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Database: ProQ:PsycINFO
Author: Stein, Nancy N L
Title: Making sense out of emotion: The representation and use of goal-structured knowledge.
Source: Memories, Thoughts, and Emotions : Essays in Honor of George Mandler, 1991-01-01, p.295-
Publisher: Taylor and Francis/Hoboken: Hoboken
ISBN: 0805808698
WorldCat number: 23140115

Book Holdings:

UCLA College Library BF311 .M445 1991 Circ Status: available
UCSD Geisel Floor5 BF311 .M445 1991 Circ Status: available

Scanjob #901 AL 4/9/13
Memories, Thoughts, and Emotions: Essays in Honor of George Mandler

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LAWRENCE ERLBAUM ASSOCIATES, PUBLISHERS
1991
Hillsdale, New Jersey

Hove and London
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was not to get even but to get the paper published. And under these circumstances, what the editor wanted the editor got, unless it compromised my moral integrity or decency. And he felt I had a long way to go before that happened.

Finally, his advice and concern for dealing with what I know to be my worst personal characteristics have been unique and uplifting. As honest as George is, he also has the capacity to understand, accept, and forgive. And for this I am grateful. We all can think of individuals, without whom our lives would not have had the quality of goodness and enrichment that we desire. For me, George is one of those people, and I walk around with a little piece of George serving as a homunculus, to remind me to be aware, to be more at ease, and to enjoy the present as much as possible.

This chapter focuses on the representation of emotional experience and the way in which emotion and thought are interrelated. We present a model that specifies the type of knowledge acquired about emotion, the way in which this knowledge is organized, and how it is used to regulate behavior. We describe the thinking that occurs during emotion episodes and the way in which thought and emotion influence each other. We also illustrate how emotional behavior is perceived and understood by both children and adults, and we show how differences in values and beliefs lead to variation in emotional responses. As such we address issues related to both learning and development.

Our model of emotion is based on a goal-directed, problem-solving approach to the study of personal and social behavior. We assume that much of behavior is carried out in the service of achieving and maintaining goal states that ensure survival and adaptation to the environment. A basic tenant underlying this belief (Stein & Levine, 1987, in press) is that people prefer to be in certain states (i.e., pleasure) and prefer to avoid other states (i.e., pain). A second assumption is that when people experience unpleasant states, they attempt to regulate and change them. One way of achieving this change is to represent a state, called a goal. A goal state can then be used to initiate action or thinking that results in the desired internal state change.

A critical dimension in defining and describing emotional experience, therefore, focuses on the concept of change. Representing and evaluating change with respect to how valued goals have been affected is seen as a necessary prerequisite for experiencing and regulating emotion. As such, our theory is oriented toward a specification of the process by which changes in goal states are detected and emotions are elicited. We also focus on the way in which emotion-eliciting events are represented and the type of thinking that occurs throughout an emotion
differences are more a function of the type of knowledge acquired or the degree to which children have been exposed to a task rather than to any general process pertaining to development per se. With due respect to this potential confound, however, certain developmental differences in emotional processing must be considered.

The debates concerning development revolve around which aspects of emotion are innate and which are learned. A second issue concerns the nature of the changes that occur in children's knowledge of emotion and the way in which development affects the organization of emotion. We begin by considering some of the regulatory processes present at birth and some that develop as a function of maturation and experience. Then we present an analysis of the specific processes and types of knowledge that are acquired and used during emotional experience. Finally, we present data that bear on the validity of our model, with respect to both developmental and individual differences in emotion knowledge.

THE DEVELOPMENT OF EMOTIONAL EXPERIENCE

The first issue we consider is whether preferences are innate. At birth, the infant's repertoire includes a set of behaviors for responding to different types and intensities of stimulation. Many are reflexive in nature (i.e., the startle, orienting, blinking, and sucking reflex). Some involve an affective response to the nature of stimulation. For example, certain events precipitate distress responses, consisting of volatile activity, crying, and particular facial expressions. Other events elicit a quieting response, with the absence of volatile activity and expression. A few researchers have held that these responses are evidence for assuming that the infant has innate preferences for being in certain states and preferences for avoiding others. For example, Zajonc (1980) argues that initial preferences need no cognitive input for their elicitation and that they drive all other forms of emotional development.

We do not question the existence and importance of preferences, for they are critical to the experience and expression of emotion. But we take issue with the claim that newborns have acquired full-blown preferences such as desires to be in certain states or desires to avoid others. The fact that infants experience pleasure and distress does not mean that they prefer or desire to shift from one state to another. Having preferences requires the ability to represent, compare, and choose between two different states, where a desire to orient more toward one state than another is expressed. To carry out this type of thinking, a person must have acquired the ability to represent a state that does not currently exist. Although newborns can experience pleasure or distress in response to different events, they have yet to acquire the capacity to represent internal or external states different from those currently directing their behavior.

One reason that young infants experience difficulty in representing hypo-
EVALUATION PROCESSES UNDERLYING EMOTIONAL EXPERIENCE

A necessary feature in our theory is the presence of a representational system that monitors subjective states and bodily reactions. Monitoring is carried out in the service of moving toward states that are beneficial for survival and moving away from environments that are harmful. The primary function of this system is to access knowledge that allows the evaluation of an event, action, object, or state in regard to its value (see also Mandler, 1982, 1984). This representational system must include information about states that are pleasurable and preferred and states that are aversive and to be avoided. The system also contains information about the conditions that lead to specific goal states, and it contains information about the relative ordering of goals in terms of their necessity for maintaining or avoiding certain states (i.e., preferences).

Given these properties, a value system has three primary characteristics. First, it is hierarchical in nature such that a series of goals can be represented with regard to the causal conditions that embed and connect one goal to another. Second, preference trees can be constructed such that certain goals are considered more valuable than others. And third, this system is dynamic in nature such that some preferences and some parts of a goal hierarchy (i.e., the conditions linking goals together) can be changed. As a result of incorporating new information about conditions leading to the attainment of valued goals, the structure of the hierarchy undergoes continued construction and reorganization. Goals that have a high value on one occasion often decrease in value on another, depending on the operating conditions. Similarly, goals that are unfamiliar or lacking in value often increase in worth as new connections are made between these new goals and other valued familiar goals. The important point is that, like all other schemata, value systems are both stable and dynamic. Some parts of the value system remain constant and other parts change.

The existence of a value system is fundamental to emotional behavior (Lazarus & Folkman, 1984; Mandler, 1984; Stein & Levine, 1987) because it alters individuals to those situations that bring pleasure and pain. With such a system operating, two primary tendencies exist: the desire to attain or maintain a valued state and the desire to get out of or avoid an aversive state. As we previously stated, a value system becomes operative when an individual is in one particular state, can imagine the existence of another one, and has an understanding that the imagined end state leads to a more pleasurable outcome.

Thus, a second component critical to our model is the ability to detect change in the environment as well as in one's own internal states. Moreover, the change must be assessed with respect to maintaining current values and goals. Here, we describe the different processes that occur when emotional reactions are experienced. We begin by describing baseline activities that occur immediately before the onset of a precipitating event. Four are of interest: (1) the type of ongoing
cognitive activity, (2) the level of physiological arousal, (3) the emotional state of the participant, and (4) the type of ongoing overt activity. These variables are important because our model assumes that an emotional reaction always causes a change in the first three processes and often causes a change in overt actions as well (Ekman, 1977). Thus, our model is a state change model where all properties change in some specific way when an unexpected precipitating event occurs.

Precipitating events emerge from three different sources: the environment (i.e., a physical event such as a rain storm, a fire, the formation of a rainbow, or the action of another person, such as the giving of a gift or the violation of a promise), one’s own actions, or the result of memory retrieval of past events. For an emotional response to occur, the precipitating event must be encoded and accessed during the evaluation process. In the case of retrieving an event from memory, the initial encoding has already taken place, but the event must be accessed and placed in working memory. Then, a meaning analysis has to be performed on the focal information.

The meaning analysis can be broken down into different processes. Of primary interest are those that facilitate the integration of incoming information into current knowledge structures. Assuming that different pattern-matching procedures underlie most attempts to integrate new information into current knowledge stores, it is important to discriminate between those where a match results and those where a discrepancy occurs. If incoming information is congruent with information in existing knowledge stores, then it is readily assimilated into current knowledge schemes. Under these conditions, individuals are often unaware of the processes associated with encoding and understanding.

When a mismatch occurs, however, information cannot be immediately assimilated into current working schemes. By definition, some of this information is novel or unexpected; that is, some aspect of the incoming information is incongruent with what was expected, given the current state of a person’s knowledge. Mismatches cause an interruption of ongoing thinking, give rise to subsequent evaluation processes, and cause subsequent changes in states of ANS arousal (Mandler, 1975; 1984). When both ANS arousal and cognitive evaluation occur, an emotional reaction occurs. As we stated before, precipitating events often cause ANS arousal leading to an affective or reflexive response. However, we do not consider these affective responses to belong to the class of emotional responses, because no evaluation of current goal states is made. It is when both autonomic arousal and evaluation occur that an emotional reaction occurs.

When the evaluation process is initiated, an assessment is first made as to whether an adequate representation of the precipitating event exists. Many instances occur where only part of an event is understood because the information is so novel. In these cases, surprise and a sense of curiosity is evoked. This indicates that the first cognitive activity of the individual is to form a representation of the event in the service of understanding the new information; that is, many precipitating events require that new categories get formed or that beliefs are updated so that the event can become known and predictable. Then an evaluation can be made as to whether the event has any significance with respect to changing, blocking, or facilitating the attainment of valued goals.

Separating the process of forming an adequate representation from the process of evaluation is difficult because frequently the two occur in close temporal proximity. However, the formation of a representation always precedes the evaluation process. Moreover, different affective reactions should occur when representations are being formed than when changes in goal maintenance are being assessed. Surprise, curiosity, and interest are indicative of the formation of new representations, whereas happiness, anger, sadness, and fear are indicative of those emotions that occur when an event is being assessed with respect to the maintenance of valued goals.

The fact that surprise is often reported in conjunction with happiness, anger, or distress lends support to the notion of separating the understanding process from the evaluation process. When surprise occurs in close proximity to other emotions, surprise normally precedes other emotions. As an example, we provide dialogue from a recent study we (Stein & Trabasso, 1989) have carried out with 5-year-old children. On one occasion, a kindergarten student was told that her teacher was going to let all the children paint as part of the normal course of activities in the classroom. The child was then told that painting would occur on a daily basis, and she was asked how she would feel if she were allowed to paint everyday in her classroom. Her responses to this question were that she really liked painting (value) and that she felt it made her really happy (emotional response), especially when she could paint whatever she wanted.

This child was then told that today when she got through painting, her teacher was going to give her all the paints to take home. As a result, she would be able to paint at home as well as in school. The child was then asked to describe her thoughts and feelings in response to this event. She began by saying: “Do you really mean that she (the teacher) is going to let me take all the paints home? Am I the only one who gets to do this? Is this a present for me? Does she want me to paint everyday?”

If we had videotaped the facial expression of this child, we would have seen a look of surprise followed by a look of concern as she began to talk. First, this child did not quite believe that the teacher would give her a gift. Thus, to respond to this event, she first had to change her belief about the relative improbability of the event occurring. If we had asked her whether or not she thought her teacher would ever give her a gift of paints, we would probably be able to show that this child judged the event as highly unlikely. Approximately 70% of all the children in this study (Stein & Trabasso, 1989) actually said: “I don’t believe it. Can you believe it? Why would she do that?” Apparently, teachers are not thought of as givers of gifts, and the act of a teacher giving a child a gift to take home violated these children’s conceptions of what a teacher does. For children to evaluate the
event in terms of their own goals, however, they first had to accept the fact that
the teacher was indeed giving them a gift with which they could do whatever they
wanted. Once the children accepted this fact, almost all of them expressed
extreme happiness.

Thus, in our example, children first attempted to discern the truth value
associated with the occurrence of a precipitating event. They then attempted to
understand exactly why the teacher was giving them a paint set and what she
wanted them to do with the set. The general act of one person giving another a
gift was not an unfamiliar event to these children. In fact, this transaction is
highly familiar, and children considered it a very pleasant experience. Therefore,
most of the children encoded the event correctly the first time they heard about it.
However, disbelief was still expressed because of the ambiguity inherent in the
event. A teacher could give children paint sets for many reasons other than the
one expressed in the text. The children were not initially convinced that the stated
reason was in fact the one that the teacher had in mind. For these children,
teachers are not associated with gift giving as much as they are associated with
setting up tasks that must be accomplished. Thus, the novel element for these
children was the act of their teacher giving them a gift.

The familiar combined with a novel dimension is often the factor that causes
the greatest surprise, shock, or horror when such an event occurs. Examples of
tragedies are those instances where a horrible event occurs, such as a plane crash
or an earthquake, where the victim loses a loved one and does not believe that
such an event could ever happen to him or her. The familiarity of such an event
(i.e., knowing that such an event could happen and perhaps witnessing the grim
reality of others having to cope with such a disaster) allows the victim to experience
horror or grief. Moreover, shock and an air of unreality set in almost
immediately or often precede the feeling of terror and grief. The ability to accept
the fact that the event really has occurred and cannot be changed is the critical
variable that regulates whether or not the consequences of the event will be
processed. If doubt surrounds the occurrence of an event, attention will be
focused first on determining the certainty of the event. For if there is any doubt
that such an event occurred, most likely all possible resources will be devoted to
ascertaining the reality of the event.

Surprise and interest are different from emotional responses in that they indicate
an effort to construct new representations of novel information in a precipitating event. These affective responses are not directly associated with an
evaluation of how a precipitating event affects the accomplishment of goals. The
degree to which a precipitating event is considered possible or understood will
predict whether surprise or interest is expressed. If the implications of the precipitating event are not evaluated in terms of whether valued goals have been
threatened, blocked, or attained, then surprise should be expressed. Attempting
to understand how precipitating events affect valued goals should be associated
with states of interest or curiosity. However, as soon as the event is understood in
terms of a valued goal, specific emotional responses should be present.

We now turn our attention to a description of the process of thinking and
planning associated with four emotional responses. Most investigators studying
the conceptual organization of emotional knowledge have simplified the thinking
processes associated with emotional responses. Although emotional responses
can indeed be rapid, occurring almost in an automatic fashion (Ekman, 1977),
the delay between a precipitating event and an emotional response can also be
quite long. We know of few on-line processing studies that have actually documented
the variations in the time delays of emotional responses, nor do we know of
any studies that have described the multiple changes that occur during attempts
to understand the meaning of a precipitating event. Although we illustrate how
four different emotional responses occur, our focus is on the process of experiencing
and thinking about emotion.

THINKING AND REASONING ABOUT HAPPINESS,
ANGER, AND SADNESS

When we talk about happiness as opposed to pleasure, or when we refer to anger,
sadness, and fear, as opposed to pain, distress, or a startle response, we need to
include additional evaluative processes that focus on the recognition of changes
in maintaining or attaining a valued state (see Sroufe, 1979, for a cogent analysis
of this shift). Pleasure, pain, interest, distress, and startle can occur without
many of the dimensions associated with the causes of happiness, anger, sadness,
or fear. These latter emotions do not occur independent of a context. We are
happy or sad about something that happened; we are angry at something, we are
afraid of something. These emotions occur because evaluations have been made
about how a particular event will affect valued goals.

Before presenting a process analysis of these emotions (see Stein & Jewett,
1986; Stein & Levine, 1987, for an extended analysis), we draw attention to three
problematic issues associated with the study of emotion. The first concerns the
belief that some type of novel information must be detected for any emotion to be
experienced. The second focuses on the disruption of thought and the disorganized
growth of thinking and behavior that supposedly occur as a function of experiencing
an emotion. The third pertains to whether positive and negative emotions have differential effects on thinking, planning, and decision making
(see Isen, this volume, for a review of this literature; see Schwarz, 1988, for a
somewhat different analysis).

For some reason, the claim that emotional responses occur in response to
processing new or discrepant information has been one of the more misunder-
stood assertions associated with cognitive theories of emotion (Isen, 1984;
Scherer, 1984; Sroufe, 1979). Positive emotions, in particular, are seen as not
Happiness

For a person to experience happiness, four dimensions must be detected or inferred from a precipitating event: First, some aspect of the event must be perceived as novel with respect to the ability to maintain, attain, or avoid a particular goal state; second, the inference must be made that a valued state has been achieved; third, an inference must be made about the certainty of attaining or maintaining the goal; that is, the person must believe that goal attainment is certain or that goal attainment has already occurred such that no further obstacles can hinder goal success; and fourth, a person must believe that enjoyment of the goal state or goal maintenance will follow from the outcome.

A prototypical way of thinking about the experience of happiness is to envision the transition from a negative to a positive state. Before the precipitating event occurs, the baseline thinking and behavior of an individual must be described. If we take those situations where people begin an emotion episode in a negative emotion state, several dimensions characterize their state. First, they have not yet attained the valued goal under consideration or they believe that a valued goal is threatened. Moreover, they believe that the probability of attaining the goal is not high.

A precipitating event then occurs causing or enabling the goal to be achieved. Happiness results when the following inferences are made: First, the event is encoded and seen as discrepant from what is known or believed. When an individual begins the emotion episode in a negative state, the discrepancy occurs because of the belief that goal achievement was not very likely. The fact that the goal has been attained or that goal attainment is virtually guaranteed violates expectations; that is, something unusual or unexpected has occurred. Attention is then focused on two different dimensions. First, an assessment is made as to whether or not the event was encoded properly, and second an appraisal is made about the relative certainty that a particular goal has been attained.

An example from one of our studies (Stein & Trabasso, 1989) illustrates this point. Five-year-old children were initially asked to imagine that their mother was not going to be able to read them a story before bedtime. They were told that they would just have to go to bed by themselves. Children were then asked: (a) how they would feel if this happened to them, (b) how intense their feelings would be (rating intensity on a 5-point scale), and (c) how sure they would be that their mother would not read them a bedtime story. In 92% of the cases, children said that they would feel sad because they could not hear a story and would have to go to bed alone. Their feelings were very intense, 4.5 out of 5. In rating the certainty of the fact that they were not going to get a story read to them, the average score was 1.5, with 1 being certain that no story would be read and 5 being certain that a story would be read to them.

After answering these questions, children were then told that their mother had

requiring the processing of novelty and are thought not to result in the interruption of ongoing cognitive activity. Moreover, positive emotions are thought to differ from negative emotions in being facilitative rather than disruptive of ongoing thought and behavior (see Isen, this volume; or Averill, 1979; Stroutte, 1979; for a discussion of these claims).

In a recent theoretical paper (Stein & Levine, 1987), we argued that both classes of emotional responses result from the processing of novel information. Moreover, both positive and negative emotions could be seen as facilitative or disruptive of ongoing thinking, depending on the context in which the emotion is experienced. Some of the variables regulating thinking once an emotion has been experienced are: the importance of attaining or maintaining the goal under consideration, whether or not plans have been formulated to cope with goal failure or success, whether or not immediate action is required; whether or not all goal-related activities have been accomplished; and whether or not the full implications of the goal-outcome relationship have been understood. These dimensions not only regulate attention and thinking during emotional experience, but they also regulate the intensity with which an emotion is experienced.

To say that negative emotions disrupt thinking or that positive emotions facilitate thinking is to conclude that the class of positive emotions versus those of negative emotions have some general property in common that would serve to influence subsequent thinking and planning. Moreover, the experience of positive versus negative emotion would be independent of the context that evoked the emotion. Although positive emotions are associated with reactions to goal success whereas negative emotions are evoked in response to goal failure, the thinking and reasoning in positive and negative emotional episodes is significantly constrained by the importance of the goal being considered and by the quality of inferences made about a goal in relation to other goals.

We now describe the evaluation and planning processes associated with the emotions happiness, sadness, anger, and fear (a more detailed description can be found in Stein & Levine, 1987). We have chosen to focus on only four emotions in order to give an in-depth description of each emotion. Our goal is to advance a theory about the process of experiencing an emotion and to speak to issues concerning the thinking and reasoning during an emotional episode.

We begin with a description of happiness to illustrate how it depends on the recognition of discrepant information, and how different types of "happy" experiences can either disrupt or facilitate thought and behavior. Moreover, we discuss the somewhat contradictory claims of Isen (this volume) and Schwarz (1988), who on the one hand claim that happiness leads to more creativity (Isen, this volume) and on the other that happiness leads to mindless, less analytical behavior (Schwarz, 1988). Finally, we show how an analysis of goal hierarchies and goal conflict is essential to understanding the representation of this emotion.
thought about it again and that she was going to read them a story because she was able to get more of her chores done than expected. Children were asked what their first thoughts were about this event. Approximately 96% of the children said they would feel really happy because they loved stories and were glad that their mother changed her mind. Thus, for the clear majority of children there was a rapid shift from believing that goal attainment was at a very low probability (1.5) to believing that they would really attain their goal (4.5).

The other 4% of the children did not experience as significant a shift in certainty ratings. Their scores went from 1.6 to 3.5 on the certainty scale. These children first focused on whether or not their mother would really be able to get her chores done in time for the story. Thus, once the uncertainty of goal attainment was established in the beginning of the episode, a few children did not automatically believe that goal attainment was certain. When explicitly asked about how they felt when their mother said she would read them a story, these children said they felt okay but would wait to see if she really read them a story. None spontaneously expressed happiness, and when pressed explicitly about their feelings, most said they felt nervous or “jittery” or didn’t know how they felt.

These data illustrate that happiness is expressed when expectations about the probability of goal success are violated. However, children must also update their beliefs about the certainty of goal success if they are to experience happiness. If they are able to change their beliefs, then happiness will be expressed. And when they talk about being happy, children almost always focus on being able to enjoy the activities associated with goal fulfillment. If children do not believe that goal attainment is certain, then a lower-level anxiety response is evoked. Thus, the perception of certainty appears to be a necessary component to the expression of happiness.

Happiness does not necessarily require that people initially be in a negative emotion state. Individuals can make the transition to a happy state by first being in a more neutral state or by experiencing surprise or interest, signaling the formation of a new representation. However, once the representation is constructed and inferences are made about the success and the certainty of goal attainment, happiness is experienced.

Situations also exist where the experience of happiness intensifies. For example, suppose a person has just achieved an important goal and experiences a state of happiness. Suddenly, another event occurs to ensure the achievement of other valued goals. In this case, the emotion of happiness should intensify. The increase in intensity is due to the unexpected attainment of additional desired goals, some of which may be more valued than those originally attained. For example, in one of our studies, (Stein & Trabasso, 1989), 5-year-old children were told that they were to imagine that their teacher brought a new toy to class every week and that they got an hour to play with it by themselves. Children responded to this initial situation by giving almost unanimously happy responses, with an average of 4.3 on a 5-point intensity rating scale.

The children were then told that the teacher decided that they could take the toy home and keep it, because she knew how much they liked the toy. After acknowledging their surprise at such an event, 94% of the children expressed happiness about being able to take the toy home. The average intensity rating rose to from 4.3 to 4.9. Moreover, when asked if they were just as happy after getting the toy to take home, more happy, or less happy, 96% responded with more happy. When asked whether or not they expected the teacher to give them a toy, 94% said that they never thought she would do such a thing.

What we have shown so far is that fulfilling goals unexpectedly is sufficient to evoke happiness. Accomplishing additional goals unexpectedly increases the intensity of happiness. The question remains, however, as to whether novelty is necessary to induce happiness once inferences have been made about the achievement of a valued goal. In an attempt to answer this question, we asked 5-year-old children to respond to situations where habitual positive activities were repeated. Children were probed about their feelings and expectations the first time the teacher brought a new toy, the second time, and the third time. In all these instances, the children were told to remember that each time the teacher brought a toy, it would be different from the one before. In these situations, 80% of the children gave the same emotional response (happiness) over all three situations, and their intensity ratings remained the same (4.5). When asked why they would feel happy, over 98% explained their emotion by saying they would get to play with a new toy. Thus, the introduction of a new toy each time served to maintain the initial intensity rating of these children.

Children were then asked how they would feel if their teacher brought the same toy to class the first week, the second week, and the third week. In collecting this data, we took care to introduce the events sequentially as they would occur in a real-world environment. Again, 92% of the children said they would be happy the first time, with a mean intensity score of 4.7. After trial two, 75% said they would be really happy, with a mean intensity score of 3.5. On the third trial, only 20% said they would be really happy, with a mean intensity score of 2.8. Those children who did not express happiness said that they wouldn’t feel anything or that they would become bored. The reason given for these affective responses (or lack of a response) was that sometimes they got tired of playing with the same toy and they needed to switch to another one.

Thus, we propose that when continued exposure to an event results in an emotional response at the same intensity level as the initial response, some degree of novelty is still being processed. However, as people incorporate the novel aspects of a stimulus and build a more stable representation of the event (i.e., the event becomes predictable and responses to it automatic), the emotional response decreases in intensity, eventually resulting in a state where attention is no longer focused on the event. These changes are similar to those described in studies of habituation and adaptation to a stimulus, where subjects become immune and almost unaware of certain sensations. Although our studies are still
in the preliminary stages of development, they speak to the necessity of considering more seriously the role of repeated exposure on ratings of novelty, predictability, pleasure or pain, emotion, and intensity of the felt emotion. It is in the further understanding of adaptation phenomena that we will be able to determine whether or not novelty is necessary for the evocation of an emotional response.

Positive emotions do not necessarily facilitate thinking any more than negative emotions. Many studies have attested to the fact that positive mood states provoke more divergent thinking than negative emotions (see Isen, 1984, 1987, this volume), but that negative mood states, such as anger, lead to a greater degree of vigilance and analytical thinking than positive emotions. Thus, both positive and negative moods have been shown to facilitate thinking, depending on the nature of the thinking processes measured.

Our interpretation of these findings, however, is somewhat different from those of Isen (this volume) and Schwarz (1988). Although both these investigators have established robust findings with regard to how mood state affects subsequent thinking, we argue that both positive and negative emotions can be used to induce divergent or analytical thinking, and both classes of emotion can facilitate or hinder subsequent processing of new information. The important variables are the understanding and decision-making processes associated with the event that caused an emotional response and the thinking focused on coping with the emotion (see Folkman & Lazarus, this volume, on emotion-focused coping). We argue that the contextual constraints surrounding the induced mood state are as important as the particular valence of the mood.

Recent studies exploring the effect of mood state on subsequent thinking and decision making have focused largely on determining the effects of mood on subsequent thinking (Isen, 1984, 1987; Johnson & Tversky, 1983), without describing the thinking and decision-making processes that occur as a function of experiencing a particular emotion. The thinking that precedes a particular emotion, along with the intensity of the emotional experience, are powerful determinants of the ability to shift attention to new incoming information. For example, certain classes of “positive” events, like winning 40 million dollars in a lottery, are truly disruptive, as well as exhilarating. The probability of ever attaining this goal is small, and the number of life goals affected is enormous. If this event occurred before the presentation of some other cognitive task, we doubt we would see any facilitative effects of the happy state, including divergent thinking. In fact, we doubt that an experimenter could even get a subject’s attention were this event to occur. However, if the event resulting in a positive emotion did not relate to other important life conditions and did not require continued attention to the emotion-eliciting event, then the focus of attention could readily shift to a new task.

Similar comments can be made about negative emotions. Thinking about a newly introduced task will be facilitated or disrupted depending on the type of prior goal obstructed, the value of the goal, and the complexity of the planning activities that result as a function of goal failure. In fact, if the experimental task required finding a solution to the problem that elicited the emotion in the first place, negative emotions might well facilitate performance on the task, especially in regard to divergent thinking. For example, one of the first steps in a problem-solving sequence is often devoted to “brainstorming” or generating many possible alternatives that might lead to a solution. The activation of this strategy is often the direct result of goal failure on the first attempt at a solution.

The important point in regard to the effects of happiness on subsequent thinking is that individuals typically construct plans to maintain the goal that has been achieved. They also attempt to maintain the positive emotion state associated with the successful outcome. The structure and content of some positive outcomes, however, are simpler than others. Figures 3.1 and 3.2 illustrate the different planning sequences accompanying two different positive outcomes. The first example is taken from the Stein (1988) corpus of stories children have generated in response to different stems. The second is taken from several newspaper articles about the Chicago winner of the 40 million dollar lottery. In the first example (Fig. 3.1), the plan is simply to participate in an activity that ensures the maintenance of the accomplished goal. We see this type of plan generated by young children when we give them a toy that they really desire. Their primary plans are to play with the toys and keep them close by for future play. In these situations, the outcome does not lead to consideration of any other goal except one of enjoyment.

In other situations, the achievement of the first goal is simply the first step in achieving more important goals. There are times when a person must accomplish a series of subgoals to achieve the superordinate goal. Happiness may be associated with the attainment of each subgoal. However, knowledge that the positive state is transitory unless other conditions are fulfilled results in attention to the new conditions that must be fulfilled.

Figure 3.2 illustrates the complexity associated with winning a lottery. Discovering that you hold the winning ticket in a lottery is only the first step in receiving the money. Although hearing your number broadcast over the radio results in surprise and a shock-like response, intense happiness does set in. In fact, the feeling by a recent Illinois lottery winner was described as one of disbelief and then sheer joy, especially as the increasing number of goals that could be accomplished was reviewed.

However, soon after the initial expression of happiness, disbelief again sets in. The number is confirmed again by calling the radio station to verify that the number was heard correctly. Joy is again expressed but short-lived because instructions are then given about claiming the money. These procedures involve accomplishing certain subgoals, like not losing the ticket, meeting the deadline for turning in the ticket, and showing care in driving to the radio station. The effect of activating these subgoals is to evoke anxiety over losing the ticket or not making the deadline. The complexity of the scenario continues even when the
INITIAL STATE
Johnny lost favorite toy
Won't be able to play with toy car after dinner
Won't be able to play "Racer" with Mike

WISH ASSOCIATED WITH STATE
Wishes he could find it

FEELING STATE
Feels sad about loss

REACTION
Go to sandbox to "mope"

ACTION
Discovers toy underneath sandcastle he built

OUTCOME
Now he can play with the car
Now he can play "Racer" with Mike

EMOTION STATE
Feels happy

PLAN OF ACTION
To play with car after dinner
To play "Racer" with Mike

ACTION
Carries out plans of action

OUTCOME
Successful

EMOTION STATE
Maintains state of happiness

FIG. 20.1. Simple episode.

ticket is handed in and the winner confirmed. The lottery winner's parents are contacted because they put up some of the money for the ticket, and decisions need to be made as to how the winnings will be divided. Again, happiness in interleaved with attention to other goals that need to be accomplished as a result of winning. Thus, the question of context or framing becomes an important concern in making predictions about the effect of different emotions or mood states on subsequent thinking.

Our position also differs from that of Bower (Bower & Cohen, 1982), who proposed that the induction of specific mood states results in the activation of memories highly similar to the one induced by the emotion. From this point of

20. MAKING SENSE OUT OF EMOTION

INITIAL STATE
Mike bought lottery ticket
So did one million others
Does not expect to win

WISH ASSOCIATED WITH STATE
Wants to win lottery
Would not have to work
Could go to college
Could get married
Could buy house for parents
Could start own business

PLAN OF ACTION
To find out if he won

ACTION
Listens to radio

OUTCOME
Numbers match his ticket

EMOTION STATE
Happiness, combined with surprise and startle

LIST OF GOALS AND EVENTS THAT ARE EMBEDDED IN LEARNING OF WIN
1. Check ticket again to make sure of accuracy
2. Find out how to claim money
3. Find out how ticket can be protected until money is claimed
4. Be careful driving to lottery site so you won't get into an accident
5. Check with parents and brothers to see how winnings will be divided
6. Decide how many of you are going to the lottery board to claim the money
7. Go down to board to claim prize

PROBLEMS ARISING AS A FUNCTION OF THE LOTTERY WIN
1. Discord between parents and brothers as to how money should be distributed
2. Arguments with IRS about legality of dividing lottery win
3. Arguments with lawyers about necessity of a prenuptial agreement concerning lottery money
4. Discord at work because of status change and availability of new resources
5. Problems in starting a new business because of lack of skill in any particular area

GOAL COMPLETION AS A FUNCTION OF LOTTERY WIN
1. Got married
2. Split money with parents and brothers
3. Bought parents new house

FIG. 20.2. Complex episode.
able to maintain or reinstate a goal. Instead of running off an associative network that is driven by the emotion per se, people try to achieve a better understanding of the conditions that would lead to goal maintenance or reinstatement. Therefore, thinking subsequent to an emotional experience is likely to focus on the conditions that caused the emotional reaction, past experiences that allow predictions to be made about the probable consequences of the event, memories of successful strategies adopted in response to similar situations in the past, and an assessment of the outcome of those strategies.

We also assume that as people succeed or fail to attain valued goals, they learn more about the conditions that lead to the outcome. They also change their beliefs and feelings about the people who took part in their emotional experiences. For example, as a function of winning the 40 million dollar lottery, Mike changed his feelings about many of his friends. A few of them decided to ask Mike for backing in a financial venture. When Mike refused, they reacted by completely ignoring him. The result was that Mike learned that they did not consider him a friend unless he would support them financially. Moreover, they tried to harm him by rejecting him. Mike felt devastated at the loss of these friendships, but at the same time the value of these friendships decreased. Mike no longer trusted any of them.

From these newspaper and magazine accounts, we developed a scenario that explained Mike’s feelings and reactions to the lottery in terms of the goals he wanted to accomplish before the lottery and after winning the lottery. The scenario contained the feelings Mike expressed and the plans that he actually carried out. Then we asked eight students to rank the importance of Mike’s goals before and after the lottery. We predicted a significant change in almost all importance scores given before and after the lottery. Before winning the lottery, the average ratings assigned to each of five goals on a 10-point importance scale, with 10 being the most important, were as follows:

1. Get Married: 7
2. Go to college: 8
3. Stop work: 9
4. Buy a house for parents: 5
5. Start own business: 4

Once the lottery was won, however, certain goals became more important and others became less important. For example, our scenario included the fact that Mike decided that the first thing he wanted to do was to get married, so his rating of getting married went from 7 to 10. He then decided that he didn’t have to go to college because he had enough money so that he didn’t have to worry about education or his future. Thus, the rating of going to college went from 8 to 2. Buying a house for his parents became very important as did his concern about their general welfare. The importance rating went from a 5 to a 9. Before the lottery, he was so preoccupied with his own growth and survival that he rarely devoted the time or effort into thinking about his parents except in a rather automatic “caring” fashion. Starting his own business stayed at a medium low level because being accepted as a “regular” guy became more important as a function of winning the lottery. Mike perceived that people at work began to treat him differently. He now had access to resources that few of them did. Moreover, he received a great deal of publicity about his win, including being written about in “People” magazine and “Good Housekeeping.” Thus, Mike felt a dramatic change in the feelings and attitudes people had toward him. His response to this change was to place a greater degree of importance on maintaining his present job, so the importance rating for stopping his job went from 9 to 3.

Thus, an event like winning a lottery changed the perceived importance attached to several different goals. Certain goals became more important in the sense that Mike really wanted to achieve these goals, and others became less important in that he did not have an immediate desire to see them accomplished. Some goals, like going to college, became very unimportant. In fact, for those goals that shifted dramatically in their level of importance, we must consider another issue: whether their value also changed.

Although the degree of importance and the degree of value overlap considerably, these dimensions are not isomorphic. In collecting our rankings, importance was defined by the question, “How much does Mike really want to accomplish this goal? How important is it that he accomplish this goal?” Although positive value would probably be imputed to most of Mike’s goals (i.e., “How much does he like doing this?”), this does not always have to be the case. Accomplishing a subgoal can be very important in maintaining a higher order goal, but true displeasure can be expressed in terms of how much the subgoal is valued. For example, before winning the lottery, Mike asserted that he hated his job and would do anything he could to quit. After the lottery, winning the acceptance of his friends became very important to him, and he chose to do it by maintaining contact with them through his job. However, he still hated his job. The problem was that he could not generate any other plan of action that would accomplish the superordinate goals that were important to him.

Although we are just beginning to describe the nature of value construction and that of shifting values, both these factors are important for theories of emotional understanding. The value imputed to a goal and the importance of achieving it organize and determine in part whether an emotional response is experienced and the plan of action associated with the emotional response. As we turn now to a description of anger and sadness, we illustrate again the centrality of values, value construction, and learning from negative outcomes. Moreover, we again show that when people experience loss or aversive states, the number of goals affected can vary dramatically. Thus, the consequences can be major in that several different goals are affected, or they can be minor in that one or two goals are affected.
Given that anger and sadness are similar in this regard, what differentiates them? According to our model (Stein & Levine, 1987, 1989) anger occurs when a person responds to a loss or aversive state by inferring that the obstructed goal can be reinstated. More specifically, people firmly believe that they can somehow initiate a plan to restore the original conditions that existed before a loss or an aversive state occurred. In these circumstances, attention is often focused on understanding the cause of the loss or aversive state so that an effort can be made to change the conditions resulting in the undesired state. Thus, anger often carries with it a desire not only to restate the goal but also to remove or change the conditions that led to goal blockage in the first place.

Unlike many other analyses of anger (Averill, 1979; Roseman, 1979, 1984; Weiner, 1985), in our analysis the perception of intentional harm or the presence of an animate agent is not necessary to invoke anger. Anger is expressed because a person experiences an unexpected loss, failure, or aversive state and refuses to accept being in the resultant state. Refusal here means that the person believes that somehow the conditions surrounding the loss or aversive state can be changed so that the unpleasant state no longer exists. Thus, almost any type of loss or aversive state can evoke anger when a belief about goal reinstatement exists.

The intentional harm component associated with anger may be a function of socialization. In most societies, anger is not conditioned because the plan accompanying anger is often destructive and harmful to others. In some societies, actions carried out under the influence of anger are often thought to indicate insanity (Averill, 1979; Tavris, 1982) or the lack of the ability to reason. Therefore certain forms of anger are acceptable only in young children who have not yet been accorded the status of a reasoning and thinking person (Lutz, 1985a, 1985b). However, when children reach the age of 6 or 7, they are taught that anger is a permissible emotion, but only under certain conditions. The distinguishing dimension that is used to teach children when anger can be expressed is directly associated with intentional harm (Lutz, 1985a, 1985b). In fact, in the Ifaluk society, two different words are used to talk about anger. One refers to anger evoked without reason, and the other refers to justifiable anger cause by an agent who meant intentional harm.

Although sadness and anger often occur in response to the same event, sadness is different from anger in two respects. Sadness is experienced when a person believes that a goal cannot be reinstated. Although people who experience sadness often desire to restate a failed goal (much like anger), the plan of action associated with sadness is one of goal abandonment or goal substitution. Here we make a distinction between the wishes that accompany an emotion and the plans of action that are activated by goal failure. When people suffer major losses such that they no longer have access to a valued state, such as the loss of a loved one, they soon recognize that no possibility exists for them ever to restate their goal (e.g., to regain the relationship in the literal sense). Under these conditions, however, the desire to restate the goal does not necessarily recede or become less important. Because a multitude of memories are associated with loved ones, the desire to have them back or to interact with them again often remains ever present. A good example of this desire was expressed by the comedian George Burns (1988), who confessed to the fact that once a month when he visited Gracie Allen’s grave he sat and talked to her about everything that was happening to him. In fact, he admitted that he had been doing this for 24 years, since Gracie had died. This is not uncommon behavior on the part of many individuals (Worden, 1982). The social condemnation that goes along with it, however, inhibits most individuals from expressing their real desires and thoughts.

In many instances, the uniqueness of a love object determines whether the desire to restate the goal abates. If the love object is deemed irreplaceable, the desire to recreate the original conditions before the loss remains strong. Although this type of desire is deemed unrealistic (i.e., the focus of attention is on the recreation of conditions that are no longer possible), positive value can be attributed to this type of thinking. By recreating previous situations that were highly valued, an opportunity exists to examine exactly what it was about the situation that proved to be so important. By focusing on these critical features, wishes and plans can gradually be constructed to substitute a goal for the permanently blocked goal.

Wishes and plans to abandon the goal can also occur. Many times, goal failure results in such intense distress, as well as sadness, that the goal is abandoned without a desire to restate or substitute a similar goal. For example, in many athletic competitions, the athletes who lose will not try to compete again. They feel that they’ve given the competition their best shot and interpret their losing as irrevocable under any condition. Thus, the goal to become the top athlete is permanently abandoned, and no future attempts are made.

So far, we have described the evaluation and planning processes associated with anger and sadness. One more phenomenon with respect to these two emotions deserves discussion. Not only do the same events provoke these two emotions, but often both emotions are expressed in reaction to a loss or aversive state. In our model, the expression of more than one emotion to a precipitating event is not only feasible but increasingly likely, especially as a function of development. The reason for the occurrence of multiple emotions is that a precipitating event can change the probability of attaining or maintaining more than one goal. Anger can be expressed in regards to one goal and sadness to another.

The prototypic context in which both emotions are expressed is one of loss, where the loss is brought about by intentional harm (Stein & Levine, 1989). For example, when Johnny found out that his friend smashed his favorite toy to pieces, at least three different emotional responses could be expressed: Johnny could be sad, angry, or both sad and angry. On the one hand, Johnny is sad because his favorite toy has been destroyed, and he feels that it is irreplaceable. Thus, even though he would like the toy fixed, he knows that it’s impossible to
repair it, so sadness is expressed. On the other hand, Johnny feels really angry because he recognized that his friend intentionally destroyed his favorite toy. In doing this, his friend violated either an unwritten or explicit code about what friends are and are not allowed to do. Moreover, the violation of this code resulted in direct harm, and Johnny perceived this act as a threat to other important goals. He also felt that his friend could repeat the harmful act in other situations.

Thus, loss caused by an agent intending harm generates changes in the status of several goals. One set of changes focuses on the loss of a valued object and the goals associated with its reinstatement. Another set of changes focuses on the relationship between Johnny and his friend. The violation of the “friendship” code results in the realization that Johnny cannot trust his friend in other situations. Moreover, the fact that his friend was responsible for breaking the toy evoked a desire to have the friend recompense him in some way. It is interesting to note that anger responses to irrevocable loss often involve getting the harmful agent to engage in some kind of behavior that promotes the substitution of a goal by the injured party. For example, Johnny’s response to the loss of his toy was to demand that his friend reimburse him for the cash amount of the toy. According to Johnny, the only way the friendship could ever be restored was for his friend to pay for the broken toy. Moreover, his friend had to “promise” that he would never again engage in another harmful act directed toward Johnny.

There are many instances of anger where the primary goal of the injured party is simply to destroy the agent who caused intentional harm. However, this is not necessarily the prototypic anger response (Tavris, 1982). For revenge strategies to be initiated, specific inferences must be made about the aggressor. The first concerns the value the victim places on the aggressor, and the second focuses on the degree of harm the aggressor can still inflict on the victim. If the victim believes that the aggressor will actively seek to carry out harmful acts in the future and if the victim believes that the aggressor’s behavior cannot be changed, then the solution of destroying the aggressor or destroying the aggressor’s power might emerge. Indeed, we can generate many examples of these solutions by examining intense family conflict, where the majority of violent acts are committed. In the prototypic anger situation, however, the goal of the victim is to reinstate the original conditions that existed before the loss or aversive state occurred (Stein & Jewett, 1986). The restoration of conditions focuses on both those that pertain to the loss (if possible) and to the relationship that exists between the victim and the aggressor.

To test many of these ideas, we (Stein & Levine, 1989) carried out an empirical study with 3- and 6-year-old children as well as a group of college students. The task for all subjects was to respond to several different events by thinking out loud and by answering questions that focused on the causes of three different emotions: happiness, sadness, and anger. The events used to elicit these three emotions were constructed to mirror four different types of goal–outcome relationships: (a) the attainment of valued states; (b) the avoidance of undesirable states; (c) the loss of a valued state; and (d) failure to avoid an undesired state. The valued states focused on acquiring or losing a favorite toy car or a puppy. Unpleasant states focused on having to eat a disliked food (spinach) or having to be outside when it was very cold. The type of event that caused these states also varied such that the end states resulted as a function of: (a) another person intentionally causing the outcome, (b) another accidentally causing the outcome, or (c) a physical event causing the outcome.

All subjects were asked a series of questions regarding their feeling states, their first thoughts after the event occurred, the reasons for their feelings, the type of wish they would have in response to coping with the situation, the plans they would devise to carry out, and explanations for their choice of actions. In other words, each subject was guided through all the parts of an emotion episode related to a causal theory of emotional understanding. Although many investigators have described theoretical constructs for examining the process of emotional experience, the specific processes that are actually carried out with respect to the encoding, representation, and retrieval of information have yet to be described. Thus, we chose to structure our interview to reflect the various processes associated with the sequence of representing and understanding emotional experience.

Figure 20.3 contains the proportion of anger responses reported in each causal condition (physical event, animate agent causing intentional harm, animate agent causing unintentional harm) for each type of negative outcome (loss versus aversive state). Anger was chosen more frequently in all conditions when the

![](image) FIG. 20.3 Proportion of responses in which anger was inferred in each causal condition and in episodes ending in loss and aversive states.
episodes ended with an aversive rather than a loss state. The type of causal agent, however, did affect the proportion of anger responses. When an animate agent intentionally or unintentionally caused the story protagonist to suffer a loss, anger responses were more frequent than when a natural event caused the loss. Thus, the mere presence of an animate agent was enough to increase the frequency of anger responses in loss states. When an intentionally harmful agent put the story protagonist into an aversive state, the frequency of anger responses increased significantly in proportion to the frequency in aversive conditions where accidental harm resulted. Thus, the concept of agency is important in ascribing anger to others, but the type of goal failure is also a powerful predictor of anger. Thus, our results are similar to those of Berkowitz and Heimer (1989), who contend that aversive events indeed prime anger, irritation, and hostility across a variety of contexts.

If anger is elicited by the perception that harm has occurred and that an unpleasant state exists, then the immediate goal will be to focus on the removal of the unpleasant state. Desiring a change in the existing conditions should be especially true in situations of an aversive painful nature. In fact, our results supported this hypothesis. When aversive states resulted and the emotion inferred was one of anger, over 76% of all subjects desired to reinstate the goal. However, the plans of action adopted were often associated with abandoning the goal rather than reinstating it. For example, in one of our scenarios, subjects were told that a protagonist would have to eat spinach for dinner because there was no other food in the house. Under these circumstances, the clear majority of subjects expressed anger at having to eat a food that was intensely disliked. On the other hand, most adopted plans of action where the protagonist ate the disliked food. When spinach was all there was to eat in the house, many subjects stated that the thought of not eating anything was worse than eating the spinach. Thus, in actuality plans to abandon the goal were enacted.

These data strongly suggest that the planning process associated with specific emotions is more complex than originally described. Although anger and sadness carry definite wishes of goal reinstatement, the plans that accompany the two emotions are often constrained by an assessment of how the desired plan of action will affect the achievement of other goals. If the desired plan will result in a more general failure experience such that more goals become unattainable, then the normal plan associated with an emotion will not be enacted. Thus, reasoning about possible conflict among goals becomes an important concern in future work on emotional experience.

Furthermore, what needs to be examined is the effect of repeated anger in situations where the aversive state continues over time. In our study, subjects had to make predictions about other people’s behavior when aversive states were experienced on a one-time basis. For example, our scenarios had protagonists having to eat spinach because of a snowstorm or because one’s mother forgot to buy a favorite food at the store. Although these aversive states were permanent,

in the sense that, for the moment, subjects chose to tolerate them in order to avoid other unpleasant states, it is unclear what would happen if subjects were exposed to aversive states on a continual basis. If someone had to eat spinach everyday and initially disliked it, the ensuing response might change from one of toleration to one where specific action was taken to end the aversive state. If no action could be taken, the option of not maintaining other important goals might be made. Under these conditions, anger responses could easily become ones of sadness.

CONCLUSIONS

The approach we are advocating in the study of emotion is one where the achievement of specific goals are tracked over time in order to assess how success or failure of one goal affects the maintenance of other goals. Moreover, the way in which subjects react to repeated success or failure must be assessed. Something is learned each time a person attempts to achieve a goal and either succeeds or fails. If subjects succeed at attaining a valued goal, the initial focus of attention is typically on the positive consequences that ensue from success. Moreover, a feeling of relaxation often accompanies positive feeling states because effort is no longer needed to plan for successful goal attainment. In fact, Schwarz (1988) proposes that happy states lead to rather mindless behavior. Happy people are not as evaluative of other people’s actions as angry people are. Moreover, assessing the conditions that led to goal success does not appear to be as frequent as when failure occurs.

These findings may hold for the initial period immediately following goal success. However, success also requires maintenance activities. When subjects realize that an effort has to be made to maintain valued goals, then an analysis of the conditions that led to goal success should be of central importance. If goal-related activities have not been successful, the initial focus of attention should be on attempts to understand and control the conditions that might lead to goal success. If, however, repeated attempts at goal attainment end in failure, the typical reaction might be one of assessing the consequences of failure rather than focusing on conditions that led to failure. What we are suggesting is that the degree of uncertainty associated with goal maintenance might regulate the type of thinking carried out subsequent to an emotional reaction rather than the valence of the expressed emotion.

Furthermore, different negative emotions such as sadness, anger, and fear have very different effects on subsequent thinking and reasoning activities. Although each of these emotions is defined as negative, each carries with it a different plan of action (Stein & Jewett, 1986; Stein & Levine, 1987). Anger and fear are both active emotions in that plans are oriented toward goal reinstatement or maintenance. However, the two are different. Anger tends to orient people
toward an assessment of the conditions that would result in a reinstatement of the goal. This desire often leads people to assess the conditions that actually caused goal failure so that any obstacle can be removed. Thus, thinking about angry situations tends to promote avoidant thinking.

Fear, on the other hand, is oriented toward maintaining valued goal states (Stein & Jewett, 1986). Specifically, self-preservation, whether psychological or physical, is at stake. Thus attention is focused primarily on methods to ensure self-preservation. Often, this desire leads to a plan of removing the self from the threatening situation. Therefore, the conditions that led to the threatening situation are not assessed. Rather, plans for preventing harm are central. Given that the focus of attention is different for fear and anger, we are curious as to how each of these emotions would affect subsequent thinking on tasks unrelated to the experience of the emotion. Moreover, we would ask how the immediacy of formulating a plan of action in each emotion state would affect subsequent thinking and reasoning.

And finally, the intensity of the emotional reaction should be an important predictor of thinking and reasoning. Intensity, as it is currently defined (Mandler, 1975, 1984), is most often associated with the importance of the goal at stake. However, the amount of effort that needs to be expended in carrying out goal activities, as well as the necessity to act quickly, may also be pertinent in assessments of intensity. The important point, however, is that the intensity of an emotional reaction restricts the amount of attention that can be given to subsequent thinking activities. As Rachman (1978) has noted, the intensity of a fear response precludes processing any extraneous information to a great extent. Rather, attention becomes narrowed to specific dimensions of the situation related to expected impending harm.

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The Emotion-in-Relationships Model: Reflections and Update

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My invitation to participate in this volume celebrating the redoubtable scholarship of George Mandler stems, no doubt, from my application and slight extension of his "interruption theory of emotion," as he originally outlined it in Mind and Emotion (1975). The application was to emotion as it occurs, or sometimes inexplicably and disappointingly fails to occur, in the context of a close relationship with another person and the extension (i.e., the "completion hypothesis") was intended to account better for positive emotions (Berscheid, 1983).

In the few pages allotted to me to pay my respects to George Mandler and his works, I should like, first, to sketch the background events that led to my discovering Mind and Emotion a decade or so ago. Second, I shall adumbrate the emotion-in-relationships (E-in-R) model and discuss the indirect influence it and George's theory of emotion had upon the very conception of what a close relationship is, and thus the approach many of us are now taking to the systematic study of interpersonal relationships. And, finally, I will describe some of our efforts to test the E-in-R model and the validating findings that have accrued to its credit—and so also to the credit of its "grandfather," interruption theory. It is this last account, of course, that is most important because true homage to another's intellectual contribution to the scientific enterprise is always paid in that most valuable of coins, empirical elbow grease.

SEARCHING FOR ANSWERS ABOUT LOVE AND RELATIONSHIPS IN THE SWAMP OF EMOTION

In the late 1970s and early 1980s, one could discern only faint glimmers of the surge of emotion theory and research that was shortly to take place and that continues in intensity and volume to the present day. Emotion was still regarded