purpose motivational systems may be less effective). This perspective offers functional explanations for the presence of particular emotions in the emotion repertoire, and their elicitation by particular appraisal combinations. Implications of the Emotion System model for debated issues, such as the dimensional vs. discrete nature of appraisals and emotions, are also discussed.

## Keywords

cognitive appraisal, coping behavior, emotional responses, emotions, motivation

Which are the appraisals that contribute to determining *whether* emotions will occur and *which* emotions will occur? Is the universe of appraisals and emotions a haphazard collection, all equally important, thrown together in infinite and arbitrary permutations by accidents of experience? Or is there some underlying organization and coherence?

This article discusses what I will refer to as the Emotion System model. It shows how conceptualizing emotions as an organized system of coping responses, and identifying the specifics of that system, can help us understand why humans have the particular emotions that researchers have identified, why these emotions are aroused and differentiated as specified in appraisal theories, and why they vary as they do. Updating earlier versions of the model (Roseman, 1984, 2001), I consider what can be learned from coherence (a) within emotion syndromes; (b) among emotion syndromes; (c) between appraisal combinations and emotions; and (d) between motivations and emotions. I then discuss implications of this perspective for debates about the dimensional vs. categorical nature of appraisal and emotion, about emotion variability, and about the number of distinct emotions.

## Coherence within Emotion Syndromes: Emotions as Organized Strategies for Coping

Emotions are syndromes composed of several response components (Roseman, 1984; cf. Scherer, 1984): *phenomenological* (thoughts and feelings characteristic of the emotion); *physiological*

(patterns of neural, chemical, and muscular responses); *expressive* (facial, vocal, and/or postural changes); *behavioral* (tendencies or readinesses to take particular actions); and *emotivational* (goals that people want to pursue when experiencing the emotion).

The responses in each emotion syndrome, rather than being a random collection, seem interrelated and integrated into a distinctive (evolution-shaped and typically unconscious) *strategy* for coping with a particular type of situation (Roseman, 2011). For example, disgust may comprise a strategy of moving stimuli that have offensive attributes away from the self.

Each component of an emotion syndrome has a function in implementing the emotion's coping strategy. The emotivational component provides a goal that motivates and directs instrumental action to fit with the emotion's strategy. In disgust, the goal of eliminating contact with something offensive can motivate countless actions (such as cleaning, purifying, or refusing to touch) as means to attain this goal (cf. Rozin, Haidt, & McCauley, 2008). Pursuing the goal of eliminating contact is consistent with the emotion's strategy of moving something away from the self.

The behavioral component adds *specific* default action readi-nesses that evolution or experience suggests can successfully implement the emotion's strategy. In disgust, spitting something out and pushing something away (Wallbott, 1998) are actions that may often have succeeded in moving noxious stimuli away from the self.

The expressive component encompasses communications that prompt *perceivers* to act in ways that fit with an emotion's strategy. The wrinkled nose and gape of the disgust expression

communicate unacceptability, which can lead perceivers to refrain from being in contact with objects or engaging in behaviors identified as disgusting.

The phenomenological component represents important aspects of a situation to consciousness and cues retrieval of other experiences of the emotion and associated information. For example, thoughts in disgust focus attention on the offensive nature of something. Feelings of nausea and repulsion make offensive stimuli salient, prioritize rejection, connect current instances to prior disgust experiences, and increase access to information about responses that have been effective or ineffective in dealing with similar situations.

Finally, the physiological component provides the biological substrate for the responses within an emotion's strategy. Activity in the anterior insula may organize a variety of disgust responses, including the feeling of nausea, and visceromotor activity in the throat and stomach (Wicker et al., 2003).

Similar coherence is seen in other emotions (Roseman, 2001, 2011). Figure 1 shows the strategy and some responses characteristic of each emotion in the current version of the Emotion System model (for relevant data, see, e.g., Frijda, Kuipers, & ter Schure, 1989; Roseman, Wiest, & Swartz, 1994; Scherer & Wallbott, 1994).

### Coherence among Emotion Syndromes: A System of Alternative Strategies

There is also coherence among emotion categories. The emotion strategies shown in the angle brackets of Figure 1 form a systematic set of alternative ways to cope with the general types of opportunities and crises that people face when pursuing motives. The strategies involve either

moving, preparing to move, suspending movement, or ceasing movement; moving toward, moving away, moving something else away, or moving against something; and moving with reference to objects and events, other persons, or the self. Respectively these function to cope with crises and opportunities that are at hand, imminent, evolving, or over; in which the best that one could do is to maximize, minimize, eliminate, or change something; about the world, other persons, or the self. (Roseman, 2011, p. 438)

### Coherence between Appraisal Combinations and Emotions

The function of appraisal in the emotion system is to guide emotional responding. It encodes and processes information about the features of situations that predict which emotion response syndrome is most likely to be adaptive in a given type of situation.<sup>1</sup> In this section, I discuss how the functional requirements of coping with crises and opportunities can explain why each of the appraisals in the Emotion System model (and related appraisals in other theories) differentiates among emotions.

#### *Motive-Consistency vs. -Inconsistency Determines Whether to Get More vs. Less of Stimuli*

The most fundamental determination about coping with any event or situation is whether to seek more vs. less of it. In the Emotion

System model this is determined by an appraisal of whether the event is consistent vs. inconsistent with one's current motives (cf. Frijda, 1986; Scherer, 1984; for empirical evidence on appraisal-emotion relationships, see, e.g., Frijda et al., 1989; Roseman, Antoniou, & Jose, 1996). As shown in Table 1, which summarizes functional bases of appraisal-emotion relationships, this makes good functional sense. When an event or situation fits one's goals and preferences (e.g., hunger, sexual drive, competence motivation) getting more of it is relatively likely to be adaptive, as motivational systems have evolved to seek states and prompt activities beneficial to survival. Moreover, appraising consistency with *current* motives allows the emotion system to respond differentially to the same stimulus depending on *changing* internal needs and external conditions—a huge evolutionary advance over fixed criteria of adaptive value.

#### *Low vs. High Control Potential Determines Accommodating vs. Contending Strategies*

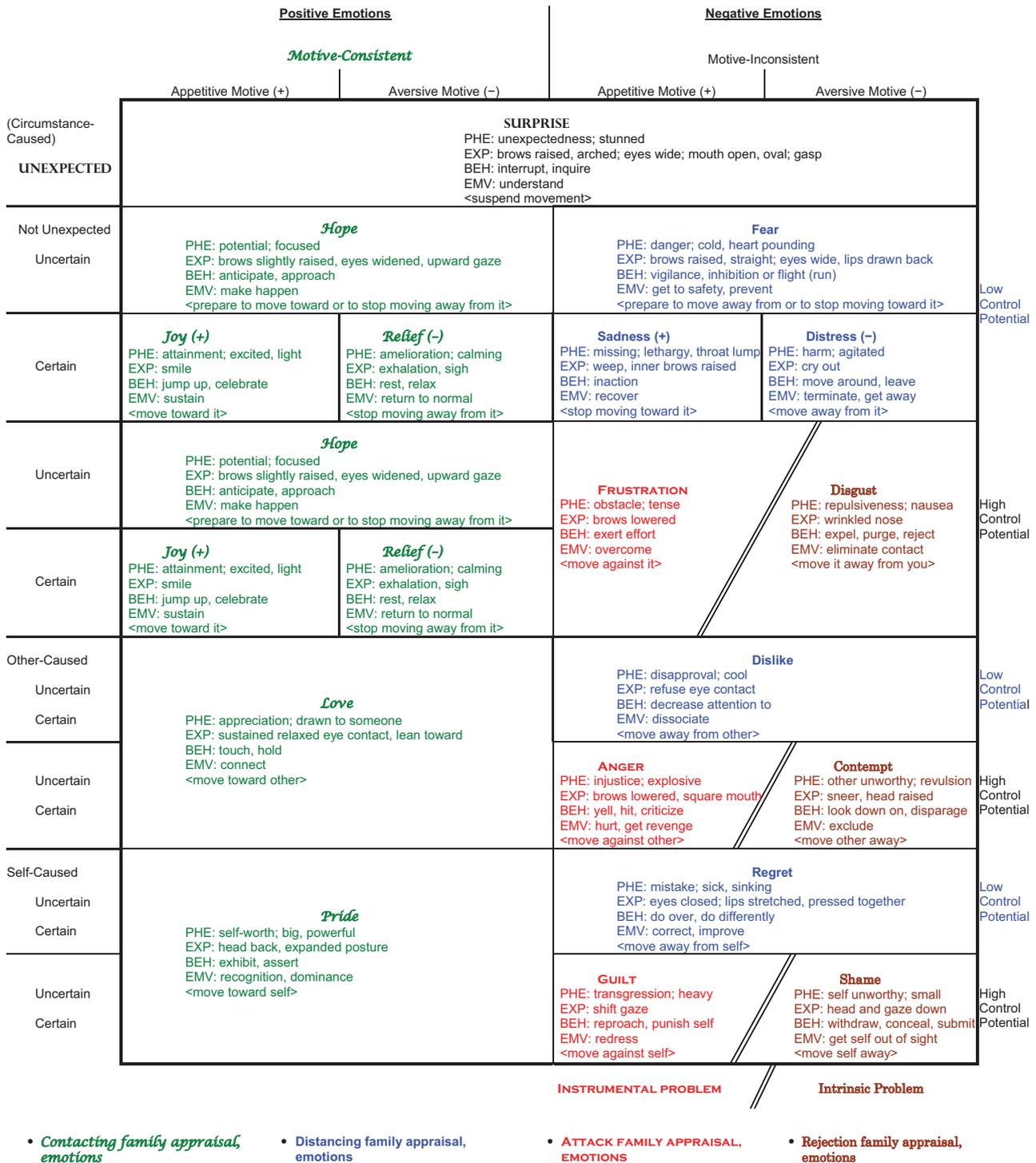
A second crucial coping determination concerns how to get less of motive-inconsistent stimuli. In the Emotion System model, this is governed by an appraisal of whether one's *control potential* is low vs. high (cf. Lazarus, 1991; Scherer, 1984), resulting in emotions that accommodate to stimuli vs. attempt to change them (Arnold, 1960). Functionally, if nothing can be done about a motive-inconsistent situation, attempting to change it would be a waste of energy and resources. But if something can diminish motive-inconsistency, then accommodation would accept a situation that one could have improved.

#### *Instrumental vs. Intrinsic Problem Type Determines Attack vs. Rejection Strategies*

A third coping determination concerns *how* to contend with motive-inconsistent events and situations, when one has the potential to do so. As emotional behavior has evolved, the major alternatives are attacking vs. rejecting: moving against the stimulus vs. moving it away from the self. In the Emotion System model, the appraisal governing these alternatives is instrumental vs. intrinsic *problem type*: whether motive inconsistencies are goal blockages caused by the stimulus or are inherent stimulus attributes. Functionally, if something merely blocks one's goals, attacking may succeed in forcing it to change, while maintaining interaction with it (Fischer & Roseman, 2007); but if it is intrinsically negative, the best one can do may be to move it away (thereby reducing its impact).

#### *Contacting, Distancing, Attack, and Rejection Emotion Families*

The three appraisals just discussed, in different combinations, elicit four types of emotions (see Figure 1): *contacting emotions*, such as joy, that increase contact and interaction with stimuli appraised as motive-consistent; *distancing emotions*, such as sadness, that decrease contact and interaction with stimuli, in response to appraisals of motive-inconsistency and low control potential; *attack emotions*, such as frustration (termed



**Figure 1.** The Emotion System model, showing appraisals and some resulting emotional responses (adapted from Roseman, 2011).  
 Note: Emotion components: PHE = phenomenological; EXP = expressive; BEH = behavioral; EMV = motivational goal. Strategies integrating the response components for each emotion are given in angle brackets. Appraisal combinations eliciting each emotion are found by proceeding outward from an emotion box to its borders around the chart.

“challenge” by Smith & Ellsworth, 1985) that move against stimuli (see Amsel, 1992) in response to motive inconsistency, high control potential, and instrumental problem type; and

rejection emotions, such as disgust, that move stimuli away from the self, in response to motive inconsistency, high control potential, and intrinsic problem type.

**Table 1.** Appraisal guidance of the emotion system: Why these appraisals?\*

Appraisal values	Emotions differentiated	Associated strategies	Functional basis of appraisal-emotion relationship
Not unexpected	Negative emotions / Surprise Positive emotions	Proceed with course of action	If an event is unexpected, one's current assumptions and behavior may be inappropriate; so seek information before proceeding further.
Motive-inconsistent	Negative emotions / Positive emotions	Get less	Motive-consistency flexibly indexes adaptive value regarding internal and external changes. If an event is inconsistent with motives, getting less of it minimizes harm; if consistent with motives, getting more of it maximizes benefits.
Minimize punishment	Distress / Joy Relief / Sadness	Increase or decrease movement away	If minimizing punishment, action is relatively high priority, and the avoidance system is needed; if maximizing reward, action is relatively low priority, and the approach system can be employed.
Uncertain	Hope / Joy Fear / Relief Sadness / Distress	Prepare	If an event is uncertain, it is prudent to prepare but not yet react; if an event is certain to occur, better to begin reacting immediately.
Circumstance- / Other person-caused (or no causal attribution made, or none focused on)	Surprise / Love Hope / Dislike Joy / Anger Relief / Contempt Fear / Shame Sadness Distress Frustration Disgust	Movement in physical space / Movement in interpersonal space	If motive-relevant events are caused by impersonal circumstances, physical actions may be needed to affect them; if caused by other people, interpersonal actions may work better; if caused by self, self-control strategies may work best.
Low control potential	Fear / Frustration Sadness / Disgust Distress / Anger Dislike / Contempt Regret / Shame	Get less by accommodating / Get less by contending	If control potential is low, one probably cannot change things; if control potential is high, may be able to change things (don't have to accept them).
Instrumental problem (unwanted outcome)	Frustration / Disgust Anger / Contempt Guilt / Shame	Contend by attacking (moving against something) / Contend by rejecting (moving something away)	If the source of the problem is not intrinsically negative, one may be able to force it to change; if intrinsically negative, the best one can do is to move it away.

*Note:* \*Revised from Roseman (2001, pp. 78–79), by permission of Oxford University Press, USA.

### *Relating Stimuli to Appetitive vs. Aversive Motives Determines Initiation- vs. Termination-Governing Strategies*

Whereas joy and sadness respectively increase vs. decrease initiation (movement toward stimuli, e.g., through activation and deactivation; Frijda, 1986), distress and relief increase vs. decrease termination (movement away from stimuli; cf. Lazarus, 1991). This difference in strategies is governed by appraising stimuli as related to appetitive (reward-maximizing) vs. aversive (punishment-minimizing) motives (see Figure 1). Having both pairs in the emotion repertoire allows prioritizing emotional responses to aversive events. For example, reducing punishment and distress from tissue damage (and eliciting relief) copes with a relatively immediate threat; whereas seeking reward and joy from sexual behavior, while eventually essential for continuation of the species, is less time urgent.

### *Uncertain vs. Certain Probability Determines Proactive vs. Reactive Strategies*

Fear and hope involve proactive distancing vs. contacting, allowing coping with situations and events remote in time or space. Fear responses (e.g., vigilance, inhibition) *prepare* people to stop moving toward stimuli (passive avoidance) or start moving away from them (active avoidance). Hope (e.g., Snyder, 2002), fear's mirror opposite, prepares people to start moving toward (e.g., awaiting, anticipating) or stop moving away from stimuli. The appraisal determinant of proactive vs. reactive emotions is uncertainty vs. certainty. Functionally, if motive-relevant aspects of events are uncertain, it is prudent to prepare but not yet react. If they are certain, it may be better to begin reacting (e.g., by increasing or decreasing initiation or termination in joy, sadness, distress, or relief).

### *Agency Determines Object/Outcome-Directed vs. Other-Directed vs. Self-Directed Emotions*

The emotion strategies detailed thus far may be generally applicable, suitable for coping with stimuli regardless of their cause. But there are also contacting, distancing, attack, and rejection emotions typically felt toward other people. Love moves one person toward another (or others) in social space, seeking connectedness (e.g., through social interaction and care-giving; Shaver, Schwartz, Kirson, & O'Connor, 1987). Interpersonal dislike moves the self away from others (increasing "social distance"), seeking to dissociate through disidentifying and avoiding interaction (Roseman et al., 1994). Anger moves against other people, seeking revenge, for example via physical or verbal aggression (see Averill, 1982). Contempt moves others away from the self in social space, seeking rejection of its targets by in-group members (e.g., through disparaging; Fischer & Roseman, 2007). These emotivational goals and action tendencies are uniquely suited for dealing with other people (agents having motives that can be satisfied or thwarted, and feelings that can be assuaged or hurt).

"Self-conscious emotions" include contacting, distancing, attack, and rejection emotions felt toward the self. Pride moves one toward the (individual or collective) self, in the sense of bringing one's behavior closer to one's identity, ideals, and self-conception (e.g., through self-display and self-assertion, seeking recognition or dominance; cf. Tracy, Shariff, & Cheng, 2010). Regret moves one away from one's previous behavior, seeking to correct mistakes (Zeelenberg, van Dijk, Manstead, & van der Pligt, 1998), for example by doing something differently (Roseman et al., 1994). In guilt one moves against oneself (e.g., by self-reproach, apology, or reparation; Roseman et al., 1994), incurring psychological, social, or material costs in order to redress some harm. In shame the self is evaluated negatively and moved away (i.e., hidden, withdrawn, or excluded from social interactions; cf. Tangney & Dearing, 2002). These emotivational goals and action tendencies are uniquely suited for dealing with the self: we don't control the evaluation, display, and behavior of objects or other people as we control our own.

The appraisal determining whether emotions are felt toward objects/outcomes vs. other persons vs. the self is an assessment of agency: whether the emotion-eliciting stimulus is caused by impersonal circumstances (or no causal attribution is made) vs. by someone else vs. by the self. Functionally, coping strategies specialized for social influence (e.g., strengthening or breaking interpersonal relationships) are likely to have greatest impact on other people and the events they cause, whereas strategies specialized for self-control (e.g., self-assertion, self-reproach) are likely to have greatest impact on self-determined outcomes.

### *Unexpectedness Elicits a Strategy of Suspending Action*

Unlike other emotions in Figure 1, in which courses of action are undertaken, the coping strategy of surprise involves interrupting action (suspending movement), while seeking to better understand what's happening by obtaining information from the environment or internal processing. Surprise is elicited by an appraisal of unexpectedness (Reisenzein, 2000) because if a stimulus is unexpected, one's assumptions were in some respect mistaken, so better understanding is desirable before proceeding.

### **Coherence among Motivation, Emotion, and Action**

Nearly all appraisal theories include an appraisal similar to motive-consistency (Ellsworth & Scherer, 2003), but few discuss how motives relate to emotions as alternative determinants of action.

### *Motivation vs. Emotion*

Psychologists have alternated between emphasizing motives (e.g., hunger, sex, competence motivation) vs. emotions (e.g., joy, sadness, fear, anger) as providing energy and direction to

behavior. Some theorists have assimilated one to the other, seeing most human action as stemming from either motivation (e.g., Murray, 1938) or emotion (e.g., Plutchik, 1980), or identifying particular emotions (such as sadness) with particular motives (e.g., replacing a lost mate; Keltner & Haidt, 2001).

But this may obscure important differences between motivations and emotions. Why might organisms have *two* systems for energizing and directing behavior? Tomkins (1970) proposed that motives (“drives,” such as hunger) are activated by relatively specific conditions (e.g., food deprivation) and direct behavior toward relatively specific ends (e.g., eating), whereas emotions (“affects”) are more general. Emotions are elicited by appraisals relating events to *any* current motive (e.g., threats to any motive can elicit fear; obstacles to any motive can elicit frustration). Tomkins (1970) also proposed that affects are more powerful than drives (cf. Frijda, 1986, on the “control precedence” of emotional action tendencies).

The Emotion System model of emotions sees these two properties as related. It suggests the emotion system has evolved to pre-empt the specific-purpose pursuit of motives with general-purpose coping strategies when fast action may be needed. Consistent with this view, I have suggested (in Roseman, 2008) that motivated behavior is often more deliberative (though much “deliberation” may occur unconsciously; Dijksterhuis, Bos, Nordgren, & van Baaren, 2006). In contrast, emotional behavior is often more impulsive, involving greater reliance on relatively prespecified patterns of action readiness (e.g., embracing in love, hitting in anger, and appeasing in shame).

### *Emotivational Goals vs. Action Readinesses*

But emotional behavior is not always impulsive. As mentioned previously, in addition to specific action readinesses (e.g., in fear, readiness to freeze or run), emotion syndromes include goals (e.g., getting to safety) that can motivate an infinite variety of instrumental actions (e.g., calling for help, hiding, pleading, threatening) that are generated and selected in light of current conditions.

### *Appraisals Governing Systems of Behavior Control*

The relative influence of nonaffective (e.g., cognitive) processes, motivations, emotivational goals, and emotional action readinesses may be significantly determined by two appraisals. Motivations seem at least partly determined by appraisals of a situation’s *degree of consistency* with specific biological and psychological reference states that function as goals or antigoads (Carver & Scheier, 2012). These are variable set points or ranges, such as standards of adequacy in competence motivation (Harter, 1978) or levels of ghrelin in hunger (Carlson, 2013). Other factors (e.g., motive importance, and probability of motive attainment) being equal, greater distance from goals or greater closeness to antigoads shift control away from nonaffective processes, and produce more intense motivation and more motivated action (e.g., mastery attempts, food-seeking).

In contrast, positive and negative emotions may be governed more by appraisals of *change in consistency* with motives (Frijda, 2007). At all times people confront many static motive-consistent and -inconsistent situations (e.g., being in good or poor health, being loved or unloved) about which they are *not* continually emotional. In contrast, intense emotions are generated by change (e.g., in health, in esteem; Aronson & Linder, 1965). Change in consistency with expectations (i.e., occurrence of an unexpected event) elicits surprise.

Appraised variations in consistency with motives and expectations affect behavior governance because they predict the potential importance of rapid response. The greater the degree of and change in motive consistency that one encounters, the more important quick response may be. Large changes in the extent to which one’s motives are (or may be) fulfilled are thus appraised as crises or opportunities, predicting that there may be insufficient time for more deliberative processes of action selection.

Given little inconsistency with goals (and little consistency with antigoads), nonaffective processes can permit unhurried consideration of numerous behaviors. Greater degrees of goal inconsistency (or antigoad consistency) arouse motivations (e.g., hunger, competence motivation), producing action that is still quite flexible (instrumental actions, such as food-seeking, can be variable, even if consummatory actions, such as eating, are stereotypic), but somewhat constrained by the perceived likelihood of progressing toward motive attainment. As change (and increasing change) is perceived in motive-consistency, emotions such as those in Figure 1 are elicited (and increase in intensity) and emotivational goals become increasingly salient and influential. This reduces flexibility further by constraining goal selection to the general purpose goal of the emotion (such as getting to safety when feeling fear) in place of more time-consuming processing of multiple specific-purpose goals (though the latter may remain operative subordinately). As perceived change and emotion intensity increase even further, behavior may be increasingly constrained toward emotional action readinesses (perhaps via interference with deliberative processing of alternative actions; cf. Easterbrook, 1959), with consideration of fewer actions permitting even faster response (while emotivational goals remain ready to influence behavior, if possible).

## **Implications of Emotion System Theory for Debated Issues**

### *The Dimensional and Discrete Nature of Appraisal and Emotion*

A recurring debate pits discrete against dimensional perspectives on emotions (Roseman, 2011). Although some authors have embraced a dimensional view, this does not seem necessary for appraisal theories (Roseman & Smith, 2001). For example, Arnold (1960) specified appraisal combinations for discrete emotion categories. Lazarus (1991) did too. Smith and Ellsworth (1985) described appraisal theories as “identified with neither the categorical nor the dimensional approach” (p. 817).

The Emotion System model presented in this article shows the value of both perspectives. The dimensional approach captures key relationships among emotions. For example, emotion states cluster first around a dimension of appraisal (motive consistency vs. -inconsistency of stimuli) that produces pleasant vs. unpleasant hedonic quality (valence) as part of determining the most important distinction among emotion strategies (whether to seek more vs. less of stimuli). Arousal, if conceptualized as emotion intensity, influences the extent to which emotions affect behavior (Plutchik, 1980) as well as which behaviors occur when feeling a particular emotion.

But, as already discussed, and shown in Figure 1, emotion syndromes also have internal structure, with multiple responses all contributing to an integrated emotion-specific strategy. The coherence among responses within each emotion “package” (Keltner, Ekman, Gonzaga, & Beer, 2003) and the multiple ways that each emotion strategy differs from the others, can explain why theorists and lay people view emotions as discrete. Even emotions varying along one appraisal dimension (e.g., joy vs. sadness) or emotions in one family (e.g., anger vs. guilt) differ from each other in kind, not just degree (though there may also be simple intensity variants, such as anger and rage, within emotion categories).

The Emotion System model also implies that particular appraisals are continuous *and* categorical. From a coping perspective, it is difficult to simultaneously suspend action (in surprise) and take action (as in other emotions), or move toward something (as in joy) and stop moving toward it (as in sadness). Thus many appraisals may be processed as continuous dimensions, but with categorical boundaries that combine to elicit discrete emotions. For example, people appraise continuous degrees of motive-consistency (which affects motivation and emotion intensity), but there is a category boundary between appraisals of motive-consistency and motive-inconsistency. This is needed to determine whether positive emotions (that seek more of something) or negative emotions (that seek less) should be initiated. However, under some conditions it may be possible for multiple emotions to occur in rapid succession or at the same moment (Larsen & McGraw, 2011), with behavior shifting quickly among, caught between, or simultaneously manifesting multiple emotions.

### *Coherence and Variability across Instances of Particular Emotions*

As discussed in Roseman (2011), there is real variability across instances of particular emotions, due to such factors as (a) the occurrence of multiple emotions (e.g., anger and guilt) in response to the same event; (b) the co-occurrence of emotions with emotion regulation (e.g., suppression of disgust responses toward the habits of intimates); (c) the co-occurrence of emotions with other motives (e.g., need for approval), cognitions (e.g., procedural behavior rules), and situational factors (e.g., obstacles) that can modify emotional and nonemotional responses; (d) variation in emotion intensity; and (e) variability in instrumental actions taken to pursue an motivational goal (e.g., ridiculing vs. shunning to socially exclude a target of contempt) and in emotional action

tendencies themselves, which may be better characterized as readinesses (Frijda, 1986) to take different actions (e.g., freeze or run) depending on situational variables.

But despite this variability, probabilistic relationships still exist between emotions and their characteristic responses, and according to the Emotion System model, functional coherence within emotion response profiles remains (see also Frijda & Parrott, 2011). For example, spitting something out and pushing something away may have few physical properties in common, but both action tendencies serve disgust’s strategy of moving a stimulus away from the self. The Emotion System model predicts that combinations of responses from incompatible emotion strategies are less probable. When disparate combinations do occur, they are often comprehensible as instrumental actions serving motivational goals. For example, one might move toward a repulsive stimulus when feeling disgust, in order to clean and thereby eliminate contact with it.

### *Universal and Culture-Specific Emotion Syndromes*

There is also cultural variability in emotion syndromes, including differences in phenomenology (e.g., low vs. high arousal in positive emotion states; Chentsova-Dutton, Tsai, & Gotlib, 2010), expression (e.g., mouth open in the Western surprise face, but closed and suggestive of a smile in Sanskrit *wonder*; Shweder, Haidt, Horton, & Joseph, 2008), behavior (e.g., individual-self-celebration vs. self-effacement in pride; Mascolo, Fischer, & Li, 2003), and motivational goals (e.g., seeking revenge vs. understanding of harm-doers’ motives, when feeling anger; Boiger & Mesquita, 2012).

At least some of this variability may be accounted for by factors previously enumerated, including emotion regulation (e.g., constraining vengeance in collectivist contexts), variability in instrumental actions (e.g., individual-self-celebration vs. individual-self-effacement as means to attaining group recognition), and co-occurrence of multiple emotions (perhaps surprise with joy in Sanskrit *wonder*). Rather than explaining away variability, the emotion system perspective offers possibilities for understanding it. If the strategy of pride involves moving toward the self (by exhibiting and asserting its valued characteristics), this may be manifest in culturally syntonic individual-self-celebration in individualistic cultures, and individual-self-effacement—for celebration of the collective self—in collectivist contexts.

### *Additional Emotion Strategies and Additional Emotions*

Why does Figure 1 *not* show distinct emotions for all possible combinations of values of the appraisal variables? Viewing emotions as a system of alternative strategies suggests an explanation: Some differentiations are not as important as others, for coping. For example, the strategy of surprise (suspending action and seeking information before proceeding) tends to be adaptive whether an unexpected event is relevant to appetitive or aversive motives, motive-consistent or motive-inconsistent, etcetera. That is why there is one emotion rather than 96 kinds of surprise (corresponding to all combinations of unexpectedness with other appraisal values).

Similar considerations explain why Figure 1 shows different negative emotions, but the same positive emotions, in response to appraisals of low vs. high control potential. Moving toward motive-consistent events is likely to be adaptive whether one has high or low control, because there is little need to control them. In contrast, when dealing with motive-inconsistent events, it may be vital to know whether one can successfully contend with them or must accommodate. In the emotion system, appraisals interact to generate emotions. With the exception of surprise, knowing only one appraisal is insufficient to determine which emotion strategy is likely to be adaptive in a situation.

Whether these and other states warrant being considered distinct emotions is an empirical question. The more response components on which two states differ, the more useful that may be. Having a distinct pan-cultural expression is an important consideration (Ekman, 1992). But if, for example, embarrassment differs from shame only in facial expression (e.g., the presence of a “silly” smile), there is less utility in regarding them as distinct emotions than if they also differ in action tendency. If various types of love (differing perhaps in underlying sexual vs. care-giving vs. attachment motivation) share a common coping strategy of strengthening interpersonal bonds, it might be empirically justified to regard them all as variants of the same emotion (see Shaver et al., 1987). The Emotion System model proposes that differences in coping strategy, which integrate responses across components, are especially important in differentiating emotions.

## Note

- 1 Of course, the emotion system can malfunction (e.g., due to disease) or produce responses that are maladaptive in particular situations. In shaping the emotion system, natural selection requires only overall utility. Dysfunctional responses that reduce a species' fitness can also occur.

## References

- Amsel, A. (1992). *Frustration theory: An analysis of dispositional learning and memory*. New York, NY: Cambridge University Press.
- Arnold, M. B. (1960). *Emotion and personality*. New York, NY: Columbia.
- Aronson, E., & Linder, D. (1965). Gain and loss of esteem as determinants of interpersonal attractiveness. *Journal of Experimental Social Psychology, 1*, 156–171.
- Averill, J. R. (1982). *Anger and aggression: An essay on emotion*. New York, NY: Springer-Verlag.
- Boiger, M., & Mesquita, B. (2012). The construction of emotion in interactions, relationships, and cultures. *Emotion Review, 4*, 221–229.
- Carlson, N. R. (2013). *Physiology of behavior* (11th ed.). Boston, MA: Pearson.
- Carver, C. S., & Scheier, M. F. (2012). Cybernetic control processes and the self-regulation of behavior. In R. M. Ryan (Ed.), *The Oxford handbook of human motivation* (pp. 28–42). New York, NY: Oxford University Press.
- Chentsova-Dutton, Y. E., Tsai, J. L., & Gotlib, I. H. (2010). Further evidence for the cultural norm hypothesis: Positive emotion in depressed and control European American and Asian American women. *Cultural Diversity and Ethnic Minority Psychology, 16*, 284–295.
- Dijksterhuis, A., Bos, M. W., Nordgren, L. F., & van Baaren, R. B. (2006). On making the right choice: The deliberation-without-attention effect. *Science, 311*, 1005–1007.
- Easterbrook, J. A. (1959). The effect of emotion on cue utilization and the organization of behavior. *Psychological Review, 66*, 183–201.
- Ekman, P. (1992). An argument for basic emotions. *Cognition & Emotion, 6*, 169–200.
- Ellsworth, P. C., & Scherer, K. R. (2003). Appraisal processes in emotion. In R. J. Davidson, K. R. Scherer, & H. H. Goldsmith (Eds.), *Handbook of affective sciences* (pp. 572–595). New York, NY: Oxford University Press.
- Fischer, A. H., & Roseman, I. J. (2007). Beat them or ban them: The characteristics and social functions of anger and contempt. *Journal of Personality and Social Psychology, 93*, 103–115.
- Frijda, N. H. (1986). *The emotions*. New York, NY: Cambridge University Press.
- Frijda, N. H. (2007). *The laws of emotion*. Mahwah, NJ: Erlbaum.
- Frijda, N. H., Kuipers, P., & ter Schure, E. (1989). Relations among emotion, appraisal, and emotional action readiness. *Journal of Personality and Social Psychology, 57*, 212–228.
- Frijda, N. H., & Parrott, W. G. (2011). Basic emotions or Ur-emotions? *Emotion Review, 3*, 406–415.
- Harter, S. (1978). Effectance motivation reconsidered: Toward a developmental model. *Human Development, 21*, 34–64.
- Keltner, D., Ekman, P., Gonzaga, G. C., & Beer, J. (2003). Facial expression of emotion. In R. J. Davidson, K. R. Scherer, & H. H. Goldsmith (Eds.), *Handbook of affective sciences* (pp. 415–432). New York, NY: Oxford University Press.
- Keltner, D., & Haidt, J. (2001). Social functions of emotions. In T. J. Mayne & G. A. Bonanno (Eds.), *Emotions: Current issues and future directions* (pp. 192–213). New York, NY: Guilford Press.
- Larsen, J. T., & McGraw, A. P. (2011). Further evidence for mixed emotions. *Journal of Personality and Social Psychology, 100*, 1095–1110.
- Lazarus, R. S. (1991). *Emotion and adaptation*. New York, NY: Oxford University Press.
- Mascolo, M. F., Fischer, K. W., & Li, J. (2003). Dynamic development of component systems of emotions: Pride, shame, and guilt in China and the United States. In R. J. Davidson, K. R. Scherer, & H. H. Goldsmith (Eds.), *Handbook of affective sciences* (pp. 375–408). New York, NY: Oxford University Press.
- Murray, H. (1938). *Explorations in personality*. New York, NY: Oxford University Press.
- Plutchik, R. (1980). A general psychoevolutionary theory of emotion. In R. Plutchik & H. Kellerman (Eds.), *Emotion: Theory, research, and experience, Vol. 1: Theories of emotion* (pp. 3–33). New York, NY: Academic Press.
- Reisenzein, R. (2000). The subjective experience of surprise. In H. Bless & J. P. Forgas (Eds.), *The message within: The role of subjective experience in social cognition and behavior* (pp. 262–279). Philadelphia, PA: Psychology Press.
- Roseman, I. J. (1984). Cognitive determinants of emotions: A structural theory. In P. Shaver (Ed.), *Review of personality and social psychology* (Vol. 5, pp. 11–36). Beverly Hills, CA: SAGE.
- Roseman, I. J. (2001). A model of appraisal in the emotion system: Integrating theory, research, and applications. In K. R. Scherer, A. Schorr, & T. Johnstone (Eds.), *Appraisal processes in emotion: Theory, methods, research* (pp. 68–91). New York, NY: Oxford University Press.
- Roseman, I. J. (2008). Motivations and emotivations: Approach, avoidance, and other tendencies in motivated and emotional behavior. In A. J. Elliot (Ed.), *Handbook of approach and avoidance motivation* (pp. 343–366). New York, NY: Psychology Press.
- Roseman, I. J. (2011). Emotional behaviors, emotivational goals, emotion strategies: Multiple levels of organization integrate variable and consistent responses. *Emotion Review, 3*, 434–443.
- Roseman, I. J., Antoniou, A. A., & Jose, P. E. (1996). Appraisal determinants of emotions: Constructing a more accurate and comprehensive theory. *Cognition & Emotion, 10*, 241–277.
- Roseman, I. J., & Smith, C. A. (2001). Appraisal theory: Overview, assumptions, varieties, controversies. In A. S. K. R. Scherer & T. Johnstone

- (Ed.), *Appraisal processes in emotion: Theory, methods, research* (pp. 3–19). Oxford, UK: Oxford University Press.
- Roseman, I. J., Wiest, C., & Swartz, T. S. (1994). Phenomenology, behaviors, and goals differentiate discrete emotions. *Journal of Personality and Social Psychology, 67*, 206–221.
- Rozin, P., Haidt, J., & McCauley, C. R. (2008). Disgust. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett (Eds.), *Handbook of emotions* (3rd ed., pp. 757–776). New York, NY: Guilford Press.
- Scherer, K. R. (1984). Emotion as a multicomponent process: A model and some cross-cultural data. In P. Shaver (Ed.), *Review of personality and social psychology* (Vol. 5, pp. 37–63). Beverly Hills, CA: SAGE.
- Scherer, K. R., & Wallbott, H. G. (1994). Evidence for universality and cultural variation of differential emotion response patterning. *Journal of Personality and Social Psychology, 66*, 310–328.
- Shaver, P., Schwartz, J., Kirson, D., & O'Connor, C. (1987). Emotion knowledge: Further exploration of a prototype approach. *Journal of Personality and Social Psychology, 52*, 1061–1086.
- Shweder, R. A., Haidt, J., Horton, R., & Joseph, C. (2008). The cultural psychology of the emotions: Ancient and renewed. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett (Eds.), *Handbook of emotions* (3rd ed., pp. 409–427). New York, NY: Guilford Press.
- Smith, C. A., & Ellsworth, P. C. (1985). Patterns of cognitive appraisal in emotion. *Journal of Personality and Social Psychology, 48*, 813–838.
- Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Psychological Inquiry, 13*, 249–275.
- Tangney, J. P., & Dearing, R. L. (2002). *Shame and guilt*. New York, NY: Guilford Press.
- Tomkins, S. S. (1970). Affect as the primary motivational system. In M. B. Arnold (Ed.), *Feelings and emotions: The Loyola Symposium* (pp. 101–110). New York, NY: Academic Press.
- Tracy, J. L., Shariff, A. F., & Cheng, J. T. (2010). A naturalist's view of pride. *Emotion Review, 2*, 163–177.
- Wallbott, H. G. (1998). Bodily expression of emotion. *European Journal of Social Psychology, 28*, 879–896.
- Wicker, B., Keysers, C., Plailly, J., Royet, J.-P., Gallese, V., & Rizzolatti, G. (2003). Both of us disgusted in my insula: The common neural basis of seeing and feeling disgust. *Neuron, 40*, 655–664.
- Zeelenberg, M., van Dijk, W. W., Manstead, A. S. R., & van der Pligt, J. (1998). The experience of regret and disappointment. *Cognition & Emotion, 12*, 221–230.