

FROM PSYCHOLOGICAL STRESS TO THE EMOTIONS: A History of Changing Outlooks

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Research scholars are products of their times but their work also changes the way scientific issues are studied after them. This reciprocal influence between the outlook of a period and the research people do has been particularly evident in the study of psychological stress and the emotions during the period of my academic life from post-World War II to the present. In pursuing issues about stress and the emotions that have been of particular interest to me, historical shifts of great moment are revealed, which I intend to highlight in this essay.

EARLY APPROACHES TO STRESS

The term stress, meaning hardship or adversity, can be found—though without a programmatic focus—at least as early as the 14th century (Lumsden 1981). It first seems to have achieved technical importance, however, in the 17th century in the work of the prominent physicist-biologist, Robert Hooke (see Hinkle 1973). Hooke was concerned with how man-made structures, such as bridges, must be designed to carry heavy loads and resist buffeting by winds, earthquakes, and other natural forces that could destroy them. *Load* referred to a weight on a structure, *stress* was the area over which the load impinged, and *strain* was the deformation of the structure created by the interplay of both load and stress.

Although these usages have changed somewhat in the transition from physics to other disciplines, Hooke's analysis greatly influenced early 20th century models of stress in physiology, psychology, and sociology. The theme that survives in modern times is the idea of stress as an external load or demand on a biological, social, or psychological system.

During World War II there was considerable interest in emotional breakdown in response to the "stresses" of combat (e.g. Grinker & Spiegel 1945). The emphasis on the psychodynamics of breakdown—referred to as "battle fatigue" or "war neurosis"—is itself historically noteworthy, because in World War I the perspective had been neurological rather than psychological; the World War I term for breakdown was "shell shock," which expressed a vague but erroneous notion that the dysfunction resulted from brain damage created by the sound of exploding shells.

After World War II it became evident that many conditions of ordinary life—for example, marriage, growing up, facing school exams, and being ill—could produce effects comparable to those of combat. This led to a growing interest in stress as a cause of human distress and dysfunction. The dominant model—parallel with Hooke's analysis—was basically that of input (load or demand on systems) and output (strain, deformation, breakdown). The main epistemology of the American academic psychology of those days, namely, behaviorism and positivism, made this type of model appear scientific and straightforward, though it turned out to be insufficient.

When I appeared on the scene, the discipline's interest in stress—presumably an esoteric topic—was modest, and the concept had not yet been applied to the more ordinary conditions of daily life. The military wanted to know how to select men who would be stress resistant, and to train them to manage stress. The major research questions of the immediately post-World War II period centered on the effects of stress and how they could be explained and predicted. The research style was experimental, reflecting the widely accepted view at the time that the most dependable way to obtain knowledge was in the laboratory.

It soon became apparent, however, that these questions did not have a simple answer. In the 1950s, my colleagues and I, along with many others, soon discovered that stressful conditions did not produce dependable effects; for some persons the stress aroused by a given condition was great, while for others it was small; and under stress conditions, depending on the task, the performance for some was markedly impaired, for others it was improved, and for still others there was no demonstrable effect (e.g. Lazarus & Eriksen 1952).

We concluded that to understand what was happening we had to take into account *individual differences in motivational and cognitive variables*, which intervened between the stressor and the reaction (Lazarus et al 1952). Our 1952 article, incidently, was one of the two most widely read in that journal (as surveyed by the editor) in that academic year; the other was by Brown & Farber (1951) which, expressing the zeitgeist, was a neobehavioristic analysis of frustration and a treatment of emotion as an intervening variable. Psychology had barely begun to move away from stimulus-response (S-R) models to stimulus-organism-response (S-O-R) models in an early stage of what later was called the cognitive revolution by North Americans. The same mediating variables are now well-established features of current theories of stress and emotion.

I note, parenthetically, that psychology has long been ambivalent about individual differences, opting for the view that its scientific task is to note invariances and develop general laws. Variations around such laws are apt to be considered errors of measurement, though they must be understood if reasonably accurate prediction is to be possible.

Hooke too was interested in individual differences in the elasticity of metals, which were a factor in their resistance to strain. For example, cast iron is hard and brittle and breaks easily, but wrought iron is soft and malleable and bends without breaking. This physical phenomenon is also used as a metaphor for resistance to psychological stress. Thus, the capacity of metals to resist deformation presaged interest in individual differences in the resiliency of people under stress.

The analogy is evident today in the vigorous study of the personality traits and coping processes that help some people resist the deleterious effects of stress better than others. Some of the personality traits that appear to be associated with resilience include constructive thinking (Epstein & Meier 1989), hardiness (Maddi & Kobasa 1984; see also Orr & Westman 1990), hope (Snyder et al 1991), learned resourcefulness (Rosenbaum 1990), optimism—shades of Horatio Alger and Norman Vincent Peale—(Scheier & Carver 1987), self-efficacy (Bandura 1982), and sense of coherence (Antonovsky 1987).

The study of stress has been plagued by an inconsistent and potentially confusing use of terms to denote the variables of the stress process. In the medical tradition, for example, stress is treated as a set of psychological and physiological reactions to noxious agents; Selye used *stressor* to denote the

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agent, stress to denote the reaction; sociologists speak of stress as the disturbing agent (e.g. social disequilibrium; Smelser 1963) and of *strain* as the collective reaction (e.g. a panic or riot).

Despite these different usages, however, certain essential meanings are always involved. Whatever words are used to describe the stress process, four concepts must always be considered: 1. a causal external or internal agent, which Hooke called a load and others call stress or a stressor. In my own analyses, I emphasize the person-environment relationship and relational meaning (defined below); 2. an evaluation (by a mind or a physiological system) that distinguishes what is threatening or noxious from what is benign; 3. coping processes used by the mind (or body) to deal with stressful demands; and 4. a complex pattern of effects on mind and body, often referred to as the stress reaction.

Because my focus is psychological rather than physiological stress, I should digress briefly to point up the distinction. Early on, the two kinds of stress were unified under homeostatic concepts—and in the related concept of *activation*. Stress represented a deviation from some norm or steady state. The principle of homeostasis was initially described by Claude Bernard, and its mechanisms were later elaborated further by Walter Cannon (1939), as most psychologists know.

An address by Hans Selye to the American Psychological Association in 1950 stimulated great interest in the overlaps between physiological and psychological stress. Selye (1956/1976) shifted attention from the catecholamines of the adrenal medulla, which Cannon had focused on, to the steroids of the adrenal cortex. Selye's General Adaptation Syndrome (GAS) emphasized that any agent noxious to the tissues (a stressor) would produce more or less the same orchestrated physiological defense (stress reaction). The GAS may be thought of as the physiological analogue of the psychological concept of coping.

Psychological stressors were said also to produce the GAS. Yet in research that has not gotten widespread attention, Mason et al (1976) presented data suggesting that corticosteroid secretion may be more or less specific to psychological stress and not particularly responsive to physiological stresses such as heat, exercise, and hunger. Although there are important overlaps between them, psychological stress and physiological stress require entirely different levels of analysis (see Lazarus 1966; Lazarus & Folkman 1984). What generates physiological stress—that is, what is noxious to tissues—is not the same as what is stressful (“noxious”) psychologically.

Indeed, the differences between physiological and psychological stress are profound and center on an issue that psychologists have long had great difficulty dealing with, namely, personal meaning. The key question is how to define a load or stressor psychologically. I deal, below, with the question of what an individual considers a harm, threat, challenge, or benefit. Notice that in speaking of several kinds of states relevant to psychological stress and

emotion (namely, harm, threat, challenge, and benefit) I abandon the early idea that stress is merely a form of activation. Such a unidimensional concept—degree of stress—ignored qualitative differences.

There have been two influential qualitative expansions of the stress concept. First, although Selye (1956/1976) had originally postulated a general, nonspecific physiological response to any stressor, late in his life (1974) he drew a health-centered distinction between eustress and distress. *Eustress* was the good kind of stress because it was associated, presumably, with positive feelings and healthy bodily states; *distress* was the bad kind, associated with negative feelings and disturbed bodily states.

Unfortunately, Selye did not tell us clearly what the differences were, psychologically and physiologically. We might guess, of course, that consistent with his views about the GAS, the differences would involve adrenal corticosteroids, some of which are protective (anabolic) while others are destructive (catabolic). The recent explosion of interest in, and the development of technology for measuring, immune response variables and processes offer additional means of distinguishing the two kinds. For example, eustress may enhance immune system competence while distress may impair it.

Second, I had early on (Lazarus 1966) drawn a distinction among three kinds of stress, harm, threat, and challenge (Lazarus 1966, 1981; Lazarus & Launier 1978; Lazarus & Folkman 1984). *Harm* refers to psychological damage that had already been done—e.g. an irrevocable loss. *Threat* is the anticipation of harm that has not yet taken place but may be imminent. *Challenge* results from difficult demands that we feel confident about overcoming by effectively mobilizing and deploying our coping resources.

These different kinds of psychological stress states are presumably brought about by different antecedent conditions, both in the environment and within the person, and have different consequences. For example, threat is an unpleasant state of mind that may seriously block mental operations and impair functioning, while challenge is exhilarating and associated with expansive, often outstanding performance. To the extent that we take these variations seriously, stress cannot be considered in terms of a single dimension such as activation. As will be seen below, such a recognition involves considering diverse emotional states, some negative, some positive.

THE COGNITIVE MEDIATIONAL APPROACH: APPRAISAL

Definition of the psychologically noxious has been the central theme of my theoretical and research efforts from the beginning. Allow me to summarize my research in this area before turning to the parallel problem of the cognitive mediation of the emotions—my current main concern.

Although a number of influential early writers adopted the view that psychological stress is dependent on cognitive mediation (e.g. Arnold 1960; Grinker & Spiegel 1945; Janis 1958; Mechanic 1962), the cognitive movement in North American psychology did not get fully under way until the 1970s. This view is centered on the concept of appraisal, which is the process that mediates—I would prefer to say *actively negotiates*—between, on the one hand, the demands, constraints, and resources of the environment and, on the other, the goal hierarchy and personal beliefs of the individual.

I believe the programmatic efforts of my colleagues and me in the 1960s (e.g. Lazarus 1966, 1968; Lazarus et al 1970) helped convince many of those still wedded to an input-output conceptualization (along with many newcomers to the scene) that appraisal played a significant role in stress reactions. A powerful tide in psychology—eventually becoming a tidal wave that seems to have swept old epistemologies aside—has moved us from behaviorism toward a much freer outlook in the United States. Our psychologists, the main exception being Skinner (1953, 1990), have become less hesitant about referring to what goes on in the mind; we are now less reluctant to explain human and animal actions and reactions in terms of thought processes.

My colleagues and I employed a simple experimental paradigm designed to create psychological stress as naturalistically as possible in the laboratory. We had subjects watch stressful films while we periodically sampled their subjective reports of stress and continuously recorded their autonomic nervous system activity (primarily as reflected in heart rate and skin conductance).

Although a number of films were used in this research, two were particularly important. One presented a series of subincision operations—a male rite of passage among the Arunta of Australia. The other, a film designed to teach woodworking personnel how to avoid shop accidents, depicted such bloody accidents as a worker being fatally impaled on a board thrust from a circular saw and a worker getting his finger cut off.

We used recorded speech passages to orient viewers before the films were shown. Their purpose was to influence the way subjects construed what was happening in the movie (e.g. Lazarus & Alfert 1964; Speisman et al 1964). These passages were based on ego-defense theory, which posited certain themes people used to protect themselves from threat.

One passage, for example, mimicked *denial*—“The people in the film are not hurt or distressed by what is happening,” or “These accidents didn’t really happen but were staged for their effect.” Another mimicked intellectualization or *distancing*—“This is an interesting anthropological study of aboriginal customs,” or “The accidents portrayed in this film provide the basis for instructions about how to avoid injuries in a woodworking shop.” A third emphasized the main *sources of threat* in the film—“Many of the people you see in this film suffer severe pain and infection from these rituals.” The effects of these experimental treatments were compared with each other and with a

control condition that involved no attempt to influence the way subjects construed what was happening.

These orientation passages had powerful effects on self-reports of distress and on psychophysiological stress reactions (heart rate and skin conductance). Denial and distancing passages markedly lowered these reactions compared with the control; the threat passage raised them. The tendency of the passages to reduce stress levels could be predicted on the basis of differences among viewers' cognitive styles.

In an attempt to understand what was happening, I shifted from an emphasis on ego defenses to a general concept of *appraisal* as the cognitive mediator of stress reactions. I began to view appraisal as a universal process in which people (and other animals) constantly evaluate the significance of what is happening for their personal well-being. In effect, I considered psychological stress to be a reaction to personal harms and threats of various kinds that emerged out of the person-environment relationship. But more of this below.

In subsequent experiments, we had subjects await a source of stress for different periods—e.g. an electric shock that was anticipated but never actually occurred (Folkins 1970; Monat et al 1973), or a bloody accident (on film) that had been foreshadowed by a flashback (Nomikos et al 1968). These and other psychophysiological studies showed that the degree of stress reaction depended on evaluative thoughts (appraisal and coping). In turn the contents of these thoughts, such as “How bad will it be,” depended on how long they had to wait for the harmful confrontation. A strong empirical case was being made that appraisal and coping processes shaped the stress reaction, and that these processes, in turn, were influenced by variables in the environment and within the person.

Such reasoning was consistent with the expansion in the 1960s and 1970s of cognitive mediational views in psychology generally. The outlook was anticipated by many illustrious figures in North American psychology, including Asch, Harlow, Heider, Kelly, McClelland, Murphy, Rotter, and White, as well as their intellectual mentors, Lewin and Murray, and still others who worked within the psychoanalytic framework. We often forget too that this outlook dominated classical Greek and European thought, a point I return to below. In any event, psychologists could now seriously and programmatically ask what must be going on in the mind to influence people to act and react as they do.

Nor is this way of thinking pure phenomenology. Because of different goals and beliefs, because there is often too much to attend to, and because the stimulus array is often ambiguous, people are selective both in what they pay attention to and in what their appraisals take into account. Even when an individual's appraisal deviates from the norm it may still result in a good match between the appraisal and reality. There are many realities rather than a single one, and deviance is not necessarily pathology.

COPING WITH STRESS

As the cognitive mediational outlook developed further, the coping process gained in importance too (Lazarus 1966; Lazarus et al 1974). Because psychological stress defines an unfavorable person-environment relationship, its essence is process and change rather than structure or stasis. We alter our circumstances, or how they are interpreted, to make them appear more favorable—an effort called coping.

Traditional approaches to coping had emphasized traits or styles—that is, stable properties of personality. In contrast, my own analysis and research (Lazarus 1966, 1981; Lazarus & Folkman 1984; Lazarus & Launier 1978) emphasized coping as *process*—a person's ongoing efforts in thought and action to manage specific demands appraised as taxing or overwhelming. Although stable coping styles do exist and are important, coping is highly *contextual*, since to be effective it must change over time and across different stressful conditions (e.g. Folkman & Lazarus 1985). Empirical evaluation of this idea requires study of the same persons over time and across diverse stressful encounters. The Berkeley Stress and Coping Project, which got under way in the late 1970s and continued to the late 1980s (see Lazarus & Folkman 1987 for a review), addressed the contextual side of coping in a number of field studies.

Coping affects subsequent stress reactions in two main ways: First, if a person's relationship with the environment is changed by coping actions the conditions of psychological stress may also be changed for the better. My colleagues and I called this *problem-focused coping*. If we persuade our neighbor to prevent his tree from dropping leaves on our grass, we overcome the original basis of whatever harm or threat their dropping caused us.

Other coping processes, which we called *emotion-focused coping*, change only the way we attend to or interpret what is happening. A threat that we successfully avoid thinking about, even if only temporarily, doesn't bother us. Likewise, reappraisal of a threat in nonthreatening terms removes the cognitive basis of the stress reaction. For example, if a person can reinterpret a demeaning comment by his/her spouse as the unintended result of personal illness or job stress, the appraisal basis for reactive anger will dissipate. Denial and distancing are powerful techniques in the control of psychological stress because they enable a person to appraise an encounter as more benign. In short, whether the change is in external conditions or in one's construal of them, coping influences psychological stress via appraisal; appraisal is always the mediator.

We created a procedure for measuring the coping process in diverse stressful contexts. *The Ways of Coping Questionnaire* (Folkman & Lazarus 1988b) consists of 67 statements about thoughts and actions. An interviewer can use these interactively, or a subject can respond to them in a self-administered

procedure. The questionnaire asks whether and to what extent a person had used certain thoughts and actions in a particular stressful encounter.

By asking about thoughts and actions we avoided having our subjects make inferences about their coping. Instead, we enabled observers' inferences based on a factor analysis yielding eight factor scales, each representing a different coping strategy. The procedure was designed to permit repeated measurements on the same subjects over time and in different stress contexts (see, e.g., Folkman & Lazarus 1985; Folkman et al 1986a; Folkman et al 1986b).

A number of replicable findings about coping emerged from this work, the most important of which can be summarized as follows:

1. Coping is complex, and people use most of the basic strategies (factors) of coping in every stressful encounter. (Are specific coping strategies tied to specific stress contents, or does one strategy follow another in a sort of trial-and-error process? The answer is likely both.)

2. Coping depends on appraisal of whether anything can be done to change the situation. If appraisal says something can be done, problem-focused coping predominates; if appraisal says nothing can be done, emotion-focused coping predominates. Here we have rediscovered the Alcoholics Anonymous epigram, that people should try to change the noxious things that can be changed, accept those that cannot, and have the wisdom to know the difference.

3. When the type of stressful encounter is held constant--e.g. work-, health-, or family-related stress--women and men show very similar coping patterns, despite public prejudices to the contrary.

4. Some strategies of coping are more stable than others across diverse stressful encounters while others are linked to particular stressful contexts. For example, thinking positively about the situation is relatively stable and depends substantially on personality, whereas seeking social support is unstable and depends substantially on the social context.

5. Coping strategies change from one stage of a complex stressful encounter to another. If we lump together the stages in a complex encounter we gain a false picture of the coping process.

6. Coping acts as a powerful mediator of emotional outcomes; positive outcomes are associated with some coping strategies, negative outcomes with others. Our data from a nonprospective study suggested this (Folkman & Lazarus 1988a), and Bolger (1990) has confirmed it in a prospective study in which the coping process was measured independently and before the emotional outcome.

7. The utility of any coping pattern varies with the type of stressful encounter, the type of personality stressed, and the outcome modality studied (e.g. subjective well-being, social functioning, or somatic health). What works in one context may be counterproductive in another. Thus, when there is nothing to do but wait until grades are announced, distancing helps to reduce distress and dysfunction; but when effort should be mobilized to study for a future exam, the same strategy leads the person to abandon the effort to prepare, with the same lowered distress but a later performance disaster (Folkman & Lazarus 1985).

REGARDING STRESS AS A SUBSET OF THE EMOTIONS

Psychological stress should be considered part of a larger topic, the emotions. This theoretical consolidation, while posing some difficulties, has important positive consequences: First, though belonging together, the literature on psychological stress and the literature on emotions have generally been treated as separate. Social and biological scientists interested in the emotions are often unaware of a relevant stress literature, and vice versa. Because psychological stress theory is tantamount to a theory of emotion, and because the two literatures share overlapping ideas, the two fields might usefully be conjoined as the field of emotion theory. Second, we have already progressed from unidimensional (activation) to a multi-dimensional (e.g. harm, threat, challenge) concept of stress. In contrast, recognition of 15 or so specific emotions instead of the several dimensions of stress greatly increases what we can say about an individual's coping and adaptation. Knowing, for example, that in a given encounter (or as a consistent pattern across encounters) this individual feels angry, anxious, guilty, sad, happy, or hopeful tells us much more than knowing merely that he/she is harmed, threatened, or challenged. Use of stress as a source of information about an individual's adaptation to environmental pressures is extremely limited compared with the use of the full array of emotions.

An explosion of interest in the emotions is evident in all the relevant scientific disciplines, each of which looks at emotion from a somewhat different perspective and at different levels of analysis. Many conceptually oriented books on the topic have been appearing, most of them since 1980, including readers by Calhoun & Solomon (1984), Harré (1986), Izard et al (1984), Plutchik & Kellerman (1980, 1983, 1986, 1989), and Scherer & Ekman (1984), and theoretical monographs by Averill (1982), Frijda (1986), De Sousa (1987), Gordon (1987), Izard (1971, 1977), Kemper (1978), Mandler (1984), Ortony et al (1988), and Tomkins (1962, 1963), and myself (Lazarus 1991c).

Readers will appreciate the historical implications of this modern explosion of interest more fully if they also understand that 60 years ago academic psychologists seemed ready to abandon the concept of emotion. Allow me to backtrack to the period when the stress concept was in growing favor but emotion was in the doghouse. In 1933, Meyer made the following arrogant and hardly prescient statement about emotion:

Why introduce into science an unneeded term, such as emotion, when there are already scientific items for everything we have to describe? ... I predict: the "will" has virtually passed out of our scientific psychology today; the "emotion" is bound to do the same. In 1950 American Psychologists will smile at both these terms as curiosities of the past.

When I came on the academic scene in 1948, Duffy (1941a,b; 1960) was arguing with great success that there was nothing special about emotion be-

cause it denoted “all of life,” that is, the ordinary adaptational activities by means of which an organism maintained its internal equilibrium in the face of threatened disruption from internal and external pressures.

Adaptational responses, she said, have direction, are reactions to relationships, and invoke energy mobilization. Therefore, we should abandon the concept of emotion and substitute activation in its place. Was there any psychologically significant difference between a person running to his/her house on a whim and a person, seeing a fire, running the same way in a panic? Her answer was no. She wrote (1941a:287–88), for example, that

all behavior is motivated. Without motivation there is no activity The responses called “emotional” do not appear to follow different principles of action from other adjustive responses of the individual. Changes in internal or external conditions, or in the interpretation of these conditions, always result in internal accommodations. The responses made are specifically adjustive to the situation and are not subject to classification into such categories as “emotional” and “non-emotional.” ... All responses—not merely “emotional” responses—are adjustive reactions attempting to adapt the organism to the demands of the situation. The energy level of response varies with the requirements of the situation as interpreted by the individual. Diffuse internal changes (especially in the viscera) are involved in the production of these changes in energy level. But continuous visceral activity, with accompanying changes in energy level, is a function of life itself, not merely a function of a particular condition called “emotion.”

At the time, Duffy’s theme seemed reasonable and sound to me, though I now reject her position. Those, such as I, who study the psychological process of emotion contend that there is a world of difference between a non-emotional and an emotional event. Although there are behavioral and physiological overlaps, the ways whim-motivated and alarm-motivated actions are organized psychologically are quite different. One’s house being on fire elicits motives, beliefs, appraisals, and coping processes different from those elicited in whimsy, and some emotion theorists would wager that panic has its own special physiological response pattern. Once aroused, emotion is a system of its own. Duffy’s question and response are reminiscent of Skinner’s claim that from a behaviorist’s point of view there is no difference between the tears of eye irritation and the tears of emotional distress.

Why did the stress concept survive and flourish in an epistemological climate so hostile to the emotions? The initial noncognitive, nonmediational, S-R view of psychological stress was suggested by Hooke’s engineering analysis. This view was carried over into analyses of stress prior to the so-called cognitive revolution. A good example of the carryover was the frequent use in the 1960s and 1970s of life events lists for measuring stress, which emphasized such objective environmental changes as death of a spouse, divorce, and loss of a job as stressors. However, by the 1970s much of North American psychology had begun to change and was now receptive—though still some-

what ambivalently—to a cognitive mediational approach to stress and the emotions.

This historical account does not suggest that the study of stress is no longer useful. Rather, the concept of emotion includes that of stress, and both are subject to appraisal and coping theory. As a topic, stress is more limited in scope and depth than the emotions, as I try to show below.

A COGNITIVE-MOTIVATIONAL-RELATIONAL THEORY OF EMOTION

The topic of the emotions provides many more categories of reaction than does that of stress, as many as there are emotions that we are willing to acknowledge and study (itself a controversial subject). I believe that we can identify 15 different emotions, more or less (Lazarus 1991b,c). There are roughly 9 so-called negative emotions: anger, fright, anxiety, guilt, shame, sadness, envy, jealousy, and disgust, each a product of a different set of troubled conditions of living, and each involving different harms or threats. And there are roughly 4 positive emotions: happiness, pride, relief, and love. To this list we probably could add three more whose valence is equivocal or mixed: hope, compassion, and gratitude. (Below I suggest the “core” relational themes for each of these emotions).

What gives this multiplicity of emotions great analytic power is that each emotion arises from a different plot or story about relationships between a person and the environment; feeling angry has its own special scenario, and so does feeling anxious, guilty, ashamed, sad, proud, and so forth. Notice that this way of thinking complicates but enriches the job of understanding and predicting. If it is true that each emotion is brought about by a different appraisal of the personal significance of an adaptational encounter, then we learn different adaptationally relevant things from each about what is happening and about the psychological characteristics of the person who is reacting.

Emotion theorists and researchers must now tackle many issues—too many to examine adequately here. I spend the remainder of this essay on the one that has powered much of my research, namely, the achievement of *relational meaning* through the process of appraisal. This, as I said, is the fundamental puzzle for students of both psychological stress and the emotions. Although I have addressed the problem recently (Lazarus 1991a–c), the proposed solutions are still fluid and a number of other emotion researchers are also struggling to resolve it.

If one takes the position, as I do, that the particular emotion experienced depends on one’s thoughts about an encounter, then these thoughts can most fruitfully be conceptualized at two related but different levels of abstraction, one molar, the other molecular. I begin with the molar level.

Table 1 Emotions and their core relational themes

Emotion	Core relational theme
anger	a demeaning offense against me and mine
anxiety	facing uncertain, existential threat
fright	an immediate, concrete, and overwhelming physical danger
guilt	having transgressed a moral imperative
shame	failing to live up to an ego-ideal
sadness	having experienced an irrevocable loss
envy	wanting what someone else has
jealousy	resenting a third party for the loss of, or a threat to, another's affection or favor
disgust	taking in or being too close to an indigestible object or (metaphorically speaking) idea
happiness	making reasonable progress toward the realization of a goal
pride	enhancement of one's ego-identity by taking credit for a valued object or achievement, either one's own or that of someone or group with whom one identifies
relief	a distressing goal-incongruent condition that has changed for the better or gone away
hope	fearing the worst but wanting better
love	desiring or participating in affection, usually but not necessarily reciprocated
compassion	being moved by another's suffering and wanting to help

Relational Meaning: Core Relational Themes

I said above, without explanation, that emotions are always a response to relational meaning. The relational meaning of an encounter is a person's sense of the harms and benefits in a particular person-environment relationship. To speak of harms and benefits is to allude to motivational as well as cognitive processes; hence the complex name of the theory, which includes the terms cognitive, motivational, and relational.

Personality variables and those that characterize the environment come together in the appraisal of relational meaning. An emotion is aroused not just by an environmental demand, constraint, or resource but by their juxtaposition with a person's motives and beliefs. The process of appraisal negotiates between and integrates these two sets of variables by indicating the significance of what is happening for a person's well-being. This is an extension of the cognitive mediational principle in psychological stress theory—namely, that what causes the stress reaction is not the environmental “stressor” alone but also its significance as appraised by the person who encounters it.

Although one can decompose molar relational meaning into separate, molecular personality and environmental variables (e.g. as hostile actions by another or a goal one is striving for), relational meaning results from a higher or more synthetic level of analysis. At that level the separate variables are lost in favor of a new relational concept—e.g. feeling demeaned, sensing an uncertain threat, feeling failure to live up to an ego-ideal, feeling attainment of what one wants, sensing enhancement of one's self, or suffering an irrevocable loss. Our penchant for reductive analysis in psychology often leaves us without the ability to see how the separate variables are synthesized into molar ones. (For

a classic discussion of the difference between reductive analysis and synthesis or transaction, see Dewey & Bentley 1949; see Lazarus & Launier 1978 for another).

Two spouses, A and B, construct different meanings from the same argumentative encounter. For A, the relational meaning of what is happening is that he/she has been demeaned or slighted; this meaning motivates a desire to repair the wounded self-esteem. For B, on the other hand, the argument's relational meaning is that the marital relationship itself has been threatened. The emotion experienced by B is anger, by A anxiety.

If we would demonstrate that relational meaning is the cognitive foundation of emotion, we must define and measure this meaning—address it empirically. I call the *core relational theme* the relational meaning in each emotion (Lazarus 1991b,c). Each emotion involves a different core relational theme. In Table 1 I suggest core relational themes for the emotions discussed above.

The Separate Appraisal Components

A number of different but overlapping proposals have been advanced about the molecular appraisal components underlying each emotion—see, for example, Frijda (1986), Lazarus (1991c), Reisenzein & Hofmann (1990), Roseman (1984, 1991), Scherer (1984), Smith & Ellsworth (1985, 1987), and Weiner (1986)—and these earlier efforts have been reviewed by Lazarus & Smith (1988) and Smith & Lazarus (1990), Smith & Ellsworth (1985), and others.

Although their language often differs, these proposals share a number of appraisal components, which suggests the beginnings of a common theoretical ground. Most of these systems assume that one key appraisal component is motivational; to have an emotion requires an active goal in an encounter; if no goal is at stake there can be no emotion. Most also assume that the valence of an emotion depends on whether the conditions of the encounter are viewed as favorable to goal attainment (thereby begetting a positive emotion) or unfavorable (thereby begetting a negative emotion). In most proposals, too, assignment of responsibility is factored into certain emotions—that is, whether a harm or benefit is attributed to the self or another. The accountability of others is an important component in the appraisal leading to anger, while self-accountability is important in pride, guilt, and shame.

In my treatment of the appraisal pattern for anger, I have adopted a somewhat controversial position. I regard anger as resulting from an individual's appraisal of injury to self-esteem. Blame is a key appraisal component of anger. The angry person locates responsibility in an external agent—i.e. decides that the person who caused the injury could have refrained from doing so. In contrast with the traditional frustration-aggression hypothesis (cf Berkowitz 1989), I suggest that a person who could not have acted otherwise is not blameworthy, and hence is not the object of anger. There is no malevolence or slight in such a situation, and if there is anger it will be directed

elsewhere on the basis of complex social attributions. Research addressing the role of imputed intentions in the generation of anger has not yet adequately resolved the theoretical question.

Three additional points should be made about appraisal and relational meaning. First, the two levels of analysis, core relational themes and individual appraisal components, are complementary ways of conceptualizing and assessing the particular relational meaning in an emotion. One is synthetic and molar, the other analytic and molecular. A single appraisal component provides only part of this meaning. In the case of anger, for example, the relational meaning cannot be determined from a sense of frustration alone. The analyst has to observe a pattern composed of several appraisal components. Not only does the subject have to feel thwarted, his/her self-esteem has to have been demeaned, responsibility has to have been attributed, and the responsible person has to have been presumed in control of his/her actions. In short, this analysis can synthesize the complex relational meaning (a demeaning offense against me or mine) only after at least four appraisal decisions have been distinguished (out of a possible total of six; see Lazarus 1991c).

Second, disagreements about the details of the appraisal pattern for each emotion should not obscure the considerable agreement about the appraisal pattern required for most emotions, based on a long history of observation and speculation. The current ferment in appraisal theory and research reflects serious attempts to evaluate some of the disagreements empirically.

Third, among appraisal theorists only Scherer (1984) regards the process of appraising as a sequential search of each appraisal question, thereby implying a conscious and deliberate process of decision-making. Although it conflicts with traditional usage among cognitive psychologists, a view of the evaluative process of appraisal as often nonvolitional and unconscious may be emerging.

There is a resurgence of interest in a way of achieving meaning that is not analytic and distant, but immediate and personal. Concepts such as being-in-the-situation (Heidegger; see Guignon 1984; Taylor 1985), embodied intelligence (Merleau-Ponty 1962), tacit knowledge (Polanyi 1966), and resonance (Shepard 1984; see also Trevarthen 1979 on intersubjectivity) illustrate this way of thinking. We sense things about our relationship to the environment without being able to verbalize them. Our emotions often reflect this ephemeral kind of knowing and evaluating (Lazarus & Smith 1988), as well as the more deliberate and analytic processes studied in modern cognitive psychology (see, for example, Lazarus 1991a; and Varela et al 1991).

Despite current notions that emotions and reason are separate and opposing functions and that people are inherently irrational, I now believe that the emotions have an implacable logic. The task of theory is to determine that logic for each emotion. One may reason poorly and attain a sound conclusion; or one may reason well, and come to an unsound conclusion. These forms of irrationality, if you will, are not the same. Although intense emotions may

impair or disrupt reasoning, I believe that most of the time people are rational, given their goals and belief premises.

What could be more logical than the principle that if our goals are thwarted we react with a negative emotion, or that if we are making satisfactory progress toward a goal we react with positive emotion? This reaction may not always be wise, but there is nothing irrational about it. What is more logical than the principle that emotions result from how we evaluate the significance of events to our well-being? It may be foolish to want certain things, or to believe certain things, but it is not illogical to emote on the basis of how we are faring in attaining these goals.

Coping and Emotion

Coping shapes emotion, as it does psychological stress, by influencing the person-environment relationship and how it is appraised. Coping involves both (a) attempts to change the person-environment realities behind negative emotions (problem-focused coping) and (b) attempts to change either what is attended to or how it is appraised (emotion-focused coping). However, inclusion of emotion in the study of coping provides a much richer perspective. One might consider, for example, the sociocultural and intrapsychic implications of having reacted with one or another of the 15 or so emotions. Thus if one expresses anger in a context where anger is rejected by the community, the emotion itself must be coped with—e.g. by inhibition or denial.

With the burgeoning of interest in the emotions has come the realization that coping theory must become more concerned than formerly with the motivational implications of person-environment relationships, which underlie the different emotions. The point can be illustrated by reference to recent research by Laux & Weber (1991), who have been studying how marital partners cope both with angry interchanges and with joint threats that produce anxiety.

Two main patterns have been observed: First, the coping manifested by both parties in an argument is different from that in an anxiety encounter. During an encounter involving anger, more effort is expended in repairing wounded self-esteem than is expended in an anxiety encounter. In anger, such efforts of reparation include attacking the other, escalating anger, defending the self, and posturing. In anxiety encounters, more efforts are made to reassure the other and to preserve the relationship.

Second, even within an anger encounter, the way a marital partner copes differs with his/her differing general goals and situational intentions. If the partner is preoccupied with preserving a relationship threatened by anger, anger escalation is avoided. The partner threatened by damage to the relationship from anger may suppress and conceal his/her anger. I expect this partner would also find excuses not to take offense (emotion-focused coping). On the other hand, the partner whose intention is to repair a wounded self-esteem is more apt to deliver comeuppance. We will understand the coping process

better when we understand the general goals and situational intentions, as well as the emotions, of the parties in encounters.

FINAL THOUGHTS

The philosophical history of the emotions has been essentially cognitive from ancient times to the present. Aristotle, who lived in the 4th century BC, might be called the first cognitive theorist of the emotions, writing in *Rhetoric* (1941:1380) that “Anger may be defined as a belief that we, or our friends, have been unfairly slighted, which causes in us both painful feelings and a desire or impulse for revenge.” This statement contains the basics of an appraisal theory—for example, in its connecting a belief, desire, or motivation to an impulse for revenge (what today is often called an action tendency). With respect to how anger is aroused, Aristotle asks us to consider “(1) what the state of mind of angry people is, (2) who the people are with whom they usually get angry, and (3) on what grounds they get angry with them. It is not enough to know one or even two of these points; unless we know all three, we shall be unable to arouse anger in anyone. The same is true of the other emotions.”

Here Aristotle speaks of the state of mind, and of a cognitively mediated provocation to anger. He seems to be pointing the analysis of emotion toward the researchable conditions behind the arousal of emotions. Quite modern sounding, it seems to me.

Averill’s (1982) treatment of historical teachings about anger, particularly his description of the views of Seneca, Lactantius, Aquinas, and Descartes, leaves little doubt that cognitive mediation of the emotions has been a preeminent concept. And lest the reader think that ancient or medieval cognitive-motivational-relational views went into hiding until recently, I quote G. C. Robertson (1877:413), a 19th-century English philosopher who wrote—in a fashion reminiscent of *Rashomon*—the following:

Four persons of much the same age and temperament are travelling in the same vehicle. At a particular stopping-place it is intimated to them that a certain person has just died suddenly and unexpectedly. One of the company looks perfectly stolid. A second comprehends what has taken place, but is in no way affected. The third looks and evidently feels sad. The fourth is overwhelmed with grief which finds expression in tears, sobs, and exclamations. Whence the difference of the four individuals before us? In one respect they are all alike: an announcement has been made to them. The first is a foreigner, and has not understood the communication. The second has never met with the deceased, and could have no special regard for him. The third had often met with him in social intercourse and business transactions, and been led to cherish a great esteem for him. The fourth was the brother of the departed, and was bound to him by native affection and a thousand ties earlier and later. From such a case we may notice that in order to [experience an emotion] there is need first of some understanding or apprehension; the foreigner had no feeling because he had no idea or belief. We may observe further

that there must secondly be an affection of some kind; for the stranger was not interested in the occurrence. The emotion flows forth from a well, and is strong in proportion to the waters; is stronger in the brother than in the friend. It is evident, thirdly, that the persons affected are in a moved or excited state. A fourth peculiarity has appeared in the sadness of the countenance and the agitations of the bodily frame. Four elements have thus come forth to view.

The attempt to abandon emotion as a topic for scientific study—either by subsuming it within other concepts or by arguing that, being nonmaterial, emotion requires no explanation—seems to me to have been an historical aberration. This aberration, in the form of radical behaviorism, occurred during the early development of academic psychology, which was—except in North America—overly concerned with being ultrascientific in the image of the natural sciences. It was not a reflection of the main lines of thought that had existed for centuries and that have been restored in the last few decades (see also Reisenzein & Schönplflug 1992 for an account of Stumpf's late 19th-century cognitive theory of emotion, which has been given virtually no previous attention).

I entered academic psychology at the height of this movement which, as Deese (1985:31) put it, was dedicated to “the abolition of mind.” Psychology was separated from the philosophy departments of modern Western European and North American universities, within which it had traditionally been included, and psychologists were enjoined (this I vividly remember) to avoid “armchair” speculation in the interests of being empirical scientists. Only in recent years have most psychologists once again been willing to see value in philosophical analyses, to take on large-scale theory, to take seriously observations that are not obtained through laboratory experiment, to engage problems of subjective meaning, and to avoid the sterile scientism of the recent past.

The political and social changes my generation has lived through have been profound—the Great Depression, World War II, the advent of rockets, jet planes, atomic energy, and television. Today we observe with awe the profound political changes in Eastern Europe after the collapse of the Soviet Empire, as well as transformations in Asia and the Middle East. And we are correctly told that even the near future is impossible to predict with confidence.

We have lived through similar monumental changes in the way psychology and its cognate social sciences go about their scientific business. These changes have been no less extraordinary than the political and social ones. They are manifest in the problems being studied and the mindset for studying them. I have tried to reflect them in a small way in my discussion of stress and the emotions. Research and theory on the emotions are beneficiaries of this changing epistemology. Though fads and fashions in psychology have waxed and waned rapidly in the recent past, I believe the emotions are too central to human adaptation for the current enthusiasm to disappear soon. I would certainly like to be around to know.

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