

**GOVERNMENT ARTS COLLEGE (AUTONOMOUS)  
COIMBATORE-18**

**DEPARTMENT OF PSYCHOLOGY**

**STUDY MATERIALS**

**18MPS11C-HISTORY OF PSYCHOLOGY**

**UNIT – V : EMOTION**

Premodern history of emotion – Themes in a modern history of Emotion – Two distinct psychologies of emotion – A future history.

**UNIT-5**

**EMOTIONS**

Emotion: A jungle, not a garden. One dictionary definition of a jungle describes it as a confused mass of objects, whereas a garden is a rich, well-cultivated region. The history of emotion is confused and disordered, and cultivation has been at best haphazard. I will attempt to tell the story of how the jungle grew, hoping to do some cultivating and weeding in the process. When we emerge from the jungle, the reader may have some notion how to proceed with further cultivation.

The attempt to understand human emotions has been split by two apparently contradictory tendencies. On the one hand, emotion as a topic has been traditionally part of any psychology of mind—it was not possible to try to explain people without explaining emotion. On the other hand, there has been from the beginning a lack of agreement as to what exactly is meant by “emotion,” nor is there any discernible centripetal movement toward a consensual definition in contemporary thought. The result is that even if one believes in the notion of human progress, there is little evidence of a focus or consensus in the psychology of emotion. Themes are often repeated and old battles resurrected, but emotion lags behind such psychological success stories as found in memory, vision, early development, hearing, attention, and so forth. There is a web of directions, not a single path, in the

history of emotion. I shall briefly sketch the prehistory of emotion, describing some of the highlights that led up to the nineteenth century and the adoption by psychologists of modern, “scientific” attitudes and goals. The advent of a determinedly scientific psychology and the age of modernism occupy prominent late-nineteenth-century positions that coincide with a major shift in the psychology of emotion—the contribution of William James. Consequently, I let James lead us into the modern age and its two dominant—and as yet unreconciled—traditions of the organic and mental approaches to emotion. I end with a discussion of the contemporary scene and its precursors. A more extended treatment of such topics in the history of emotion as animal studies, the neurophysiology of emotion, phenomenology, and literary allusions may be found in such important secondary sources as Gardiner et al. (1937) and Ruckmick (1936). For a discussion of emotions in the context of literature and social history, but not psychology, see Elster (1999).

## **PREMODERN HISTORY OF EMOTION**

Discussions of the emotions in pre-Socratic and later Greek thought centered, like so many of its discussions of complex human consciousness, on their relation to the mysteries of human life and often dealt with the relevance of the emotions to problems of ethics and aesthetics. Secondarily, their concerns addressed questions of the control and use of the emotions. That approach often stressed the distracting influences of the emotions—a theme that has continued in a minor key to modern times. To the extent that this distracting effect was due to the bodily, somatic symptoms of the emotions, the George Mandler. Parts of this chapter have been culled from previous work on the topic, such as Mandler (1979, 1984, 1990, 1999). I am grateful to Tony Marcel for comments on an earlier draft, though space limitations prevented me from taking all of his comments into account. Greeks approached emotion with a form of double-entry bookkeeping, dealing both with psychic and somatic aspects of emotional phenomena (Brett,

1928). Aristotle was the exception to his times when he considered feelings as natural phenomena, and his descriptions of the individual passions remain a model of naturalistic observation. But Aristotle did not allow for simple, pure affective processes. As he so often did, Aristotle sounded a more modern note when his description of emotion required the cognitive elements of a percept, an affective component of pleasantness/unpleasantness, and a conative (motivational) effort (Hammond, 1902). Post-Aristotelian philosophy devoted much effort to various analyses of the emotions, yet Aristotle continued to dominate much of the thought of the Middle Ages well into the fifteenth century. The age of the Scholastics was often preoccupied with commentary and theological speculations and frequently relegated emotions to an expression of animal spirits, very distinct from the moral spirit and intellect with which the ancients had wrestled. The main contribution to the history of thought about emotion came from the great systematizer, Thomas Aquinas. He also asserted that emotions disturb thought and should be controlled, but his classifications barely survived to the Renaissance. On the whole, the period of theological dominance was best described in the late sixteenth century by Suarez (1856): *Pauca dicunt et in variis locis* (“They say little and do so in various places”).

The Renaissance came late in the history of the emotions, though there was an early whiff of fresh air in the early sixteenth-century work of the Spanish philosopher Juan Luis Vives, who explored and described the different passions (emotions) with empirical concern and clarity. However, the important shift came with René Descartes and his publication in 1649 of his *Les passions de l'âme* (*The Passions of the Soul*) (Descartes, 1649). In the spirit of his day, he started afresh, postulating six primary passions, with all the rest constructed of those six: wonder, love, hate, desire, joy, and sadness. This fundamentalist approach to constructing emotions is still with us, though Descartes'

love, desire, and wonder have been substituted by other, more contemporary, states such as disgust, guilt, and shame.

Later in the seventeenth century Baruch Spinoza (1677/ 1876) broke with the still popular view of the emotions as bothersome intrusions and insisted that they be seen as natural and lawful phenomena. He is one of the major expositors of the notion that the passions are essentially conative, that is, derived from motivational forces, just as Aristotle and Hobbes had asserted before him. For Spinoza the passions—pleasure, pain, and desire—are all derived from the drive to self-preservation, to maintain one's own existence. By the late eighteenth century, Immanuel Kant definitively made feelings into a special class of psychological processes—a third mental faculty added to the other two of knowing and appetite (Kant, 1800). Kant, who dominated the early nineteenth century in philosophy in general, also did so in the realm of feelings and emotion. His view of feelings/emotions as a separate faculty was maintained well into the twentieth century, as was his distinction between (temporary) emotions and (lasting) passions. With the nineteenth century, classification became a major theme of the new scientism, and the emotions followed suit. For example, Wilhelm Wundt's system went from simple to complex feelings and then to true emotions. Complex emotions were analyzed in terms of a half dozen or more types and tokens of feelings (Wundt, 1891). Two other major contributors to the nineteenth-century classificatory ambience were Alexander Bain and James McCosh. Bain, arguably the last great figure of British associationism, contributed to the enumerative wars by naming love, anger, and fear as primary emotions, but he also muddied the waters by needless multiplication of the list of emotions and introducing such unusual entries as emotions of property, power, and knowledge (Bain, 1859/1875). Another classifier popular in the United States was McCosh, a member of the Scottish school of psychology, who divided the field into appetences (the desire for specific objects), ideas,

excitements, and organic affections (pleasant and unpleasant bodily reactions) (McCosh, 1880).

All these rather evanescent attempts were brought to an end by the James-Lange-Sergi theory, to which I shall return shortly. But first it is necessary to describe the landscape of the new century that William James introduced, to show how multifaceted the psychology of emotion became and how confused it may have looked, just as we enter another century with as many, and sometimes as different, theoretical positions as marked the twentieth. The best illustration of the confusion of the new century is shown in three volumes of symposia on "Feelings and Emotions" (Arnold, 1970; Reymert, 1928, 1950). The 101 contributions to the three volumes represent one or two dozen different theories of emotion. Are we to follow each of these many strands through the century? Can we select one or two preeminent survivors? Probably not, because too many of these different strands still have respectable defenders today.

All we can do is to pay attention to those that appear to be cumulative, persistent, and important. Some sense of the sweep of the past 70 years is conveyed by the participants in the three symposia. The 1928 volume conveys a definite sense of history. It is full of the great names: Spearman, Claparède, Bühler, McDougall, Woodworth, Carr, Cannon, Bekhterev, Pieron, Janet, Adler, and many more. The 1950 volume has a modern flavor; there are glimpses of the cold war and of the hope for psychology and its applications just after World War II. The 1970 volume seems to be in a place-holding position. Many of the names that will make a difference in the late twentieth century appear, but no discernible theme is apparent. There is also some philosophical speculation, strangely out of place, written by both philosophers and psychologists with a charming disregard of past or present evidence. The best summary of the dilemma of the field was provided by Madison Bentley in the 1928 volume. He knew then what many psychologists still fail to accept today, that there is no commonly or

even superficially acceptable definition of what a psychology of emotion is about. And he concludes: “Whether emotion is today more than the heading of a chapter, I am still doubtful.”

## **THEMES IN A MODERN HISTORY OF EMOTION**

Modern concerns with problems of emotion date from the publication of William James’s and Carl Lange’s papers. William James’s major contribution to psychology in his theory of emotion really had very little to do with the problem of emotion as such. At the end of the nineteenth century, psychology was still obsessed with its own “atomic” theory. Complex ideas and thoughts were made up of nuclear ideas, feelings, and thoughts. We find this fundamental notion in Wundt just as much as we found it in John Locke. If anything characterizes modern theoretical attitudes, it is an approach common to practically all of the various schools, trends, and points of view. Nearly all would subscribe to the notion that the role of modern psychology is to describe the processes and mechanisms that produce thoughts, ideas, actions, and feelings. Whether the stress is on the production of these “mental” events or on the production of behavior and action, the important point is that the basic building blocks are theoretical mechanisms and processes rather than atomic, undefined mental contents. It was William James who promoted the change from the content to a process approach. It is this approach that motivated his insistence that emotional consciousness is “not a primary feeling, directly aroused by the exciting object or thought, but a secondary feeling indirectly aroused” (James, 1894, p. 516), though he does consider as primary the “organic changes . . . which are immediate reflexes following upon the presence of the object” (p. 516). He contrasts his position with that of Wundt, who insisted that a feeling (*Gefühl*) was an unanalyzable and simple process corresponding to a sensation.

The fundamental distinction between feeling or emotion as a secondary derivative process and the view that feelings are unanalyzable provides

one of the main themes running through the history of the psychology of emotion. Over 100 years later, we still find some psychologists who search for “fundamental” emotions whose origin is often found in the common language and subtle linguistic distinctions among feelings, emotions, and affects. James considered such attempts purely “verbal.”

Another theme that defined the psychology of emotion, particularly in the United States, was the behaviorist insistence that conscious experience be abandoned as a proper subject of psychology. One of the results was that emotional behavior tended to be the sole target of emotion research during the second quarter of the twentieth century and that emotion in human and in nonverbal animals was studied at the same level. That made it possible to investigate emotional behavior in the cat and rat and to generalize that to human emotions. Finally, both the focus on observables and the James-Lange emphasis on visceral events made research on emotion almost exclusively a program of investigating visceral events and their concomitants.

Theories of emotion suffered the same fate as other theoretical endeavors in psychology. In the nineteenth century and before, they were primarily concerned with the explanation of conscious events. With the advent of Freud, the Würzburg school and its discovery of imageless thought, the Gestalt school in Germany, theoretical notions and particularly the emphasis on nonconscious events abounded. The movement to the (theoretical) unconscious went into decline in the United States during the behaviorist interlude to be resurrected with renewed energy after mid-twentieth century.

The “new” cognitive psychology—actually just a theory-rich psychology—postulated that conscious events were a secondary phenomenon and that most of the interesting theoretical events were not conscious at all but rather the unobservable background of activations and interactions (sometimes mapped into a neuropsychology) that made action and thought possible.

## TWO DISTINCT PSYCHOLOGIES OF EMOTION

There are two major traditions in the study of emotion. They are distinguished by a relative emphasis on central as opposed to peripheral processes, the former concerned with central nervous system mechanisms, the latter with peripheral reactions and particularly autonomic nervous system responses (see Schachter, 1970). A similar distinction is essentially a Cartesian one between mental and organic causes of emotion. Paul Fraisse (1968) calls the distinction “*les deux faces de l’émotion*”—the two aspects, or Janus-like faces, of emotion. One face is mental and intellectual—the organic **160 Emotion** events are seen as consequences of psychic events. While much of this line of thinking is tied to a belief in fundamental unanalyzable feelings, it was also the forerunner of another development—the conflict theories—that has a lengthy history going back at least 150 years to Johann Friedrich Herbart (1816), who saw emotion as a mental disorder caused by discrepancies (or what we would call today “conflicts”) among perceptions or ideas. The other face of emotion is organic. It also has a long history, primarily among the sensualists of the eighteenth century who wanted all experience to be built of nothing but sensory impressions and who stressed the effect of organic reactions on mental emotional consequences. The organic theorists insisted on physiological events, rather than thoughts, as the determiners of emotion.

In the course of discussing the organic/peripheral theories, we shall have repeated occasion to refer to autonomic and/or visceral changes. Unless otherwise noted, this usually refers to activities of the sympathetic nervous system (SNS). The autonomic nervous system (ANS) is, in contrast to the central nervous system, the other major subdivision of the body’s nervous armamentarium. The ANS consists of the SNS and the parasympathetic nervous system. The latter is primarily concerned with energy storage and conservation and is the



evolutionarily older of the two (Pick, 1970); the former deals with energy expenditure, reaction to emergencies, and stress and is characterized, *inter alia*, by increased heart rate and sweating. Discussions of visceral responses, here and elsewhere, usually deal with sympathetic activity. I shall follow Fraisse's distinctions and argument and start with the organic/peripheral and then return to the mentalist/ central position.

### **Peripheral/Organic Approaches to Emotion *James, Lange, and Sergi***

William James's presentation of his theory of emotion came in three installments: First, in an 1884 article in *Mind*, then in 1890 in Chapter 25 of his *Principles of Psychology*, and finally in 1894 in the extensive reply to his critics (James, 1884, 1890, 1894). I start with his bald statement in the 1884 article: "My thesis is . . . that the bodily changes follow directly the Perception of the exciting fact, and that our feeling of the same changes as they occur IS the emotion" (p. 189). James's emphasis on "organic" experience is illustrated when he notes that we might see a bear and decide it would be best to run away, or receive an insult and consider it appropriate to strike back, but "we would not actually feel afraid or angry." In illustration, he noted that it would be impossible to think of an emotion of fear if "the feelings neither of quickened heartbeats nor of shallow breathing, neither of trembling lips nor of weakened limbs, neither of goose-flesh nor of visceral stirring, were present" (1894, p. 194). The bodily changes James wants to consider include running, crying, facial expressions, and even more complicated actions such as striking out. Whereas James did say that certain emotions were tied to specific visceral patterns, he did not confine himself to them. His insistence on general bodily changes sets him apart from Lange, who had said that emotions were the consequences of certain "vaso-motor effects." By 1894, James specifically rejected that position when he noted that "Lange has laid far too great stress on the vaso-motor factor in his explanation" (p. 517).

James kept looking for crucial tests of his theory, but even in cases of congenital analgesia (who have no known pain sensations), he found it impossible to be certain of their emotional consciousness. He was concerned with the verbal problems and traps in existing and popular efforts to establish a taxonomy of emotion: “It is plain that the limit to [the number of emotions that could be enumerated] would lie in the introspective vocabulary of the seeker . . . and all sorts of groupings would be possible, according as we choose this character or that as a basis. . . . The reader may then class the emotions as he will” (1890, p. 485). Lange said very much the same thing and, antedating Wittgenstein by several decades, spoke of the reasons for the overlap among various conceptions of emotions as due to certain “family resemblances” that one can find in “popular speech as well as in scientific psychology.”

Lange’s little book appeared in Danish in 1885, and it was the German translation by Kurella that James saw shortly thereafter and that has formed the basis of all further expositions of Lange’s work (Lange, 1885, 1887). Lange’s book was not translated into English until 1922, when it appeared in a volume edited by Knight Dunlap, together with James’s paper in *Mind* and the 1890 chapter (Dunlap, 1922).

Exactly what was it that Carl Lange said about emotion? He started his treatise by saying that the old conceptions of the emotions were wrong and must be reversed. But Lange was somewhat reluctant to state exactly what that reverse implies. In the clearest passage on that topic, he said that his theory holds “that the various emotional disturbances are due to disturbances in the vascular innervation that accompanies the affections, and which, therefore, makes these vaso-motor disturbances the only primary symptoms” (in Dunlap, 1922, p. 60). In his introductory passage, Lange had started out to explore the effects of the emotions on bodily functions but had found that goal to be very difficult, if not impossible, to achieve, “simply because the question had been put in reverse order.”

There is a problem of interpretation of James's and Lange's "perceptual" antecedent of visceral disturbance. We are told repeatedly that particular perceptions produce certain bodily effects, which then in turn are perceived and experienced as "emotions." What we are not told is how these perceptions of external events produce the bodily effects. James says that external events can give rise to bodily, visceral changes without any awareness of the meaning and without interpretation of these events. For example, he finds it "surprising" that one can have mental events without conscious accompaniments, which then precede the bodily reaction.

But then the theory falls apart because it is the intervening mental event that gives rise to the organically determined emotion. There is nothing surprising about this in 2002 with our current concern with cognitions, the "intervening" interpretive events. If James is given some of the major credit for introducing a constructivist analytic modern psychology, it is because he was the most visible carrier of the idea. Others had similar notions. The most visible, apart from Lange, was the Italian psychologist Giuseppe Sergi, who wrote extensively on emotion and published his own *Nuova teoria della emozioni* in 1894 and 1896 independently of James and Lange (Sergi, 1894, 1896). Sergi insisted that the brain added only the conscious aspect to the emotions, all other aspects being the result of vasomotor changes. Dunlap (1922) specifically singles out the Australian Alexander Sutherland as the third discoverer of the James-Lange theory, although Sutherland, a philosopher, did not publish his independent version until 1898 (Sutherland, 1898), a version that was neither as clear nor as persuasive as James's. An even better candidate for a priority claim might be the philosopher Jacob Henle, whom James quotes repeatedly and approvingly. But these were the "others"—history is often unkind.

To understand the tenor of the times, consider Wundt's critique of the James-Lange theory (Wundt, 1891). Dealing with Lange's theory, Wundt called it a psychological pseudoexplanation that tries to explain

away psychic facts with physiological observations. Instead, Wundt starts with the unanalyzable feelings that alter the stream of ideas. For example, the unanalyzable feelings of “fear” or “joy” can influence the current stream of ideation, encouraging some, discouraging some, or inhibiting other ideas. This altered stream of ideas produces a secondary feeling as well as organic reactions. And the organic reactions produce sensory feelings that are added to or fused with the preceding feeling (or sensation) and thus intensify the conscious feeling. Modern counterparts of Wundt are continuing a search for specific fundamental emotions. Instead of looking for fundamental emotions, others, such as Arnold (1960), considered “appraisals” as primary, in terms of their unanalyzability. First comes the appraisal of something as “good” or “bad,” then follows the rest of the emotional train. Apart from the theological implications for the a priori ability to make judgments of “good” and “bad,” psychological theory in the twentieth century places more emphasis on the conditions and processes that give rise to such judgments.

The American attack on James came primarily from E. B. Titchener, who also started with fundamental feelings, though in a more complex form and with a somewhat less unanalyzable quality. The feeling is “in reality a complex process, composed of a perception or idea and affection, in which affection plays the principal part” (Titchener, 1896, p. 214). As far as the formation of an emotion is concerned, Titchener postulated that a train of ideas need be interrupted by a vivid feeling, that this feeling shall reflect the situation in the outside world (as distinct from inner experience), and that the feeling shall be enriched by organic sensations, set up in the course of bodily adjustment to the incident. The emotion itself, as experienced, consists of the stimulus association of ideas, some part of which are always organic sensations. For Titchener, sensations are truly based on external events and not “cognitive”; emotions occur in the presence of specific situations and conflicts.

None of the criticisms of James, piecemeal as they were, had much of an effect. The important and devastating attack came over a quarter century later from Walter B. Cannon (1914, 1927, 1929). Cannon used the attack on James to further his own relatively uninfluential neurophysiological theory, which postulated thalamically produced “feelings.” What did have impact was his evaluation of the James-Lange theory, which set the tone for the succeeding 50 years of psychological theory. Cannon’s major points were addressed to the question of visceral feedback as the basis for emotional behavior. Niceties as to whether Cannon’s target should be Lange’s emotional behavior or James’s emotional experience were forgotten in the light of the devastating and elegant content of Cannon’s attack. It consisted of five major points:

- (1) Even when the viscera are separated from the central nervous system, that is, when visceral arousal cannot be perceived, some emotional behavior may still be present.
- (2) There does not seem to be any reasonable way to specify visceral changes that James had maintained should differ from emotion to emotion.
- (3) The perception and feedback from autonomic nervous system discharge is so diffuse and indistinct that one must assume that the viscera are essentially insensitive and could not possibly serve the differentiation function that James’s position requires.
- (4) Autonomic nervous system responses are very slow, and their slow onset, on the order of 1–2 seconds, would suggest that emotion should not occur within shorter intervals.
- (5) When visceral changes are produced by artificial means—for example, by the injection of adrenaline—emotional states do not seem to follow as a matter of course.

History has been kinder to Cannon than to James. Cannon's first point turned out to be essentially correct. However, there is evidence that separating the viscera from the central nervous system significantly interferes with at least the acquisition of emotional behavior. Arguments have also been made that even in the absence of the viscera, there are other systems, including the skeletal system, that may subserve the Jamesian functions.

Cannon was quite right as far as points (2) and (3) are concerned; there is no evidence that different emotional states or behaviors are antecedently caused by different visceral states. Much heat has been generated by this argument in subsequent years, but still no causal evidence is available. Evidence that has been cited about the differential conditioning of various autonomic functions, or even differential responding in different parts of the autonomic system, is not relevant to this argument, since the Jamesian argument is about different *causally* implicated patterns of the autonomic system—different emotions are caused by different organic patterns. As far as point (4) is concerned, the argument is somewhat similar to point (1). Cannon is right in general, but other mechanisms such as conditioned skeletal responses and autonomic imagery may serve to bridge the gap and explain the phenomena, such as rapid reactions to painful stimuli or autonomic “perceptions” with very short reaction times, that the subjective evidence suggests. As for Cannon's fifth point, the evidence cited below shows that visceral changes produced by artificial means are not sufficient to produce emotional states, but that their presence certainly is an important condition for emotional experience in conjunction with other cognitive factors. In any case, Cannon's five criticisms were important enough to generate extensive and influential research on the points of disputation between James-Lange and Cannon.

### ***The Post-James Period***

The half century following James was primarily dominated by his approach but with a lingering concern about the kind of mental events that were responsible for the conditions that produced organic, and especially visceral, reactions and the nature of the perceptions that made for specific emotional qualities. All of these were attempts to find some way of bringing in the central nervous system. By 1936, Ruckmick had stressed the interaction of visceral and cognitive factors, and later Hunt, Cole, and Reis had specified how different emotions may be tied to specific environmental-cognitive interactions (J. Hunt, Cole, & Reis, 1958; Ruckmick, 1936).

The major antecedent for the next significant change in direction of emotion theory was an essentially anecdotal study by the Spanish physician Gregorio Marañón (1924), who found that when he injected a large number of patients with adrenaline, approximately one-third of them responded with a quasi-emotional state. The rest reported little or no emotional response and simply reported a physiological state of arousal. However, the patients who reported emotional reactions typically noted that they felt “as if” they were afraid or “as if” something very good was about to happen. In other words, they did not report the full range of emotional experience but something closely akin to it. Whenever Marañón discussed a recent emotional experience with his patients, such as a death in the family, the patients reported full rather than “as if” or “cold” emotion.

In part, these observations were the prolegomena for the Schachter and Singer experiments (1962) that changed the emotional landscape. Stanley Schachter (1971) put forward three general propositions: (a) Given a state of physiological arousal for which an individual has no immediate explanation, he will describe his state in terms of whatever cognitions are available. (b) Given a state of physiological arousal for which an individual has a completely appropriate explanation, no evaluative needs will arise and the individual is unlikely to label his feelings in terms of (any) cognitions available. (c) Given the same

cognitive circumstances, the individual will react emotionally or describe his feelings as emotions only to the extent that he experiences a state of physiological arousal. In other words, both physiological arousal and cognitive evaluation are necessary, but neither is a sufficient condition for the production of emotional states.

The main contribution of Schachter's group in the 1960s was in opening up a new era of investigation and theory. It redefined the psychology of emotion just as James had done 70 years earlier. The contribution was not so much the ingenious experiments but a straightforward statement of a visceralcognitive theory. Visceral action was setting the stage for emotional experience, but so was a cognitive evaluation, and emotion was the product of the two. Perhaps more important was the statement that general autonomic arousal rather than a specific pattern was the visceral concomitant of emotional experience. The consequences of this position have been a large number of experimental studies showing the influence of visceral and cognitive factors ranging from the instigation of aggressive behavior to the occurrence of romantic love.

In the first set of experiments, Schachter and Singer (1962) gave subjects injections of adrenaline under the cover story that these were vitamin compounds that would affect visual skills. Following the injection, subjects were either informed of the consequences of the injection (i.e., they were given correct information about the effects of adrenaline, but without having been told that they were given an adrenaline injection), or they were not given any information about the effects of adrenaline, or they were misinformed.

In the informed condition, they were told that they would feel symptoms of sympathetic nervous system discharge. In the misinformed condition, they were given a description of parasympathetic symptoms, none of which would be expected as a result of the adrenaline injection. Following the injection and the



various types of information, the subject was left in a waiting room together with another person who was ostensibly another experimental subject but who was actually a “stooge” of the experimenters. Then the stooge would engage either in euphoric behavior (playing with paper airplanes, playing basketball with the wastebasket, and engaging in other happy behavior) or in angry behavior (becoming more and more insulting, asking personal and insulting questions, and eventually leaving the room in anger). The results were essentially in keeping with the two-factor theory. The degree of information about the physiological consequences of the injection was negatively correlated with the degree of self-reported emotional state and with the degree of emotional behavior induced by the stooge’s behavior. Thus, the misinformed group, which presumably had the highest evaluative need because the information they had been given about the physiological effects and their actual experiences were uncorrelated, showed the greatest degree of self-reported euphoria as well as anger. The informed group, with no “need” to explain their state, showed the lowest degree of induced emotion. The ignorant group fell in between the two other groups. The impact of these experiments was theoretical rather than empirical. In fact, no exact replication of these experiments is available, and a variety of misgivings have been aired about them. With the Schachter experiments, the pure organic tradition came to an end, at least for the time being. Once it had been shown that the influence of visceral response depended on cognitive factors, purely organic theories had played out their role. The line from James and Lange was switched to a more cognitive track. However, even if purely organic theories seemed untenable, visceral-cognitive interactions still involved visceral response. I turn now to other evidence on the role of the autonomic nervous system in the production and maintenance of the emotions.

### ***Emotions and Variations in Peripheral/Visceral Activity***

A number of research areas are relevant to the James-Lange position on the importance of visceral activity. The most obvious is to produce an organism without a sympathetic nervous system, which should produce an absence of emotional behavior. Some animal preparations using immuno-sympathectomies (Levi-Montalcini & Angeletti, 1961) have been studied, but the results have been equivocal (Wenzel, 1972).

The most fervently pursued area of research has been in the hunt for visceral patterning. Once James had intimated and Lange had insisted that for every discrete emotion there existed a discrete pattern of visceral response, the search was on for specifying these discrete visceral antecedents of emotion. Unfortunately, some 90 years of search have proven fruitless. Before examining some of the purported positive pieces of evidence, we must be clear about the theoretical position involved. Specifically, it must be shown that some specific emotional experience is the consequence of (is caused by) a specific pattern of visceral response. For our current understanding of causal analyses, any experiment claiming to support that position must show at least that the visceral pattern occurs prior to the occurrence of the emotional experience. Mere demonstrations of correlation between emotion and visceral response are interesting but do not address the issue. The most widely cited study purporting to support the physiological specificity notion is an experiment by Ax (1953). Ax exposed subjects either to a fear-provoking or to an angerprovoking situation and measured patterns of physiological response to these two experimental “stimuli.” Both situations produced elevated levels of sympathetic nervous system response with some significant differences on a number of visceral indicators. I do not need to argue that this does not show any causal effects of visceral patterns. In fact, the question is: What does it show? We do not know, in the absence of extensive internal analyses and subjects’ reports, what specific “emotion” the subjects experienced.

To put the study in the proper historical perspective, it was done when psychology was still in the grip of the behavioristic approaches to emotion when “fear” and “anger” were defined by what was done to the subjects, not by what they perceived. In addition, the difference in visceral patterning was shown as the average pattern of response for the two groups of subjects. The kind of patterns that Ax found could have been a combination of a variety of patterns from each individual subject. Thus, with hindsight, we cannot even come to any correlational conclusion about this study. More important, subsequent attempts either to replicate or modify the study have either failed to replicate the study or to provide any evidence for the causal effect of visceral patterns.

The conclusions of a 30-year-old survey still hold: “Investigators have been unable to find an identifiable physiological change that corresponds to changes from one specific emotion to another,” but “there is an unspecific relation between the emotional state and physiological state” (Candland et al., 1977, pp. 31–32). There is no doubt that fulfillment of the James-Lange dream would have been a very pleasant conclusion to the search for specific emotions. But, although the hope remained, it was not to be. Dreams die hard. To those who still insist on a patterning approach, we are only left with

Bertrand Russell’s probably apocryphal response to the question of how he would react to being confronted with God after his death: “Lord, you did not give us enough evidence!” What about an “unspecific relation” between viscera and emotion, that is, a general autonomic response? Schachter’s studies provided one piece of evidence. The same physiological antecedent potentiated different emotions. It is also the case that widely different emotions show relatively little difference in physiological patterns. Here we need not go into the question of whether or not these patterns are antecedent to the emotional expression. If, with very different emotions, the patterns are similar, the argument can be made that it is highly unlikely the

different emotions depend on different patterning. In 1969, Averill showed that both sadness and mirth are associated with measurable visceral responses and that both of them seem to involve primarily sympathetic nervous system patterns. Averill found that two divergent emotional states produce highly similar sympathetic states of arousal (Averill, 1969). Patkai (1971) found that adrenaline excretion increased in both pleasant and unpleasant situations when compared with a neutral situation. She concludes that her results “support the hypothesis that adrenalin release is related to the level of general activation rather than being associated with a specific emotional reaction” (Patkai, 1971).

Frankenhaeuser’s laboratory (e.g., Frankenhaeuser, 1975) has produced additional evidence that adrenaline is secreted in a variety of emotional states. William James believed that patients who have no visceral perception, no feedback from visceral responses, would provide a crucial test of his theory. Parenthetically, we might note that this is a peculiar retreat from James’s position stressing any bodily reaction to the position of Lange, which emphasized visceral response. In any case, James insisted that these people would provide the crucial evidence for his theory—namely, they should be devoid of, or at least deficient in, their emotional consciousness. In that sense, William James initiated the study of biofeedback. He thought that variations in the perception of visceral response are central to the emotional life of the individual, and that control over such variations would provide fundamental insights into the causes of emotions.

The sources of the biofeedback movement in modern times are varied, but there are three lines of research that have addressed James’s problem, and it is to these that we now turn. One of them involved individuals who were victims of a cruel natural experiment—people with spinal injuries that had cut off the feedback from their visceral systems. The second approach has assumed that individuals may differ in the degree to which they perceive and can respond to their own

visceral responses. The third approach, in the direct tradition of what is today commonly called biofeedback, involves teaching individuals to control their autonomic level of response and thereby to vary the feedback available.

The first area of research, the “anatomical restriction” of autonomic feedback, is related to the animal studies with auto-immune sympathectomies mentioned earlier. In human subjects, a study by Hohmann (1966) looked at the problem of “experienced” emotion in patients who had suffered spinal cord lesions. He divided these patients into subgroups depending on the level of their lesions, the assumption being that the higher the lesion the less autonomic feedback. In support of a visceral feedback position, he found that the higher the level of the spinal cord lesion, the greater the reported decrease in emotion between the preinjury and the postinjury level. A subsequent study by Jasnos and Hakmiller (1975) also investigated a group of patients with spinal cord lesions, classified into three categories on the basis of lesion level— from cervical to thoracic to lumbar. There was a significantly greater reported level of emotion the lower the level of spinal lesion.

As far as the second approach of individual responsiveness in autonomic feedback is concerned, there are several studies that use the “Autonomic Perception Questionnaire” (APQ) (Mandler, Mandler, & Uviller, 1958). The APQ measures the degree of subjective awareness of a variety of visceral states. The initial findings were that autonomic perception was related to autonomic reactivity and that autonomic perception was inversely related to quality of performance; individuals with a high degree of perceived autonomic activity performed more poorly on an intellectual task (Mandler & Kremen, 1958). Borkovec (1976) noted that individuals who show a high degree of autonomic awareness generally were more reactive to stress stimuli and are more affected by anxiety-producing situations. Perception of autonomic events does apparently play a role in emotional reactivity.

Two studies by Sirota, Schwartz, and Shapiro (1974, 1976) showed that subjects could be taught to control their heart rate and that voluntary slowing of the rate led to a reduction in the perceived noxiousness of painful shock. They concluded that their results “lend further credence to the notion that subjects can be trained to control anxiety and/or pain by learning to control relevant physiological responses” (Sirota et al., 1976, p. 477). Finally, simulated heart rate feedback—playing a heart rate recording artificially produced and purported to be a normal or accelerated heart rate—affected judgmental evaluative behavior, and Ray and Valins showed that similar simulated heart rate feedback changed subjects’ reactions to feared stimuli (Valins, 1966, 1970; Valins & Ray, 1967). The work on variations of autonomic feedback indicates that the perception of autonomic or visceral activity is a powerful variable in manipulating emotional response. Given that the nineteenth century replayed the ancient view that organic/visceral responses are bothersome and interfering, and at best play some incidental mediating role, the mid–twentieth century provided evidence that that old position does not adequately describe the functions of the visceral reactions. The currently dominant notion about the function and evolution of the sympathetic nervous system has been the concept of homeostasis, linked primarily with W. B. Cannon.

In a summary statement, he noted: “In order that the constancy of the internal environment may be assured, therefore, every considerable change in the outer world and every considerable move in relation to the outer world, must be attended by a rectifying process in the hidden world of the organism” (Cannon, 1930). However, visceral response may also, in addition to its vegetative functions, color and qualitatively change other ongoing action. It may serve as a signal for action and attention, and signal actions that are important for the survival of the organism (Mandler, 1975). Finally, the autonomic system appears to support adaptive responses, making it more likely, for example, that the

organism will respond more quickly, scan the environment more effectively, and eventually respond adaptively.

Most of the work in this direction was done by Marianne Frankenhaeuser (1971, 1975). Her studies used a different measurement of autonomic activity: the peripheral appearance of adrenaline and noradrenaline (the catecholamines). Frankenhaeuser (1975) argued that the traditional view of catecholamine activity as “primitive” and obsolete may be mistaken and that the catecholamines, even in the modern world, play an adaptive role “by facilitating adjustment to cognitive and emotional pressures.” She showed that normal individuals with relatively higher catecholamine excretion levels perform better “in terms of speed, accuracy, and endurance” than those with lower levels. In addition, good adjustment is accompanied by rapid decreases to base levels of adrenaline output after heavy mental loads have been imposed. High adrenaline output and rapid return to base levels characterized good adjustment and low neuroticism.

In the course of this survey of the organic tradition, I have wandered far from a purely organic point of view and have probably even done violence to some who see themselves as cognitive centralists rather than organic peripheralists. However, the line of succession seemed clear, and the line of development was cumulative. Neither the succession nor the cumulation will be apparent when we look at the other face of emotion—the mental tradition.

### **Central/Mental Approaches to Emotion**

Starting with the 1960s, the production of theories of emotion, and of accompanying research, multiplied rapidly. In part, this was due to Schachter’s emphasis on cognitive factors, which made possible a radical departure from the James-Lange tradition. The psychological literature reflected these changes. Between 1900 and 1950, the number of references to “emotion” had risen rather dramatically, only to drop

drastically in the 1950s. The references to emotion recovered in the following decade, to rise steeply by the 1980s (Rimé, 1999). Historically, the centralist/mental movements started with the unanalyzable feeling, but its main thrust was its insistence on the priority of psychological processes in the causal chain of the emotions. Whether these processes were couched in terms of mental events, habits, conditioning mechanisms, or sensations and feelings, it was these kinds of events that received priority and theoretical attention. By mid-twentieth century, most of these processes tended to be subsumed under the cognitive heading—processes that provide the organism with internal and external information. The shift to the new multitude of emotion theories was marked by a major conference on emotion at the Karolinska Institute in Stockholm in 1972 (Levi, 1975). It was marked by the presence of representatives of most major positions and the last joint appearance of such giants of human physiology of the preceding half century as Paul MacLean, David Rioch, and Jose Delgado. In order to bring the history of emotion to a temporary completion, it is necessary to discuss some of the new arrivals in mid-century. I shall briefly describe the most prominent of these.

Initially, the most visible position was Magda Arnold's, though it quickly was lost in the stream of newcomers. Arnold (1960) developed a hybrid phenomenological-cognitive-physiological theory. She starts with the appraisals of events as "good" or "bad," judgments that are unanalyzable and are part of our basic humanness. She proceeds from there to the phenomenology of emotional "felt tendencies" and accompanying bodily states, and concludes by describing the possible neurophysiology behind these processes. Also in the 1960s, Sylvan Tomkins (1962–1992), the most consistent defender of the "fundamental emotions" approach, started presenting his theory. Tomkins argued that certain eliciting stimuli feed into innate neural affect programs, which represent primary affects such as fear, anger, sadness, surprise, happiness, and others. Each of these primary affects



is linked to a specific facial display that provides feedback to the central brain mechanisms. All other affects are considered secondary and represent some combination of the primary affects. Izard (1971, 1972) presents an ambitious and comprehensive theory that incorporates neural, visceral, and subjective systems with the deliberate aim to place the theory within the context of personality and motivation theory. Izard also gives pride of place to feedback from facial and postural expression, which is “transformed into conscious form, [and] the result is a discrete fundamental emotion” (Izard, 1971, p. 185). Mandler (1975) presented a continuation of Schachter’s position of visceral/cognitive interactions with an excursion into conflict theory, to be discussed below. Frijda (1986) may be the most wide-ranging contemporary theorist. He starts off with a working definition that defines emotion as the occurrence of noninstrumental behavior, physiological changes, and evaluative experiences. In the process of trying a number of different proposals and investigating action, physiology, evaluation, and experience, Frijda arrives at a definition that’s broad indeed. Central to his position are action tendencies and the individual’s awareness of them. The tendencies are usually set in motion by a variety of mechanisms. Thus, Frijda describes emotion as a set of mechanisms that ensure the satisfaction of concerns, compare stimuli to preference states, and by turning them into rewards and punishments, generate pain and pleasure, dictate appropriate action, assume control for these actions and thereby interrupt ongoing activity, and provide resources for these actions (1986, p. 473). The question is whether such mechanisms do not do too much and leave nothing in meaningful action that is not emotional. At least one would need to specify which of the behaviors and experiences that fall under such an umbrella are to be considered emotional and which not. But that would again raise the elusive problem as to what qualifies as an emotion. Ortony, Clore, and Collins (1988) define emotions as “valenced reactions to events, agents, or objects, with their particular nature being determined by the way in which the eliciting situation is construed” (p.

13). Such a definition is, of course subject to James's critique; it is abstracted from the "bodily felt" emotions. Richard Lazarus and his coworkers define emotion as organized reactions that consist of cognitive appraisals, action impulses, and patterned somatic reactions (Folkman & Lazarus, 1990; Lazarus, Kanner, & Folkman, 1980). Emotions are seen as the result of continuous appraisals and monitoring of the person's well-being. The result is a fluid change of emotional states indexed by cognitive, behavioral, and physiological symptoms. Central is the notion of cognitive appraisal, which leads to actions that cope with the situation.

Many of the mental/central theories are descendants of a line of thought going back to Descartes and his postulation of fundamental, unanalyzable emotions. However some 300 years later there has been no agreement on what the number of basic emotions is. Ortony and Turner (1990) note that the number of basic emotions can vary from 2 to 18 depending on which theorist you read. If, as is being increasingly argued nowadays, there is an evolutionary basis to the primary emotions, should they not be more obvious? If basic emotions are a characteristic of all humans, should the answer not stare us into the face? The emotions that one finds in most lists are heavily weighted toward the negative emotions, and love and lust, for example, are generally absent (see also Mandler, 1984).

### ***Facial Expression and Emotions***

If there has been one persistent preoccupation of psychologists of emotion, it has been with the supposed Darwinian heritage that facial expressions express emotion. Darwin's (1872) discussion of the natural history of facial expression was as brilliant as it was misleading. The linking of Darwin and facial expression has left the impression that Darwin considered these facial displays as having some specific adaptive survival value. In fact, the major thrust of Darwin's argument is that the vast majority of these displays are vestigial or accidental.

Darwin specifically argued against the notion that “certain muscles have been given to man solely that he may reveal to other men his feelings” (cited in Fridlund, 1992b, p. 119).

With the weakening of the nineteenth-century notion of the unanalyzable fundamental emotion, psychologists became fascinated with facial expressions, which seemed to be unequivocal transmitters of specific, discrete emotional states. Research became focused on the attempt to analyze the messages that the face seemed to be transmitting (see Schlosberg, 1954). However, the evaluation of facial expression is marked by ambivalence. On the one hand, there is some consensus about the universality of facial expressions.

On the other hand, as early as 1929 there was evidence that facial expressions are to a very large extent judged in terms of the situations in which they are elicited (Landis, 1929). The contemporary intense interest in facial expression started primarily with the work of Sylvan Tomkins (see above), who placed facial expressions at the center of his theory of emotion and the eight basic emotions that form the core of emotional experience. The work of both Ekman and Izard derives from Tomkins’s initial exposition. The notion that facial displays express some underlying mental state forms a central part of many arguments about the nature of emotion. While facial expressions can be classified into about half a dozen categories, the important steps have been more analytic and have looked at the constituent components of these expressions. Paul Ekman has brought the analysis of facial movement and expression to a level of sophistication similar to that applied to the phonological, phonemic, and semantic components of verbal expressive experiences (Ekman, 1982; Ekman & Oster, 1979). Ekman attributes the origin of facial expressions to “affect programs” and claims that the only truly differentiating outward sign of the different emotions is found in these emotional expressions. Another point of view has considered facial expressions as primarily communicative devices. Starting with the fact that it is not clear how the outward

expression of inner states is adaptive, that is, how it could contribute to reproductive fitness, important arguments have been made that facial displays are best seen (particularly in the tradition of behavioral ecology) as communicative devices, independent of emotional states (Fridlund, 1991, 1992a; Mandler, 1975, 1992). Facial displays can be interpreted as remnants of preverbal communicative devices and as displays of values (indicating what is good or bad, useful or useless, etc.). For example, the work of Janet Bavelas and her colleagues has shown the importance of communicative facial and other bodily displays.

The conclusion, in part, is that the “communicative situation determines the visible behavior” (Bavelas, Black, Lemery, & Mullett, 1986). In the construction of emotions, facial displays are important contributors to cognitions and appraisals of the current scene, similar to verbal, imaginal, or unconscious evaluative representations.

### **The Conflict Theories**

The conflict theories are more diverse than the other categories that we have investigated. They belong under the general rubric of mental theories because the conflicts involved are typically mental ones, conflicts among actions, goals, ideas, and thoughts. These theories have a peculiar history of noncumulateness and isolation. Their continued existence is well recognized, but rarely do they find wide acceptance.

One of the major exponents of this theme in modern times was the French psychologist Frédéric Paulhan. He started with the major statement of his theory in 1884, which was presented in book form in 1887; an English translation did not appear until 1930 (Paulhan, 1887, 1930). The translator, C. K. Ogden, contributed an introduction to that volume that is marked by its plaintive note. He expressed wonderment that so little attention had been paid to Paulhan for over 40 years. He complained that a recent writer had assigned to

MacCurdy (1925) the discovery that emotional expressions appear when instinctive reactions are held up. Ogden hoped that his reintroduction of Paulhan to the psychological world would have the proper consequences of recognition and scientific advance. No such consequences have appeared. It is symptomatic of the history of the conflict theories that despite these complaints, neither Ogden nor Paulhan mention Herbart (1816), who said much the same sort of thing. Paulhan's major thesis was that whenever any affective events occur, we observe the same fact: the arrest of tendency. By arrested tendency Paulhan means a "more or less complicated reflex action which cannot terminate as it would if the organization of the phenomena were complete, if there were full harmony between the organism or its parts and their conditions of existence, if the system formed in the first place by man, and afterwards by man and the external world, were perfect" (1930, p. 17). However, if that statement rehearses some older themes, Paulhan must be given credit for the fact that he did not confine himself to the usual "negative" emotions but made a general case that even positive, pleasant, joyful, aesthetic emotions are the result of some arrested tendencies. And he also avoided the temptation to provide us with a taxonomy of emotions, noting, rather, that no two emotions are alike, that the particular emotional experience is a function of the particular tendency that is arrested and the conditions under which that "arrest" occurs. The Paulhan-Ogden attempt to bring conflict theory to the center of psychology has an uncanny parallel in what we might call the Dewey-Angier reprise. In 1894 and 1895, John Dewey published two papers on his theory of emotion. In 1927, Angier published a paper in the *Psychological Review* that attempted to resurrect Dewey's views. His comments on the effect of Dewey's papers are worth quoting: "They fell flat. I can find no review, discussion, or even specific mention of them at the time or during the years immediately following in the two major journals" (Angier, 1927). Angier notes that comment had been made that Dewey's theory was ignored because people did not understand it. He anticipated that

another attempt, hopefully a more readable one, would bring Dewey's conflict theory to the forefront of speculations about emotion. Alas, Angier was no more successful on behalf of Dewey than Ogden was in behalf of Paulhan. Dewey's conflict theory, in Angier's more accessible terms, was: Whenever a series of reactions required by an organism's total "set" runs its course to the consummatory reaction, which will bring "satisfaction" by other reactions, there is no emotion. Emotion arises only when these other reactions (implicit or overt) are so irrelevant as to resist ready integration with those already in orderly progress toward fruition. Such resistance implies actual tensions, checking of impulses, interference, inhibition, or conflict. These conflicts constitute the emotions; without them there is no emotion; with them there is. And just as Paulhan and Ogden ignored Herbart, so did Dewey and Angier ignore Herbart and Paulhan. Yet, I should not quite say "ignore." Most of the actors in this "now you see them, now you don't" game had apparently glanced at the work of their predecessors. Maybe they had no more than browsed through it.

The cumulative nature of science is true for its failures as well as for its successes. There was no reason for Paulhan to have read or paid much attention to Herbart, or for Dewey or Angier to have read Paulhan. After all, why should they pay attention to a forgotten psychologist when nobody else did? It may be that conflict theories appeared at inappropriate times, that is, when other emotion theories were more prominent and popular—for example, Dewey's proposal clashed with the height of James's popularity. In any case, it is the peculiar history of the conflict theories that they tend to be rediscovered at regular intervals.

In 1941, W. Hunt suggested that classical theories generally accepted a working definition of emotion that involved some emergency situation of biological importance during which "current behavior is suspended" and responses appear that are directed toward a resolution of the emergency

(W. Hunt, 1941). These “classical” theories “concern themselves with specific mechanisms whereby current behavior is interrupted and emotional responses are substituted” (p. 268). Hunt saw little novelty in formulations that maintained that emotion followed when an important activity of the organism is interrupted. Quite right; over nearly 200 years, that same old “theme” has been refurbished time and time again. I will continue the story of the conflict theories without pausing for two idiosyncratic examples, behaviorism and psychoanalysis, which—while conflict theories—are off the path of the developing story. I shall return to them at the end of this section.

The noncumulative story of conflict theories stalled for a while about 1930, and nothing much had happened by 1941, when W. Hunt barely suppressed a yawn at the reemergence of another conflict theory. But within the next decade, another one appeared, and this one with much more of a splash. It was put forward by Donald O. Hebb (1946, 1949), who came to his conflict theory following the observations of rather startling emotional behavior. Hebb restricted his discussion of emotion to what he called “violent and unpleasant emotions” and to “the transient irritabilities and anxieties of ordinary persons as well as to neurotic or psychotic disorder” (1949, p. 235).

He specifically did not deal with subtle emotional experiences nor with pleasurable emotional experiences. Hebb’s observations concerned rage and fear in chimpanzees. He noted that animals would have a paroxysm of terror at being shown another animal’s head detached from the body, that this terror was a function of increasing age, and also that various other unusual stimuli, such as other isolated parts of the body, produced excitation. Such excitation was apparently not tied to a particular emotion; instead, it would be followed sometimes by avoidance, sometimes by aggression, and sometimes even by friendliness. Hebb assumed that the innate disruptive response that characterizes the emotional disturbance is the result of an interference with a phase sequence—a central neural structure that is

built up as a result of previous experience and learning. Hebb's insistence that phase sequences first must be established before they can be interfered with, and that the particular emotional disturbance follows such interference and the disruptive response, identifies his theory with the conflict tradition. Hebb's theory does not postulate any specific physiological pattern for any of these emotional disturbances such as anger, fear, grief, and so forth, nor does he put any great emphasis on the physiological consequences of disruption.

The next step was taken by Leonard Meyer (1956), who, in contrast to many other such theorists, had read and understood the literature. He properly credited his predecessors and significantly advanced theoretical thinking. More important, he showed the application of conflict theory not in the usual areas of fear or anxiety or flight but in respect to the emotional phenomena associated with musical appreciation.

None of that helped a bit. It may well be that because he worked in an area not usually explored by psychologists, his work had no influence on any psychological developments. Meyer started by saying that emotion is "aroused when a tendency to respond is arrested or inhibited." He gave John Dewey credit for fathering the conflict theory of emotion and recognized that it applies even to the behaviorist formulations that stress the disruptive consequences of emotion.

Meyer noted that Paulhan's "brilliant work" predates Dewey's, and he credited Paulhan with stating that emotion is aroused not only by opposed tendencies but also when "for some reason, whether physical or mental [a tendency], cannot reach completion." So much for Meyer's awareness of historical antecedents. Even more impressive is his anticipation of the next 20 years of development in emotion theory. For example, he cited the conclusion that there is no evidence that each affect has its own peculiar physiological composition. He concluded that physiological reactions are "essentially undifferentiated, and



become characteristic only in certain stimulus situations. . . . Affective experience is differentiated because it involves awareness and cognition of the stimulus situation which itself is necessarily differentiated.” In other words: An undifferentiated organic reaction becomes differentiated into a specific emotional experience as a result of certain cognitions. As an example, Meyer reminded his readers that the sensation of falling through space might be highly unpleasant, but that a similar experience, in the course of a parachute jump in an amusement park, may become very pleasurable.

In short, Meyer anticipated the development of the cognitive and physiological interactions that were to become the mainstays of explanations of emotions in the 1960s and 1970s (e.g., Schachter). Most of Meyer’s book is concerned with the perception of emotional states during the analysis and the appreciation of music. His major concern is to show that felt emotion occurs when an expectation is activated and then temporarily inhibited or permanently blocked.

The last variant of the “conflict” theme to be considered has all the stigmata of its predecessors: The emotional consequences of competition or conflict are newly discovered, previous cognate theories are not acknowledged, and welltrodden ground is covered once again. The theorist is Mandler and the year was 1964. The theory is one of conflicting actions, blocked tendencies, and erroneous expectations. But there is no mention of Dewey, of Paulhan, and certainly not of Meyer. The basic proposition (Mandler, 1964) was that the interruption of an integrated or organized response sequence produces a state of arousal, which will be followed by emotional behavior or experience. This theme was expanded in 1975 to include the interruption of cognitive events and plans. The antecedents of the approach appeared in a paper by Kessen and Mandler (1961), and the experimental literature invoked there is not from the area of emotion; rather, it is from the motivational work of Kurt Lewin (1935), who had extensively

investigated the effect of interrupted and uncompleted action on tension systems.

In contrast to other conflict theories—other than Meyer’s—in Mandler, the claim is that interruption is a sufficient and possibly necessary condition for the occurrence of autonomic nervous system arousal, that such interruption sets the stage for many of the changes that occur in cognitive and action systems, and finally, that interruption has important adaptive properties in that it signals important changes in the environment. Positive and negative emotions are seen as following interruption, and, in fact, the same interruptive event may produce different emotional states or consequences depending on the surrounding situational and intrapsychic cognitive context. Some empirical extensions were present in Mandler and Watson and, for example, confirmed that an appetitive situation can produce extreme emotional behavior in lower animals when they are put into a situation where no appropriate behaviors are available to them (Mandler & Watson, 1966). Other extensions were further elaborations of the Schachter dissociation of arousal and cognition, with discrepancy between expectation and actuality producing the arousal. Just as interruption and discrepancy theory asked the question that Schachter had left out—“What is the source of the autonomic arousal?”—so it was asked later by LeDoux in 1989: “How is it that the initial state of bodily arousal . . . is evoked? . . . Cognitive theories require that the brain has a mechanism for distinguishing emotional from mundane situations prior to activating the autonomic nervous system” (LeDoux, 1989, p. 270). LeDoux suggested that separate systems mediate affective and cognitive computations, with the amygdala being primarily responsible for affective computation, whereas cognitive processes are centered in the hippocampus and neocortex. The (conscious) experience of emotion is the product of simultaneous projections of the affective and cognitive products into “working

memory.” In Mandler, it is discrepancy/interruption that provides a criterion that distinguishes emotional from mundane situations.

Discrepant situations are rarely mundane and usually emotional; in other words—and avoiding the pitfall of defining emotions—whenever discrepancies occur, they lead to visceral arousal and to conditions that are, in the common language, frequently called emotional. Such constructivist analyses see the experience of emotion as “constructed” out of, that is, generated by, the interaction of underlying processes and relevant to a variety of emotional phenomena (Mandler, 1993, 1999).

### ***Behaviorism and Psychoanalysis***

I hesitated in my recital of conflict theories and decided to pause and postpone the discussion of two strands of theory that are—in today’s climate—somewhat out of the mainstream of standard psychology. Both behaviorist and psychoanalytic theories of emotion are conflict theories, and both had relatively little effect on the mainstream of emotional theory—the former because it avoided a theoretical approach to emotion, the latter because all of psychoanalytic theory is a theory of emotion, as well as a theory of cognition, and adopting its position on emotion implied accepting the rest of the theoretical superstructure. Behaviorists had their major impact on theories of motivation, and the majority of their work relevant to emotion addressed animal behavior and the conditioning of visceral states. However, behaviorist approaches do fall under the rubric of mental theories, defined as applying to psychological, as opposed to physiological, processes. In their approach to emotion, behaviorists stress the primacy of psychological mechanisms, distinguished from the organic approach.

There is another reason to consider behaviorism and psychoanalysis under a single heading. Particularly in the area of emotion, these two classes of theories exhibited most clearly the effects of sociocultural-historical factors on psychological theories. Both, in their own

idiosyncratic ways, were the products of nineteenth-century moral philosophy and theology, just as the unanalyzable feeling was congruent with nineteenth-century idealism. The influence of moral and religious attitudes finds a more direct expression in a theory of emotion, which implies pleasure and unpleasure, the good and the bad, rewards and punishments.

In the sense of the American Protestant ethic, behaviorism raises the improbability of the human condition to a basic theorem; it decries emotion as interfering with the “normal” (and presumably rational) progress of behavior. It opposes “fanciness” with respect to theory, and it budes not in the face of competing positions; its most dangerous competitor is eclecticism. Behaviorism’s departure from classical Calvinism is that it does not see outward success as a sign of inward grace. Rather, in the tradition of the nineteenth-century American frontier, it espouses a Protestant pragmatism in which outward success is seen as the result of the proper environment. Conflict is to be avoided, but when it occurs, it is indicative of some failure in the way in which we have arranged our environment. The best examples of these attitudes can be found when the psychologist moves his theories to the real world, as Watson (1928) did when he counseled on the raising of children. While quite content to build some fears into the child in order to establish a “certain kind of conformity with group standards,” Watson is much more uncertain about the need for any “positive” emotions. He was sure that “mother love is a dangerous instrument.” Children should never be hugged or kissed, never be allowed to sit in a mother’s lap; shaking hands with them is all that is necessary or desirable. A classical example of the behaviorist attitude toward emotion can be found in Kantor (1921), who decries emotional consequences:

They are chaotic and disturb the ongoing stream of behavior; they produce conflict. In contrast, Skinner (1938) noted the emotional consequences that occur during extinction; he understood the conflict

engendered by punishment, and his utopian society is based on positive reinforcement. I have discussed the classical behaviorists here for two reasons. One is that underneath classical behaviorist inquiries into emotion is a conflict theory; it is obvious in Kantor, and implied in Watson and Skinner. But there is also another aspect of conflict in behaviorist approaches to emotion; it is the conflict between an underlying rational pragmatism and the necessity of dealing with emotional phenomena, which are frequently seen as unnecessary nuisances in the development and explanation of behavior. There is no implication that emotions may be adaptively useful. For example, apart from mediating avoidance behavior, visceral responses are rarely conceived of as entering the stream of adaptive and useful behavior.

One of the major aspirations of the behaviorist movement was that the laws of conditioning would provide us with laws about the acquisition and extinction of emotional states. Pavlovian (respondent, classical) procedures in particular held out high hopes that they might produce insights into how emotions are “learned.” It was generally assumed that emotional conditioning would provide one set of answers. However, the endeavor has produced only half an answer. We know much about the laws of conditioning of visceral responses, but we have learned little about the determinants of human emotional experience (see Mowrer, 1939). The most active attempt to apply behaviorist principles in the fields of therapy and behavior modification is increasingly being faced with “cognitive” incursions.

In the area of theory, one example of neo-behaviorist conflict theories is Amsel’s theory of frustration (1958, 1962). Although Amsel is in the first instance concerned not with emotion but rather with certain motivational properties of nonreward, he writes in the tradition of the conflict theories.

Amsel noted that the withdrawal of reward has motivational consequences. These consequences occur only after a particular

sequence leading to consummatory behavior has been well learned. Behavior following such blocking or frustration exhibits increased vigor, on which is based the primary claim for a motivational effect. Amsel noted that anticipatory frustration behaves in many respects like fear. This particular approach is the most sophisticated development of the early behaviorists' observations that extinction (nonreward) has emotional consequences.

Psychoanalysis was in part a product of a nineteenth-century interpretation of the Judeo-Christian ethic. The great regulator is the concept of unpleasure (Unlust); Eros joins the scenario decades later. At the heart of the theory lies the control of unacceptable instinctive impulses that are to be constrained, channeled, coped with. Freud did not deny these impulses; he brought them out into the open to be controlled—and even sometimes liberated. However at the base was sinning humanity, who could achieve pleasure mainly by avoiding unpleasure. Psychoanalytic theory therefore qualifies as a conflict theory. I have chosen not to describe psychoanalytic theory in great detail for two reasons. First, as far as the mainstream of psychological theories of emotion is concerned, Freud has had a general rather than specific impact. Second, as I have noted, all of psychoanalytic theory presents a general theory of emotion. To do justice to the theory in any detail would require a separate chapter. However briefly, it is not difficult to characterize Freud's theory as a conflict theory. In fact, it combines conflict notions with Jamesian concerns. Curiously, after rejecting psychological theories and particularly the James-Lange theory of emotion, Freud characterizes affect, and specifically anxiety, by a formulation that is hardly different from James's. Freud talks about specific feelings, such as unpleasantness, efferent or discharge phenomena (primarily visceral), and perception of these discharge phenomena (Freud, 1926/1975). However, in general, affect is seen as a result of the organism's inability to discharge certain "instinctive reactions." The best description of the psychoanalytic theory in terms

of its conflict implications was presented by MacCurdy (1925). MacCurdy describes three stages that are implicit in the psychoanalytic theory of emotion. The first, the arousal of energy (libido) in connection with some instinctual tendency; second, manifestations of this energy in behavior or conscious thought if that tendency is blocked; and third, energy is manifested as felt emotion or affect if behavior and conscious thoughts are blocked and inhibited.

Not unexpectedly, psychoanalytic notions have crept into many different contemporary theories. The most notable of these is probably that of Lazarus and his associates, mentioned earlier, and their descriptions of coping mechanisms, related to the psychoanalytic concerns with symptoms, defense mechanisms, and similar adaptive reactions (Lazarus, Averill, & Opton, 1970).

This concludes our sampling of a history that is some 2,500 years old, that has tried to be scientific, and that has reflected modern culture and society for the past 100-plus years.

## **A FUTURE HISTORY**

First, I want to revisit a question that has been left hanging, namely, exactly what is an emotion? And I start with William James, who pointedly asked that question.

### **William James's Question**

William James initiated the modern period in the history of psychology by entitling his 1884 paper "What Is an Emotion?" Over a hundred years later we still do not have a generally acceptable answer. Did he confuse "a semantic or metaphysical question with a scientific one" (McNaughton, 1989, p. 3)? As we have seen, different people answer the question differently, as behooves a well-used umbrella term from the natural language. Emotion no more receives an unequivocal definition than does intelligence or learning. Within any language or social community, people seem to know full well, though they have

difficulty putting into words, what emotions are, what it is to be emotional, what experiences qualify as emotions, and so forth. However, these agreements vary from language to language and from community to community (Geertz, 1973). Given that the emotions are established facts of everyday experience, it is initially useful to determine what organizes the common language of emotion in the first place, and then to find a reasonable theoretical account that provides a partial understanding of these language uses. But as we have seen, these theoretical accounts themselves vary widely. In recent years theoretical definitions of emotions have been so broad that they seem to cover anything that human beings do, as in the notion that emotions are “episodic, relatively short-term, biologically based patterns of perception, experience, physiology, action, and communication that occur in response to specific physical and social challenges and opportunities” (Keltner & Gross, 1999).

Is there anything that is essential to the use of the term “emotion,” some aspect that represents the core that would help us find a theoretical direction out of the jungle of terms and theories? Lexicographers perform an important function in that their work is cumulative and, in general, responds to the nuances and the changing customs of the common language. What do they tell us? Webster’s *Seventh New Collegiate Dictionary* (1969) says that *emotion* is “a psychic and physical reaction subjectively experienced as strong feeling and physiologically involving changes that prepare the body for immediate vigorous action,” and that *affect* is defined as “the conscious subjective aspect of an emotion considered apart from bodily changes.” Here is the traditional definition, which responds to the advice of our elder statesmen Darwin and James that visceral changes are a necessary part of the emotions. But they are not sufficient; we still require the affective component. Assuming that “affect” falls under a broad definition of cognition, including information, cogitation, subjective classification and other mental entities, the advantage of an



affective/cognitive component is that it makes all possible emotions accessible.

Whatever evaluative cognitions arise historically and culturally, they are potentially part of the emotional complex. Thus, emotions different from the Western traditions (e.g., Lutz, 1988) become just as much a part of the corpus as transcultural fears and idiosyncratically Western romantic love. However, even such an extension covers only a limited section of the panoply of emotions, and the arousal/cognition approach may not be sufficient. It is unlikely that the question of a definition of the commonsense meaning of emotion will easily be resolved. And so I close this section by returning to a quote from Charles Darwin, who had thought so fruitfully about the expression of emotion and who knew that “expression” involved more than the face and that the viscera were crucial in the experience of emotion: “Most of our emotions are so closely connected with their expression that they hardly exist if the body remains passive. . . . [As] Louis XVI said when surrounded by a fierce mob, ‘Am I afraid? Feel my pulse.’ So a man may intensely hate another, but until his body frame is affected, he cannot be said to be enraged” (Darwin, 1872, p. 239).

### **How Many Theories?**

Given that different lists of emotions and definitions seem to appeal to different sets of emotions, one might have to consider the possibility that the emotion chapter contains so many disparate phenomena that different theories might be needed for different parts of the emotion spectrum. Such a possibility was hinted at even by William James, who, in presenting his theory of emotion, noted that the “only emotions... [that he proposed] expressly to consider . . . are those that have a distinct bodily expression” (James, 1884, p. 189). He specifically left aside aesthetic feelings or intellectual delights, the implication being that some other explanatory mechanism applies to those. On the one hand, many current theories of human emotion restrict themselves to the same

domain as James did—the subjective experience that is accompanied by bodily “disturbances.” On the other hand, much current work deals primarily with negative emotions—and the animal work does so almost exclusively.

Social and cognitive scientists spend relatively little time trying to understand ecstasy, joy, or love, but some do important and enlightening work in these areas (see, for example, Berscheid, 1983, 1985; Isen, 1990). Must we continue to insist that passionate emotional experiences of humans, ranging from lust to political involvements, from coping with disaster to dealing with grief, from the joys of creative work to the moving experiences of art and music, are all cut from the same cloth, or even that that cloth should be based on a model of negative emotions? There are of course regularities in human thought and action that produce general categories of emotions, categories that have family resemblances and overlap in the features that are selected for analysis (whether it is the simple dichotomy of good and bad, or the appreciation of beauty, or the perception of evil).

These families of occasions and meanings construct the categories of emotions found in the natural language. The emotion categories are fuzzily defined by external and internal situations, and the common themes vary from case to case and have different bases for their occurrence. Sometimes an emotional category is based on the similarity of external conditions, as in the case of some fears and environmental threats. Sometimes an emotional category may be based on a collection of similar behaviors, as in the subjective feelings of fear related to avoidance and flight. Sometimes a common category arises from a class of incipient actions, as in hostility and destructive action. Sometimes hormonal and physiological reactions provide a common basis, as in the case of lust, and sometimes purely cognitive evaluations constitute an emotional category, as in judgments of helplessness that eventuate in anxiety. Others, such as guilt and grief, depend on individual evaluations of having committed undesirable acts or trying

to recover the presence or comfort of a lost person or object. All of these emotional states involve evaluative cognitions, and their common properties give rise to the appearance of discrete categories of emotions. It can also be argued that different theories and theorists are concerned with different aspects of an important and complex aspect of human existence. Thus, animal research is concerned with possible evolutionary precursors or parallels of some few important, usually aversive, states. Others are more concerned with the appraisal and evaluation of the external world, while some theories focus on the cognitive conjunction with autonomic nervous system reactions. And the more ambitious try to put it all together in overarching and inclusive systems. It may be too early or it may be misleading to assume common mechanisms for the various states of high joy and low despair that we experience, or to expect complex human emotions to share a common ancestry with the simple emotions of humans and other animals. The question remains whether the term *emotion* should be restricted to one particular set of these various phenomena. Until such questions are resolved, there is clearly much weeding to be done in the jungle, much cultivation in order to achieve a well-ordered garden