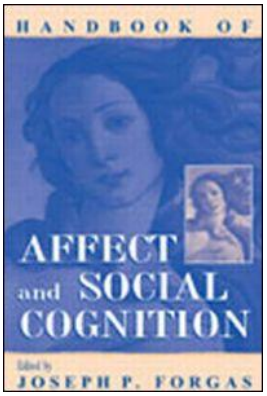

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Affect as Information

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Affect as Information

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Experience is something that can't be replaced….
It's like describing what an orange tastes like.
You 've got to eat an orange.
—Tango instructor Paul Pellicoro, as quoted by Scott, 1999:8

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Philosophers during the enlightenment generally assumed that emotions contaminate reason, and that the proper goal of human intelligence is to elevate us above our animal passions. By contrast, current psychologists are beginning to depart from traditional views by entertaining such concepts as "emotional intelligence" (Salovey & Mayer, 1990). In the literature, affective influences are still often labeled as "affective biases." Increasingly, however, psychologists see affect and cognition as interdependent rather than as at odds. In a paper on the "emotional controls of cognition," Simon (1967) pointed out such interdependence, even as the cognitive revolution was being declared (Neisser, 1967). Since then, we have learned a good deal about how emotion exercises this control. In this chapter, we discuss the influence of mood on judgment, processing, and memory from the perspective of the affect-as-information hypothesis (e.g., Clore, 1992; Clore, Schwarz, & Conway, 1994; Schwarz, 1990; Schwarz, & Clore, 1983, 1988, 1996).

AFFECT AND JUDGMENT

Traditional Views

There have been two approaches to understanding the evaluative judgment process. One emphasizes beliefs about the positive versus negative attributes of the object of judgment, and the other emphasizes the experience of positive versus negative feelings by the person making the judgment. Traditional judgment theory assumed that evaluative judgments reflected evaluative beliefs. Thus, believing a person to be trustworthy, loyal, and friendly should make him or her more likable than believing him or her to be untrustworthy, disloyal, and unfriendly. In the 1960s and 1970s, quantitative models focused on rules describing how these attribute evaluations combine into overall impressions (Anderson, 1971) and attitudes (Fishbein & Ajzen, 1975).

When research on the cognitive effects of emotions and moods began to appear, some investigators looked to this same attribute-oriented approach for an explanation (Bower, Montiero, & Gilligan, 1978; Isen, Shalker, Clark, & Karp, 1978). They assumed that mood-congruent judgments would be based on mood-congruent attributes represented in memory. Activation spreading out from moods was expected to influence the retrieval of similarly valenced beliefs.

About this same time, investigators studying interpersonal attraction generated accounts that focused on affective reactions rather than beliefs

(Clore & Byrne, 1974). They showed that interpersonal attraction depended not only on attributes of the person judged, but also on how the person doing the judging reacted physiologically and emotionally to those attributes (Clore & Gormly, 1974). They maintained that such terms as "love" and "hate" and "like" and "dislike" refer to people's feelings about others rather than to their beliefs about others.

The difference between attribute views and affect views can be seen by considering how judgments of interpersonal attraction are made. Attribute-oriented approaches assume that one averages stored evaluations of individual beliefs about another person's attributes. Thus, to form a judgment about a woman named Beatrice, for example, one would reason that, "I must be attracted to Beatrice because I believe her to be friendly, courteous, and kind, and I know that these are likable attributes." This statement sounds odd, as if it might be made by an android in a science fiction film; real people are likely to be attracted to Beatrice because they find themselves enjoying her company not than because they know her to have positive attributes. Similarly, the affect-as-information view holds that they would like her when positive feelings in her presence are experienced as liking. Of course, they might also characterize her as friendly, courteous, and kind, and these attributions might be an insightful analysis of what makes her enjoyable. However, we would argue that if someone is attracted to Beatrice, the proximal cause of the liking is how she makes them feel. Thus, contrary to traditional accounts by judgment and decision theorists, we suggest an affect-as-information approach, which holds that people often make judgments by asking themselves (implicitly), "How do I feel about it?" (Schwarz & Clore, 1988).

The Affect-as-Information View

The affect-as-information view is more of an approach than a theory, an approach that a number of investigators have found compatible and to which many have made contributions and refinements. This plurality of inputs has ensured that the approach is a robust one that accounts for a variety of phenomena. In addition, just as multiple cooks generate variations on the same dish, there are variations on this basic explanatory approach (Martin & Clore, in press). However, there are also some common assumptions or principles underlying the general idea (Clore et al., in press; Wyer, Clore, & Isbell, 1999). We use some of these principles to organize our discussion.

The Experience Principle: The Cognitive Consequences of Affective States are Mediated by the Subjective Experience of Affect. Psychologists often reason that because humans and animals have a common emotion circuitry, any effects of emotion must be primitive and reflexive. A less popular starting point is the converse idea that subjective experiences mediate emotional influences and that such experiences are not uniquely human. In that context, results reported by Panksepp (1998) are especially intriguing. He discovered that the intensity of fear determines whether rabbits freeze or flee in response to threat. In addition, making high-frequency recordings of vocalizations in rats, he discovered that they laugh when tickled, an experience that they also greatly prefer to other forms of handling. In any case, our starting point is that one of the distinctive aspects of emotions is that they are felt, and that the experience of such feelings has important information-processing consequences.

Evidence comes from research on individual differences in emotional experience (Gohm & Clore, 2000). For example, in a study of mood and risk judgments (Gasper & Clore, 2000a), participants were divided according to their responses on the Attention to Emotion scale (Salovey, Mayer, Goldman, Turvey, & Palfai, 1994). Mood influenced risk judgments among individuals who said that they usually attended to their feelings, but mood was not related to risk judgments among those who said they did not attend to their feelings. These results suggest that attention to feelings mediate's mood effects on judgment. Also consistent is the fact that when individuals scoring low in attention were given instructions to attend to their feelings, they also began showing mood effects. We assume that affective feelings have such cognitive consequences because of the information they convey, as indicated in the Information Principle.

The Information Principle: Emotional Feelings Provide Conscious Information from Unconscious Appraisals of Situations. In information-processing theories, feelings are often pictured only as output arrows. Rarely are they also discussed as inputs or causal factors in subsequent processing. However, if emotions are reactions to the apparent significance of situations, as indicated in appraisal theories (e.g., Ortony, Clore, & Collins, 1988), it is reasonable to assume that emotional feelings represent that significance (Clore et al., 1994). Just as facial expressions of emotion convey emotional appraisals publicly (Ekman, 1982), we believe that emotional feelings convey such information privately. The affect-as-information approach assumes that emotional feelings serve as affective feedback that guides judgment, decision making, and information processing. Evidence consistent with this

idea comes from studies of brain-damaged patients (Damasio, 1994) that suggest that the ability to detect and use such affective information may be necessary to pursue any goal-directed activity successfully.

It is important to note that the information to which we refer is experiential rather than conceptual information. For example, positive affect may be experienced as liking or success, as opposed to activating concepts about liking or success. However, by itself, the affect is simply an experiential form of goodness or badness. Its information value depends on the object to which this experience of goodness or badness is attributed. This process is the subject of the Attribution Principle.

The Attribution Principle: The Informativeness of Affect and Its Cognitive Consequences Depend on How the Experience of Affect is Attributed. The role of affect in judgment and decision making has long been obscured by the simple fact that feelings and beliefs generally move together. To determine whether feelings themselves play a role, it was necessary to vary affective experience independently of evaluative beliefs. To induce affective feelings in the laboratory, in one experiment Schwarz and Clore (1983) randomly assigned participants to write a description of either a happy or a sad event from their recent past. In a second experiment, they conducted a telephone survey on the first warm and sunny day of spring when people were naturally in positive moods, or on subsequent cold and rainy spring days when they felt less positively. In both cases, they found that ratings of life satisfaction were influenced by the momentary moods of respondents. They made higher ratings in happy moods than in sad moods.

However, feelings do not always affect judgment. Their influence depends on their being attributed to the object of judgment. When a cause other than the object of judgment was made salient, the mood effects disappeared. In the first experiment described above (Schwarz & Clore, 1983), the soundproof nature of a room in which participants worked (an incorrect cause) was made salient as a possible cause for their feelings, and in the second study, sunny or rainy weather (the correct cause) was made salient. In neither case did the attribution manipulation change how participants felt. Instead, it changed the apparent meaning or significance of the feelings, and hence their effects.

Such mood and attribution effects have frequently been replicated (e.g., Keltner, Locke, & Audrain, 1993; Schwarz, Servay, & Kumpf, 1985; Siemer & Reisenzein, 1994), but one experiment on the effects of trait as well as state affect yielded a surprising result (Gasper & Clore, 1998). Consistent

with the usual finding, negative moods (state affect) produced heightened judgments of risk, and a manipulation that made salient an irrelevant cause resulted in the usual attribution effect (i.e., in elimination of most effects). However, the attribution effect occurred only for individuals who were low in trait anxiety. Individuals who were high in trait anxiety resisted the implication that their feelings were not relevant and showed no reduction in risk estimates in attribution conditions. The results suggest that individuals with chronically elevated affect may have difficulty discriminating when their feelings are and are not relevant.

Before leaving this topic, it might be of use to note that the value of such experiments is not as demonstrations that people make errors; rather, the purpose of misattribution experiments is to unconfound the roles of feelings and concepts in judgment. Two conclusions follow from them. First, that feelings do influence judgment independently of concepts; and second, that these influences are mediated by implicit attributions about their source. Such attributions provide an object that gives affective feelings their information value and, in some cases, their misinformation value. In real life, of course, most affective cues are not misattributed, because they are closely tied to current cognitive content, as indicated in the Immediacy Principle.

The Immediacy Principle: Affective Feelings Tend to Be Experienced as Reactions to Current Mental Content. The emotional system presumably evolved as an alarm system to facilitate coping with valuable opportunities and dangerous threats. To guide immediate action, the feelings must reflect current perceptual and cognitive content. One may regret the past, of course, but only by thinking about it in the present.

In addition to occasional emotions, minimal affective cues are available almost constantly in the form of feedback about progress toward minor subgoals, such as comprehending the instructions on a package, finding a number in the telephone book, having one's running shoe come untied, missing a stop light, and so on. We live in a stream of affective and other sensory feedback, the meaning of which is usually crystal clear. However, one can also be in a mood or have emotional feelings that result from background ideation of which one is only dimly aware. Without any fixed information value, these reactions are subject to misattribution. In that regard, the affective feelings caused by mood and the affective meaning caused by subliminally presented stimuli may both obey the same rules, as suggested by the Episodic Constraint Principle.

The Episodic Constraint Principle: Primed Concepts and Affective Feelings Should Have Similar Effects When the Obscurity of Their Sources Leaves Their Potential Meanings Similarly Unconstrained. We focus on the role of consciously accessible feelings, but some investigators focus on the unconscious priming of evaluative concepts (e.g., Bargh, 1997; Murphy & Zajonc, 1993). For example, Winkielman, Zajonc, and Schwarz (1997) presented happy or angry faces subliminally and masked them with Chinese ideographs (neutral stimuli). Participants did not report seeing the faces or feeling anything, but they did evaluate the ideographs more positively after happy than after angry faces. Such effects are no different that ordinary cognitive priming except that the visual mask interferes with awareness of the briefly exposed stimulus. However, it does not interfere with activation of the meaning of the prime, which is therefore cognitively accessible without any episodic constraints (Clore & Ketelaar, 1997; Clore & Ortony, 2000).

There is a fascinating parallel between the influences of such unconscious priming and the influences of mood (Clore & Parrott, 1991). Primed concepts and affective feelings should have similar effects when lack of awareness of their sources leaves their potential meanings similarly unconstrained. The resulting feelings and concepts are experienced as spontaneous personal reactions to whatever is in focus at the time. When the meaning of feelings or primed concepts is constrained by the salience of a specific source (through attribution manipulations or obvious priming), a reversal of the usual effects occurs.

The difference between the influence of affect that is and is not constrained by knowledge of its source is evident in experiments in which participants describe happy or sad events in ways that either do or do not induce a mood (e.g., Strack, Schwarz, & Gschneidinger, 1985). Hot descriptions of the events produce mood-congruent judgments, but cold cognitive descriptions produce the opposite, because the positivity of the event serves only as a point of comparison for subsequent judgments. Similarly, in studies of cognitive priming, conscious awareness of the priming produces the opposite of subtle or nonconscious priming (Lombardi, Higgins, & Bargh (1987).

We argue that the critical element in both mood studies and unconscious priming studies is the lack of constraint on the potential meanings of the subjective experiences of affect and ideas. For example, evaluative meaning may be the only thing that diverse primes have in common. As a result, positivity or negativity may become primed with no apparent source. Being unconstrained in this way, the primed evaluative meaning may be

TABLE 6.1 Object Specificity and Duration as Constraints on Experiential and Conceptual Information

	Sources of Affective Feeling		*Sources of Affective Meaning*	
	Current	*Chronic*	*Current*	*Chronic*
Salient object	Emotion	Attitude	Thought	Belief
No salient object	Mood	Temperament	Prime	Trait

experienced as a reaction to whatever is currently in focus, just as in the case of mood-based feelings. As one engages in self-monitoring, induced feelings or primed meaning may be misattributed to oneself. For example, positive mood or activated conceptual positivity might be experienced as self-confidence or well-being.

In line with these considerations, various forms of experiential and conceptual information can be differentiated in terms of constraints. Table 6.1 shows that attributions of affective feelings and affective meaning are both constrained by the duration of feelings and concepts and their apparent objects.

We assume, therefore, that the affect-as-information approach can accommodate affective concepts as well as affective feelings. The information conveyed by affective concepts and feelings both depend on attributions about their sources. Such attributions may be implicit and perceptual (rather than explicit and cognitive), and they may be determined by the proximity in time and space of concepts and feelings to their objects, as outlined by gestalt psychologists (e.g., Heider, 1958). Table 6.1 suggests that we have different labels for feelings and accessible concepts depending on whether they are dedicated to objects and whether they are current or chronic. Space does not permit full elaboration of the episodic constraint principle, which maintains that primed elements of meaning obey the same principles as mood-based affect. However, a useful exercise is to consider the claims in the subsequent sections with this hypothesis in mind.

We have discussed five assumptions underlying the affect-as-information approach. These are basic principles that have additional corollaries or implications. For instance, implicit in the immediacy principle is that the meaning and consequences of feelings (and primed concepts) depend not only on the specific object to which they are attributed, but also on the larger

personal narrative within which affect is elicited or ideas are primed (e.g., Martin, Ward, Achee, & Wyer, 1993). So far, we have focused on how feelings and thoughts can affect judgment directly when experienced as reactions to objects of judgment. This can be summarized in the **Affective Judgment Principle: When one is object focused, affective reactions may be experienced as liking or disliking, leading to higher or lower evaluation of that object of judgment**. However, in cases in which one is not focused on an object with the goal of evaluating it, but on a problem with a goal of solving it or on a task with the goal of performing well, then affective reactions may have a different influence, as discussed next.

MOOD AND PROCESSING

Affective feelings are always experienced as evaluations, but the object that they imbue with value depends on one's focus of attention. Positive and negative affect may be experienced as liking or disliking when one is focused on an object, but when focused on a task, the same feelings may be experienced as feedback about one's ability to do the task. Thus, according to the **Affective Processing Principle, when one is task oriented, affective reactions may be experienced as confidence or doubt about cognitively accessible information, leading to greater or lesser reliance on one's own beliefs, expectations, and inclinations**. Evidence for the principle is that individuals in happy moods are more likely than those in sad moods to rely on accessible cognitions, including expectations and stereotypes (e.g., Bodenhausen, Kramer, & Susser, 1994). In a relevant study, participants read about a day in the life of a woman named Carol, who was initially described either as an introverted librarian or an extraverted sales representative (Isbell, Clore, & Wyer, 1999). The behaviors in the story about her were equally balanced between extraversion and introversion. Despite the balanced nature of the behaviors, happy participants relied on stereotyped expectations, judging Carol the librarian as introverted and Carol the sales representative as extraverted. By contrast, sad participants relied on Carol's behaviors, so that they judged her to be the same in both roles.

In addition to the use of stereotypes, individuals in happy moods also rely on other accessible information, including reliance on technical expertise (Isen, Rosenzweig, & Young, 1991), primacy information (Sinclair & Mark, 1992), behavioral scripts (Bless et al., 1996), and general categories (Dienes, 1996; Isen & Daubman, 1984; Kaplan, Kickul, & Reither, 1996).

The Processing Principle alluded to previously explains such effects by suggesting that affective feelings may serve as task-relevant feedback (see

also Carver & Scheier, 1990). Other versions of the affect-as-information approach are similar, but differ in various ways. Schwarz (1990) proposed that affect serves as feedback about the external situation. He reasoned that if positive affect indicates that a situation is safe, people may see little need to expend cognitive effort (unless triggered by other currently active goals) so that they engage in heuristic processing. However, when negative affect indicates that a situation is problematic, it motivates more effortful and systematic processing. Schwarz assumes that cognitive-processing styles are tuned to meet the processing requirements signaled by one's affective state (see also Schwarz & Clore, 1996; Clore et al., 1994).

Bless (in press) proposed that mood effects on processing depend on implicit judgments about cognitive content, rather than on different kinds of processing. He also suggested that any reduced processing in positive moods simply means that the use of general knowledge in happy moods often makes extensive processing unnecessary, rather than that happy moods reduce the motivation for such processing. Bless et al. (1996) tested this hypothesis by examining performance on a secondary task. He found that during the period when they were relying on their general knowledge, participants in happy moods did better than sad participants on the secondary task. Rather than reflecting a desire to save effort, enhanced performance on the secondary task showed that the use of general knowledge in happy moods allowed attention to be devoted to the secondary task.

Whereas Schwarz (1990) focused on affect as information about the situation and its processing requirements, Martin et al. (1993) focused on affect as feedback about the adequacy of responses. They interpreted mood effects on processing as a consequence of judgments about response adequacy. Wyer, Clore, and Isbell (1999) extended this performance feedback interpretation. Martin et al. proposed that affective feedback serves as a basis for deciding whether to continue or to stop goal-directed processing, and Wyer et al. suggested that it serves as feedback about the strategy chosen to attain a particular objective. Thus, affect may be experienced as success or failure feedback about initial responses in task situations. Instead of focusing on the differences among formulations, we describe experiments designed to examine the reasonably general account offered by the processing principle in which positive and negative affect is believed to be experienced as confidence and doubt about one's own thoughts and inclinations (Clore et al., in press). According to this principle, affect should govern whether one assimilates incoming information to active concepts or accommodates concepts to incoming information from the environment. Thus, positive affect may serve as a cue or incentive to

rely on internal thoughts, expectations, and inclinations, whereas negative affect should direct attention to new, external information. In a similar way, when a small food reward (or a shot of dopamine) is delivered to animals in the start box of an experiment, it elicits learned and accessible responses, whereas cues of punishment lead to gathering new information rather than reliance on prior learning (Hoebel, 1999).

We examined the processing proposition by studying the effect of mood on three classic phenomena (Gasper, 1999; Gasper & Clore, 2000a,b). The experiments used stimuli from the original demonstrations of mental schemas by Bartlett (1932), mental sets by Luchins (1942), and heuristic reasoning by Tversky and Kahneman (1973). Although the phenomena differ in content, they all depend on the use of accessible information during problem solving. As a result, if affective cues are experienced as feedback about the value of initially encountered and accessible information, we predicted that individuals in positive but not negative moods should show the classic effects.

In 1932, Bartlett devised the method of serial reproduction in which he showed a drawing of an African shield to his Cambridge undergraduates and asked them to draw it from memory. Their drawings were given to others, who subsequently tried to draw them from memory, and these were given to a third group to draw, and so on. The drawing (Fig. 6.1) was titled "Portrait of a man," and Bartlett showed that over trials, the reproductions were assimilated to the schema of a face. He used this experiment and others like it to establish his idea that memory is a constructive process.

Gasper and Clore (2000b) replicated Bartlett's study with mood to test the hypothesis that affect influences reliance on accessible information. To induce mood, we asked participants to write about a happy or sad event (Schwarz & Clore, 1983). As predicted, blind ratings showed that drawings done in happy moods looked more like a face than those in sad moods, suggesting again that positive affect promotes an internal focus on cognitively accessible information and negative affect promotes an external focus on new information.

As a second test of this hypothesis, we replicated a classic experiment by Luchins (1942) and showed that the induction of mental sets influences the problem solving of happy but not sad mood participants (Gasper & Clore, 2000b). In a third test, Gasper (1999) repeated one of Tversky and Kahneman's (1973) demonstrations of heuristic reasoning. On the well-known Linda problem, happy but not sad participants were led by initially presented information to commit the conjunction fallacy by asserting that the conjunction of two events is more likely than either of the events alone.

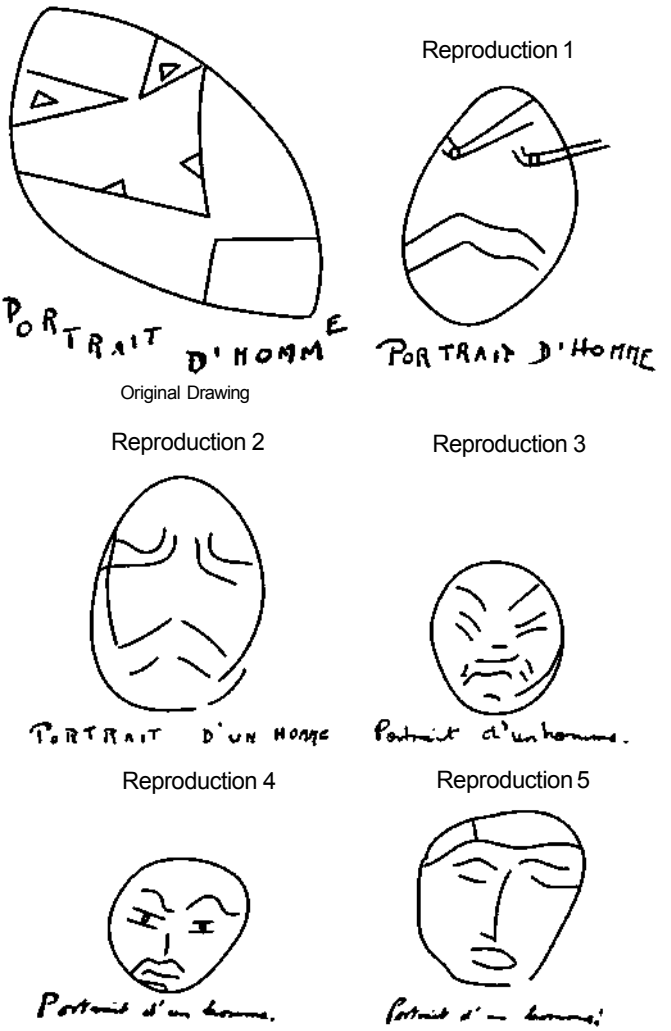

FIG. 6.1. Serial reproductions of drawings from Bartlett (1932) showing how a label, "Portrait of a man," serves as an organizing schema in reconstructing memories. (Gasper, K., & Clore, G.L., 2000b. *Paying attention to the big picture: Mood and the global us. local processing of visual information.* Unpublished manuscript. University of Illionis at Urbana-Champaign.)

Specifically, background information about Linda's socially conscious political activity led respondents in happy but not in sad moods to conclude that the probability of Linda being both a feminist and a banker must be higher than that she is a banker only.

These three classic experiments all exploit the power of accessible cognitions, showing the effect of schemas on memory, mental sets on problem solving, and expectations on probabilistic reasoning. Consistent with the processing principle, positive affect led to the use of information that was cognitively accessible. In these particular problems, such accessibility effects led to errors; but for some problems, reliance on accessible categories (Dienes, 1996), knowledge (Isen, Rosenzweig, & Young, 1991), and associations (Isen, 1984) leads to superior performance.

Priming and Processing

Earlier, we proposed that subtly induced affective feelings and unconsciously primed affective concepts have parallel effects on evaluative judgment. We suggested that the informational and attributional principles governing the influence of feelings also apply to concepts. Mood-based feelings and unconsciously primed thoughts are both cognitively unconstrained so that they can be experienced as spontaneous, internally generated reactions to current stimuli. Most subliminal priming studies show effects on judgment, but data recently collected in our laboratory by Colcombe and Isbell suggest that primed affective meaning may influence processing in the same manner as induced affective feeling. Schematic smiley or frowny faces were presented subliminally just before participants completed the stereotyping task described earlier (Isbell et al., 1999). Consistent with the Episodic Constraint Principle, subliminal smiley faces appear to lead to greater reliance (and subliminal frowny faces to less reliance) on stereotypes when processing information about another person (for other research on the effects of smiles on processing, see Ottati, Terkildsen, & Hubbard, 1997). These data are consistent with the Affective Processing and Episodic Constraint principles. That is, the critical element in the cognitive consequences of affect is the experience of positive and negative thoughts and feelings as reactions that signal whether to "go" or "stop" using internal, accessible information. However, in addition, such top-down processing also appears to involve a focus on the global rather than the local aspects of stimuli, as described in the following paragraphs.

Affect and Level of Focus. To the extent that positive affect is experienced as an indication of the success of one's efforts and negative affect is experienced as evidence of a problem, there is reason to expect these affective cues to lead to differences in level of focus. In their work on action identification, Vallacher & Wegner (1985) showed that in the context of feedback about success, people characterize their behavior as relevant to higher-level, more abstract and encompassing goals, and with failure feedback to lower-level, more concrete and disconnected goals. On this logic, we (Clore et al., in press) have proposed a **Level of Focus Principle: Affect experienced as feedback about the likelihood of success or failure should also influence the global versus local focus of processing**.

Other versions of the affect-as-information approach have also emphasized the general versus specific distinction. Schwarz (1990) mentions that happy moods should be associated with reliance on general as opposed to detailed information, and Bless (in press) suggests that positive affect is associated with the use of general knowledge structures. Also, it is perhaps implicit in Fiedler's (in press) assimilation-accommodation view that general concepts assimilate more detailed data.

In addition, findings that individuals in positive moods rely more on expectations, stereotypes, and impressions than individuals in negative moods could also be interpreted as showing that positive mood leads to a global focus and negative mood to a local focus. The schemas, mental sets, and impressions formed in these experiments represent not only accessible information, but also global information.

A recent test of this hypothesis (Gasper & Clore, 1999c) used a global/local perceptual task (Kimchi & Palmer, 1982) to examine attentional focusing. Subjects were shown figures in which, for example, a triangle might be made of squares or a square of triangles. For each figure, they were to indicate which of two comparison figures (e.g., squares made of squares or triangles made of triangles) was most similar to the original (Fig. 6.2). Comparing the choices made across trials indicates whether a subject tends to focus at the global or local level in completing the task. The results show that individuals in happy moods did, in fact, focus at the global level to a greater extent than individuals in sad moods (see also Derryberry & Reed, 1998, who examined similar effects for trait affect).

We have focused on two kinds of processing effects—the role of mood in promoting reliance on accessible information and in adopting a global versus local focus. We have tended not to describe mood effects on processing in terms of amount of processing. We agree with Bless (in press) that evidence of less extensive processing in positive moods is not

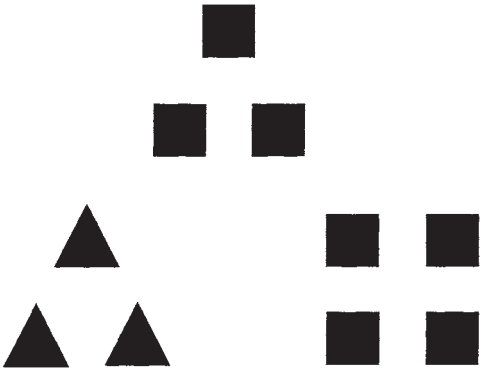

FIG.6.2. Sample item in a match-tosample task assessing global versus local attentional focus. (Gasper, K., & Clore, G.L., 2000a. *Paying attention to the big picture: Mood and the global us. local processing of visual information.* Unpublished manuscript. University of Illinois at Urbana-Champaign.)

motivated by a desire to reduce cognitive effort, but is a byproduct of the role of affect as feedback. In other words, if affective feedback indicates that one's current information is correct, then additional processing to find the correct answer is simply unnecessary.

Many of the basic affective phenomena are consistent with multiple hypotheses. However, the ability of attributional manipulations to alter or eliminate the effects implies that affect-as-information processes may be at work. Attributional manipulations typically do not alter affective feelings, but only their apparent meaning, significance, or information value. When a possible source is made salient that would render one's feelings nondiagnostic, then mood effects generally disappear (Dienes, 1996; Gasper, 1999; Isbell et al., 1999; Sinclair, Mark, & Clore, 1994). Such results strongly suggest that the active agent was the information value or experiential meaning of the affect.

We have reviewed briefly some of the research from the affect-as-information approach concerning the affective controls on processing. This work is guided by the idea that affect may be experienced as feedback about progress toward one's current goals. Therefore, the information value of affective feedback depends on the goal that is active. In this discussion, we have focused on situations in which we assume performance goals to be superordinate. When that is the case, positive affect is likely to lead to reliance on internally accessible information and negative affect to a focus on new information in the environment. However, a number of investigators

have pointed out that people are sometimes focused on a goal of emotion regulation rather than performance (Erber & Erber, this volume). Under a goal to enjoy oneself, the same affective cues often have a different information value, as indicated in the Enjoyment Principle.

The Enjoyment Principle: When One is Emotion Focused, Affective Feelings May Be Experienced as Enjoyment or Displeasure, Leading to Greater or Lesser Persistence at an Activity. The Enjoyment Principle indicates that when engaged in activities just for fun, positive feelings may be experienced as feedback about enjoyment rather than about performance. Evidence that the information value of affect varies with the dominant goal comes from Martin et al. (1993; see also Wegener, Petty, & Smith, 1995). In one experiment, participants were given a stack of cards, each with a description of a behavior printed on it. They were to told to read the cards and either to continue as long as they were enjoying themselves or, in another condition, to stop as soon as they felt they had done enough. Martin et al., found that individuals in happy moods read more cards than those in sad moods when positive feelings were experienced as information that they were still enjoying themselves, but that they read fewer cards when positive feelings were experienced as information that they had done enough. The results show that the information value of affect may be different for enjoyment goals than for performance goals.

MOOD AND MEMORY

In addition to its effects on judgment and processing, mood is also widely believed to influence memory. This hypothesis also offers a powerful explanation for other phenomena (Bower, Montiero, & Gilligan, 1978; Isen, Shalker, Clark, & Karp, 1978). For example, judgment effects can be explained by assuming that moods bias the information available for judgment in a mood-congruent direction. However, the reliability of mood-congruent memory has always been an issue (Blaney, 1986). Commenting on their own difficulties replicating mood and memory effects, Bower and Mayer (1985) suggested that experimental inductions of mood might often be too weak to detect the effect. However, there are also theoretical reasons for questioning whether affect should function in that way. Indeed, Wyer et al. (1999) argue that, although affect may be conceptualized in terms of concepts from declarative memory, affect itself is not part of declarative memory.

The Affective Memory Principle: Affective Feelings May Activate Specific Concepts for Interpreting Them, but Such Affect is Not Itself Stored in Declarative Memory and Does Not Automatically Influence the Accessibility of Similarly Valenced Semantic Concepts and Declarative Knowledge (Clore et al., in press; Wyer et al., 1999). In our view, emotional feelings are an experiential representation of emotional significance. That emotional significance can also be represented symbolically in emotional concepts, which can prime related concepts and events in declarative memory. If one were sad, conceptualizing one's situation as "being sad" might make memories of other sad situations more accessible. However, that would not be an example of mood effects on memory, but simply of cognitive priming. Wyer et al. (1999) point out that we can interpret the experience of a chair by applying the concept "chair," and the experience of sadness by applying the concept "sad." However, there is no reason to assume that the sadness itself (as opposed to its conceptualization) exists in declarative memory any more than that the chair does, and hence there is no reason to assume that the experience of affect would necessarily activate similarly valenced memories, except perhaps as part of the conceptualization process. We propose, then, that when mood congruent memory does occur, it is a function of affective concepts rather than of affective feelings (Wyer et al., 1999).

Of course, happy and sad moods can influence memory to the extent that they involve the activation of relevant concepts. Thus, we are not suggesting that those claiming a relationship (Bower et al., 1978; Isen et al., 1978; Forgas, 1995) are necessarily incorrect. In general, clear distinctions have not been made between affective concepts and feelings, but the implication of their work has always been that affect itself activated affect-congruent material in memory. Wyer et al. (1999) suggest that this may turn out not to be the case. Whereas people do have concept-congruent lines of thought, they do not have affect-congruent lines of thought unless relevant concepts are active to do the priming. Feelings, by themselves, probably do not prime affectively similar concepts and memories. Thus, if one person tells a sad story, others may relate similar experiences. However, that would illustrate conceptual priming, not an effect of feeling on retrieval.

The behavioral economist Lowenstein (1996) observed that people routinely underestimate the role of emotional and other "visceral" experiences in decisions. He notes, but does not explain, that in judgments about one's own past behavior, forecasts of one's future behavior, and considerations of the behavior of others, people often fail to appreciate the role played by subjective experience. People are often especially bad

at making decisions about alcohol, drugs, and sexual behavior, he says, because they underestimate the compelling nature of their own emotional experience. We suggest that this is so because one can store in memory only concepts about emotional experiences, not the actual experiences, and such symbolic representations of past bad outcomes are no match for the compelling nature of actual current experience.

The literature on fear conditioning might be thought to provide counterexamples of our claims about affect and memory. However, such conditioning does not work by storing the experience of fear to be elicited as a memory by the conditioned stimulus. It is not the fear response that is conditioned and hence remembered, but the threat meaning of the stimulus (Hebb, 1949). Subsequent fear reactions to the conditioned stimulus are new instances of fear triggered by the conditioned threat meaning, not old experiences that are retrieved from memory.

We are not suggesting that emotion is not important for memory. Emotional experience often causes memories to be quite indelible, and it presumably makes good evolutionary sense that we remember things that were emotionally significant. Indeed, aspects of traumatic situations may retain their ability to elicit unpleasant memories for a long time. However, these are not examples of feelings triggering memories but of events that are capable of eliciting feelings being memorable.

After a review of the literature, Wyer et al. (1999) and Wyer and Srull (1989) noted that studies of mood and memory generally involve explicit instructions to think of happy or sad events (Bower, 1981) or films with explicitly happy or sad themes. In contrast, Parrott and Sabini (1990) conducted a study in which the cause of mood had little cognitive content. They assessed students' moods on sunny and pleasant or rainy and unpleasant days and then asked them to recall events in their recent past. Mood-congruent memory was not found, except in a condition in which subjects were led to label their moods. Rothkopf and Blaney (1991) reported similar conclusions. Riskind (1989) also noted the ineffectuality of feelings as retrieval cues, focusing instead on the importance of cognitive priming in mood effects.

These considerations led Garvin (1999) to test the hypothesis that mood effects on memory involve conceptual rather than affective priming. Specifically, she examined the effects of happy versus sad feelings and happy versus sad primes on the recall of a story containing equal numbers of happy and sad events. Music was used to induce mood without activating mood concepts (Niedenthal & Setterlund, 1994). The priming task was a scrambled sentence test (Srull & Wyer, 1979). Participants underlined

words that would make sentences in a series of four-word strings. Half of the 40 strings included a happy or a sad emotion word ("she disappointed crushed felt") and half were neutral ("turn go now left"). Participants then read a story (Bower, Gilligan, & Montiero, 1981) about a character named Paul who described an equal number of happy and sad events from childhood.

Garvin found, as predicted, that recall was congruent with the primes, but not with mood. However, mood did influence judgment, showing that the mood manipulation was effective. Consistent with the Affective Processing Principle, the concepts that had been made accessible through priming influenced judgment in positive moods and not in negative moods.

This is the first experiment (of which we are aware) that has varied priming and mood independently, and it serves as a strong test of the proposed principle. Replication is necessary, but it is noteworthy that this initial study used standard priming and mood induction procedures, and the original story from Bower et al. (1981).

SUMMARY

We have outlined the central assumptions of the feelings-as-information approach to affect and cognition (Clore, 1992; Clore et al., in press; Schwarz, 1990; Schwarz & Clore, 1983, 1988, 1996). In an attempt to make these explicit, we expressed them in 10 principles. The Experience and Information principles propose that emotional feelings are representations of unconscious appraisals, so that they are appropriately experienced as information about (one's view of) the objects of those appraisals. The Attribution and Immediacy principles propose that when the object of affective cues is unconstrained (e.g., when they arise from general moods and dispositions rather than from specific emotional appraisals), they are subject to mis-attribution to other accessible objects. The Episodic Constraint Principle proposes that the experience of (primed) concepts and (induced) feelings are governed by the same informational and attributional processes. Consistent with the Immediacy Principle, the influence of affect on information processing ultimately depends on the cognitive context in which the affect is experienced. The effects may differ, for example, depending on whether one focuses (1) on objects with the goal of evaluating them, (2) on tasks with the goal of performing well, or (3) on the feelings themselves with a goal of enjoyment.

The Judgment Principle indicates that when focused on objects with a goal of evaluating them, positive and negative affect may be experienced as

liking and disliking, and may influence affective judgments and decisions. The Processing Principle is that when one is task oriented, affective reactions may be experienced as confidence or doubt about cognitively accessible information, leading to greater or lesser reliance on one's own beliefs, expectations, and inclinations. Thus, positive affect may promote top-down, theory-based processing in which one relies on cognitively accessible information (e.g., knowledge, beliefs, stereotypes, expectations, primed thoughts), and negative affect may promote bottom-up, data-based processing, in which one relies on data from the external environment rather than on internal cognitive constructions. Affect may thus play an important role in the constant cycle of data assimilation and schema accommodation. In addition, the Levels of Focus Principle suggests that affective feedback about goal-directed efforts should also influence the global versus local focus of processing, such that positive moods promote attention to the global, and negative moods to the local aspects of stimuli. A third possibility is that one can be focused on the feelings themselves with the goal of enjoyment. Then, according to the Enjoyment Principle, positive and negative affect may be experienced simply as enjoyment and lack of enjoyment, leading to greater and lesser persistence at an activity or task.

Finally, although it has traditionally been assumed that affect influences cognition indirectly through its effects on attention and memory, our emphasis on the direct influence of affect leads to a different view. According to the Memory Principle, affective feelings may activate specific concepts for interpreting them, but such affect is not itself stored in declarative memory and does not automatically influence the accessibility of similarly valenced semantic concepts and declarative knowledge. From this view, the literature on mood and memory may reflect the role in memory of activated concepts about mood rather than of feelings of mood.

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