THE SELF-CONCEPT, THE TRAUMATIC NEUROSIS, AND THE STRUCTURE OF PERSONALITY

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INTRODUCTION

For more than a decade I have been constructing a theory of personality that I refer to as Cognitive-Experiential Self-Theory. This is not the place for a detailed review of the theory. Summaries are available elsewhere (Epstein, 1973, 1980), as are detailed discussions of selected aspects of the theory (Epstein, 1976a, 1979a, 1979b, 1980, 1983a, 1983b, 1985, 1987; Epstein & Erskine, 1983). For present purposes it will suffice to present a very brief overview of the most basic assumptions of the theory followed by a more detailed discussion of aspects of the theory that are particularly relevant to an understanding of post-traumatic stress disorder (PTSD).

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The most fundamental assumption of the theory is that everyone constructs a personal theory of reality that contains subdivisions of a self-theory and a world-theory. As the constructs of a personal theory of reality exist at a preconscious level of awareness, an individual cannot necessarily accurately report the content of his or her theory if asked to do so. A personal theory of reality determines how a person selectively attends to experience, encodes it into schemas, and files, organizes, and selectively retrieves the schemas in a manner that facilitates coping with reality. Thus, a preconscious theory of reality determines to a very large extent how a person perceives, thinks, feels, and behaves. Coping with reality entails attempting to fulfill the basic functions of a personality theory of reality, which are to maintain a favorable pleasure-pain balance over the anticipated future, to assimilate the data of reality into a cohesive, relatively stable conceptual system, and to maintain a favorable level of self-esteem. Behavior is normally a compromise among these three functions. It should be noted that a personal theory of reality is not the equivalent of a person's entire personality. Although it is a major part of the personality, it is less than the whole, for personality also includes conscious and unconscious, as well as preconscious, functions.

Like the growth of a theory in science, a personal theory of reality develops through the interaction of conceptualization and exposure to the data of experience. If all goes well through the processes of assimilation and accommodation (Epstein & Erskine, 1983; Piaget, 1954)—through assimilating experience into the extant conceptual system and modifying the conceptual system to assimilate otherwise unassimilable experiences—the conceptual system becomes increasingly differentiated and integrated and is able to fulfill its functions with increasing efficiency. However, all may not go well. If the theory is unable to fulfill any of its functions because of an incompatibility between the environment and the individual, the structure of the conceptual system is placed under stress, subjectively experienced as anxiety. If the stress cannot be reduced enough through behavioral or cognitive coping, disorganization ultimately occurs. Disorganization provides an opportunity for a new organization to emerge that can more successfully fulfill the three basic functions. Disorganization, accordingly, can be viewed as a natural process that evolved because of its adaptive value in correcting a poorly organized conceptual system that cannot efficiently be corrected through piecemeal learning (Epstein, 1976, 1979a).

How does one establish the validity of assumptions in a theory of reality that are as basic as the ones I have described? It is obviously beyond the boundaries of ethical conduct to engage in laboratory research designed to destabilize a person's personality structure in order to study that structure. Moreover, even if ethical concerns were not of concern, it would be no simple matter to produce such changes, as powerful forces within the personality would resist disorganization. The major theme that will be pursued in this article is that PTSD provides a natural laboratory for examining some of the assumptions of Cognitive-Experiential Self-Theory. A corollary theme is that Cognitive-Experiential Self-Theory, assuming it has some validity, can elucidate the nature of PTSD.

Before examining the relation of Cognitive-Experiential Self-Theory to symptoms of PTSD, it will be helpful to review two basic features of the theory in greater detail. One concerns the nature of the preconscious and, relatedly, of what I refer to as the experiential conceptual system, and the other concerns the functions of a personal theory of reality and the cognitions associated with them.

COGNITIVE-EXPERIENTIAL SELF-THEORY

Levels of Awareness and the Experiential Conceptual System

Figure 1 contrasts the views of Cognitive-Experiential Self-Theory on levels of awareness with the views of two major alternative positions. According to psychoanalytic theory, the wellsprings of behavior lie in unconscious motives. The preconscious, which is assumed to operate by the same rules of logic as the conscious mind, serves only as a way-station and gatekeeper between the conscious and unconscious levels of awareness. It has no agenda of its own. Conscious behavior is viewed, from the psychoanalytic perspective, as the tip of an iceberg. The deeply submerged unconscious constitutes, by far, the greatest portion of the iceberg, and the preconscious encompasses a relatively small submerged area in contact with the surface.

Social and behavioral theories take a view opposite to psychoanalysis on levels of awareness. They emphasize conscious processes and ignore or consider relatively unimportant preconscious and unconscious processes. Moreover, they tend to equate cognition with consciousness. Thus, if a person is unable to report the presence of a memory or process, they assume it exists, if at all, within a noncognitive system (e.g., Zajonc, 1980). The emphasis on conscious processes in social psychological theorizing has resulted in the development of diverse self-report inventories for assessing attitudes and beliefs.

Cognitive-Experiential Self-Theory acknowledges the importance of unconscious and conscious processes, but considers them to exert less influence on everyday behavior than preconscious processes. Preconscious cognitions are viewed as the hidden background that determines the automatic assessment of events and the direction of most behavior. Because people are not normally aware of their preconscious constructs, but only of their conscious assessments of their behavior, they tend to assume their behavior is more rationally determined than it is; that is, they rationalize their behavior. Accordingly, the significance of the preconscious is a well-kept secret. Despite its recognition by some students of emotion (e.g., Arnold, 1970; Averill, 1982; Lazarus, 1966;

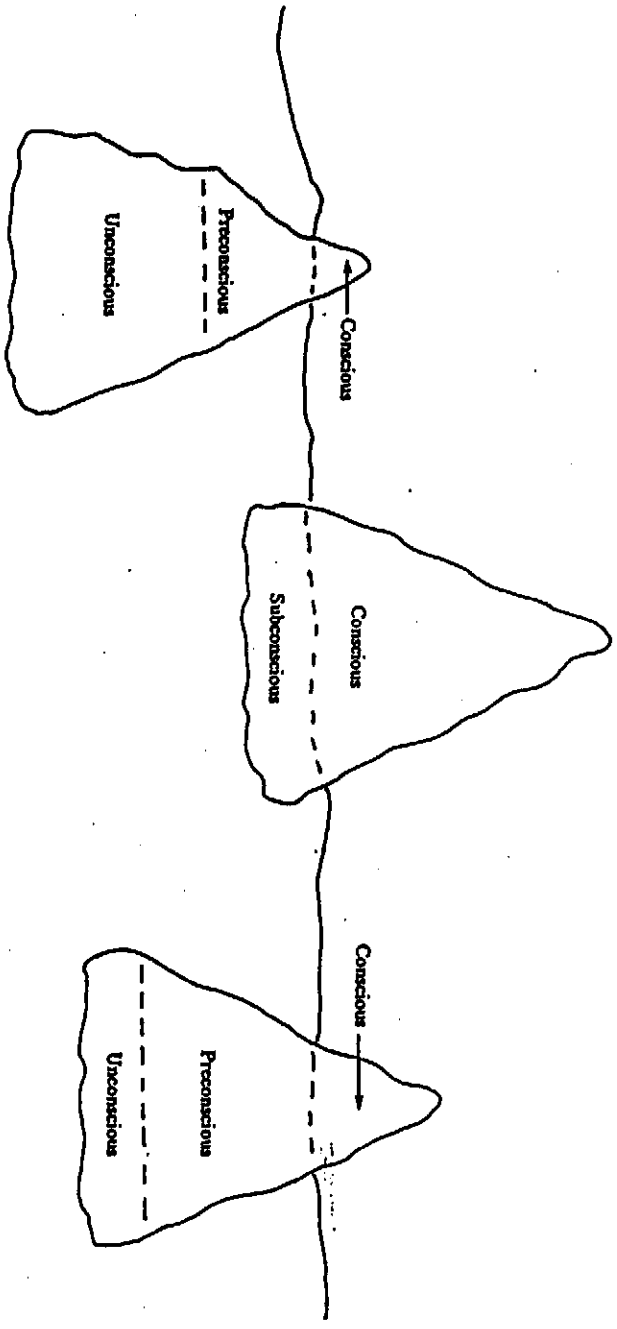

Figure 1. Three Major Views on Levels of Consciousness

Mandler, 1984; Solomon, 1976) and cognitive therapists such as Beck (1976), Ellis (1962), and Meichenbaum (1977), it has not, with the exception of Cognitive-Experiential Self-Theory, been accorded a major role in any general personality theory.

Although levels of consciousness have thus far been discussed as if they described distinct conceptual systems, this was resorted to only to simplify communication. It is more useful to use the terms preconscious, conscious, and unconscious descriptively to refer to different levels of accessibility and to use other terms to describe three different systems, each with its own rules of logic. The word 'conscious' will henceforth be used to refer to whatever is in a person's immediate awareness, 'preconscious' to material that, although not in immediate awareness, can readily become so through an act of attention, and 'unconscious' to material that is difficult to access, which can arise for a number of reasons, such as memory traces that were initially weak or that have faded in time, material that is incongruent with conscious schemas, or material that is repressed because it is emotionally unacceptable. There are three different conceptual systems, each of which operates primarily, but not exclusively, at one of the levels of consciousness. The rational conceptual system operates mainly at the conscious level of awareness, the experiential conceptual system at the preconscious level of awareness, and the associationistic conceptual system, which will not concern us here, at the unconscious level of awareness.

Since the constructs of a personal theory of reality exist in the experiential conceptual system, it is important to differentiate the rules of logic of this system from those of the rational conceptual system. This has been done in Table 1. The essence of the experiential conceptual system is that it is closely tied to emotional experience and facilitates rapid action. Given the existence of two different conceptual systems, it follows that learning that occurs in one system is somewhat independent of learning that occurs in the other system. Thus, beliefs that are derived from significant emotional experience may not be readily affected by rational considerations, but may require experiential counter-learning, or its equivalent, before they can be changed. This conclusion has obvious implications for the learning of symptoms and maladaptive behavior patterns and for their treatment.

The experiential conceptual system is concerned with immediate adaptive action, and therefore is a more primitive system that requires less complex processing of information than the rational conceptual system. It is a system that exists in subhuman animals, and is modified by the availability of language in humans. The rational conceptual system, on the other hand, is dependent on the use of language and conventional rules of logic and inference. It is therefore a system suitable for complex problem-solving and for drawing fine distinctions, which makes it impractical for action in emergencies. Moreover, because it relies on abstractions and conventional language symbols, it is

Table 1. Comparative Features of the Experiential and Rational Conceptual Systems

	Experiential Conceptual System	*Rational Conceptual System*
1.	Tied more closely to immediate, affective experience.	More abstract and removed from direct experience.
2.	Mediated by preconscious thought and imagery associated with past emotional experience.	Mediated by conscious use of conventional symbols and logic.
3.	Action oriented.	Thought oriented, analytic, contemplative.
4.	Loosely integrated; exhibits dissociated emotional states that function as self-contained conceptual systems.	More integrated and internally consistent.
5.	Decisions more apt to be categorical and represent the extreme ends of a dimension. Yes-no decisions rather than qualified judgments.	Decisions more apt to be dimensional, differentiated, and qualified.
6.	Broad generalization gradients. The more intense the emotional experience, the broader the generalization gradient.	Hierarchical generalization gradients, variable in breadth. Higher level abstractions have broader generalization gradients.
7.	Experienced passively, as automatic reactions.	Experienced as thoughts that are under one's volitional control.
8.	Self-evident validity. "Feeling is believing."	Validity is viewed as requiring proof in the form of evidence and logical inference.

removed from feelings. By failing to take feelings into account, it can come to inappropriate solutions for solving problems of human relationships in everyday life. Thus, the two systems each have distinct virtues and limitations, and can best be used in conjunction with each other.

The difference between the rules of logic in the two systems can be detected by observing people's thinking when they are emotional and unemotional. In fact, it is through an analysis of people's reasoning when responding to a highly emotional issue that the rules of logic listed in Table 1 were tentatively formulated. Of course, the fact that emotions influence thinking could as readily be explained by regarding emotions as a parameter of one system as by assuming the existence of two systems (Tomkins, 1980). Evidence of the existence to two systems is provided by the opposite views people hold with respect to certain events, such as riding in an airplane. A person may intellectually know that journeying by air is safer than journeying by car, yet emotionally feel the opposite. These are two opposite assessments, one

associated with emotions and the other with cool logic. A further example is a comparison of the knowledge that one can be mugged with the experience of actually having been mugged on beliefs as manifested in relevant actions. The experientially derived knowledge influences behavior very differently from purely intellectual information. Perhaps the most convincing evidence of the existence of two systems is that they can be observed in active conflict with each other. Consider the case of a student who experiences a conflict between going to the movies and studying. Assume the student resolves the conflict by deciding to study. Such a student might say "I felt like going to the movies, but I made myself study." Now, how can the self make the self do something that the self does not want to if there is a single self? Who is making whom do what? It is as if the student were talking about two different people, one concerned with immediate gratification and the other with long-term consequences. The different entities are not different people but different conceptual systems within the same person. Another example is a person who strongly believes violence is wrong but is capable of physically attacking someone when angry. The experiential conceptual system operates according to what "feels" right at the moment, as it is tied to emotions, and the rational conceptual system by what is intellectually judged right, which takes into account more long-range considerations.

The Three Basic Functions of a Personal Theory of Reality

According to both psychoanalytic and behavior theory, the need to obtain pleasure and avoid pain is the most basic of all motives. According to phenomenological theories (Lecky, 1945; Rogers, 1951; Snygg & Combs, 1949), the need to maintain the coherence of an individual's conceptual system for assimilating reality is the one most basic need. According to theories of Adler (1954) and Allport (1961), the need to maintain a favorable level of self-esteem is the one most basic need. Which position is right? From the viewpoint of Cognitive-Experiential Self-Theory, the three motives are equally important. Although the need to obtain pleasure and avoid pain can be said to be more fundamental than the other needs in a developmental sense, because it existed before there was a conceptual system and self-esteem to be enhanced and protected, once a conceptual system is formed, either of the other needs can dominate the need for obtaining pleasure and avoiding pain. Which function is dominant varies among individuals and within individuals over time. One individual may be characterized by a dominant need to enhance self-esteem, another by a need to expand the range of applicability of his or her conceptual system, and a third by a need to seek pleasure and avoid pain. Under appropriate circumstances, each could shift to the position of the other. For example, should the stability of the conceptual system of an individual who

is normally motivated primarily to seek prestige and enhance self-esteem be seriously threatened, the need to maintain stability would likely become prepotent over the need to enhance self-esteem. As a further example, consider the relative strengths of the needs to avoid pain and to maintain self-esteem. Torture might induce one individual to sacrifice his principles or pride, while another would sooner die than violate either.

The three basic functions, although independent, are interrelated. A sufficient influence on any one motive is likely to have a ripple effect on the others. This is because a personal theory of reality is highly integrated. Thus, although its basic components are somewhat independent, they are also interrelated, and a person with a well-adjusted personality normally maintains a balance among all three functions. The individual must function as a unity if he or she is to adapt efficiently to life's demands. Each function exerts its influence on behavior in proportion to its significance for the individual under the circumstances. Behavior is normally a compromise among the three functions. Such a compromise is adaptive, as it provides a series of checks and balances, reducing the likelihood that any one function will exert a disproportionate influence on behavior. For example, the need to enhance self-esteem is limited by the need to assimilate experience realistically and the need to avoid the pain of disappointment that would follow if sights were set too high. Accordingly, delusions of grandeur are a rare occurrence, and when they occur are regarded as pathological. The three basic functions are also interrelated because of their direct influences on each other. Pleasure is usually experienced when there are elevations in self-esteem and when previously unassimilable material is assimilated. Distress is experienced when self-esteem is diminished or when there is a failure in assimilation. Failure in assimilation may reduce self-esteem, and successes in assimilation will tend to enhance it. Finally, the three functions are related because of their common influence on disorganization of the conceptual system and because of the influence of disorganization on them. When any of the functions of a personal theory of reality cannot be fulfilled, the entire system is subjected to a tendency to disorganize, which interferes with the ability of the system to carry out all its functions.

Associated with the three basic functions of a personal theory of reality are three basic beliefs. The basic beliefs correspond to preconscious assessments by a person of his or her status on bipolar dimensions related to the three basic functions. Associated with the function of maintaining a favorable pleasure-pain balance is a belief regarding the benevolence versus malevolence of the world. Associated with the function of assimilating the data of reality is the belief that the world is meaningful (including predictable, controllable, and just) versus meaningless (including capricious, uncontrollable, and unjust). Associated with the function of maintaining a favorable level of self-esteem is the belief that the self is worthy (including competent, lovable, good, powerful, and attractive) versus unworthy (including inadequate, unlovable, bad, helpless, and unattractive). When a self-theory is unable to carry out any of its functions, there is a corresponding shift in a negative direction in the preconscious beliefs associated with the function. If the change is great enough, there is apt to be some change in the other beliefs as a result of the interrelatedness of the beliefs. Of course, the strongest change will usually occur in the function that is most directly affected by a particular situation. However, this will not always be the case, since how much a belief is affected will depend not only on the eliciting situation but also on the sensitivities of the individual as the result of past experiences.

Having provided some background, we are now in a position to examine the traumatic neurosis from the perspective of Cognitive-Experiential Self-Theory.

POST-TRAUMATIC STRESS DISORDER

The Traumatic Neurosis as a Natural Laboratory for the Study of Personality

In order to examine the structure of atoms, an atom-smasher can be used. By the same token, if a personality smasher were available, it could be useful in laying bare the structure of personality. I believe there are at least two naturally occurring personality smashers, acute schizophrenic disorganization and PTSD. Elsewhere (Epstein, 1979a), I have discussed acute schizophrenic disorganization from the perspective that it is a naturally occurring adaptive reaction that, by disorganizing the personality, provides an opportunity for a new, more effective organization to emerge. The nature of the disorganization and reconstructive processes, I argued, provide highly revealing information on the structure of personality. I see PTSD in a similar light. However, in PTSD one observes not the complete dismantling of a conceptual system, but a system under threat of disorganization as some of the most basic constructs in the system are under assault, and the individual is faced with the task of accomplishing a significant reformulation of basic views about self and world. As a result, the study of PTSD should be particularly useful for revealing the nature of the most basic beliefs in personal theories of reality.

The view of PTSD from the perspective of Cognitive-Experiential Self-Theory can be summarized as follows. The traumatic neurosis is produced by a threatening event that invalidates, at a deep experiential level, the most fundamental beliefs in a personal theory of reality, which are related to the three basic functions of the theory. It will be recalled that the three basic functions concern the assimilation of the data or reality, the maintenance of a favorable pleasure-pain balance, and the maintenance of a favorable level of self-esteem. It will also be recalled that the three corresponding beliefs

concern the degree to which the world is viewed, on bipolar dimensions, as benevolent, or a source of pleasure, versus the opposite; as meaningful (including predictable, controllable, and just), versus the opposite; and the self as worthy (including lovable, good, and competent), versus the opposite. When a basic belief is invalidated, it is as if a foundation card in a house of cards had been removed. The entire conceptual system is destabilized and, in order to reestablish stability, fundamental beliefs must be modified so that the unassimilable experience can be assimilated. That is, accommodation must take place, which usually requires some degree of reorganization of the conceptual system.

The view that an understanding of the traumatic neurosis can elucidate the nature of personality structure is not new. It has been advanced by theorists from as diverse perspectives as psychoanalysis (Freud, 1920/1959; Fenichel, 1945) and phenomenology (Lecky, 1945). Even the view that the essence of the traumatic neurosis lies in the invalidation of fundamental beliefs is not new. A similar idea was suggested some time ago by Lecky (1945) and, more recently, by Epstein (1981), Horowitz (1979), Janoff-Bulman (1985), and Wilson (1980), among others.

The Nature of Anxiety and its Mastery

Before discussing reactions to traumatic events, it will be helpful to consider how ordinary degress of threat are experienced and mastered. It will then be possible to determine which symptoms of PTSD are common to threatening experiences in general and which are unique to PTSD, thereby elucidating the nature of trauma. Let us begin with an example from my own recent experience. Not long ago, my wife and I were canoeing on a local stream that was swollen with the spring runoff. As we came around a bend, we saw a fisherman in hip boots standing in the middle of the stream. It was a graceful sight, and he must have thought the same of us, for he waded ashore, set his rod down with his line trailing in the water, picked up a movie camera and proceeded to film us. The canoe moved rapidly downstream, soon joining the current in which his line was trailing. Suddenly, the line slipped over the canoe and across my chest. I realized the hook would soon be upon me, so I grabbed the line with the intention of releasing it over my head. However, I had no time to do so, for the hook appeared almost immediately. I froze for a moment, the line tightened, and, as is characteristic of nylon lines, fortunately stretched. When the hook was within inches of my hand, I let go, and the line, with a disconcerting twang, shot past my face, missing it by inches. For the next few days, the incident kept returning to mind, making me shudder at the thought of what could have happened. Over and over again I reviewed the situation, imagining all kinds of possibilities and what I might to do to cope with them. What if the hook had embedded itself in my face? Would it have been desirable

to jump into the water to prevent it from tearing flesh? What if a similar situation were to arise in the future? Should I keep a knife handy to cut the line, or would it take too long to reach it? Perhaps it would be better to deflect the line with a paddle and not grab it. Even after exhausting all possibilities many times over, the memory of the situation kept returning, particularly if reminders appeared, such as driving alongside a stream or seeing a canoe on the roof of a passing car. It took months before the reaction dissipated. However, it still appears, on occasion, when cues are particularly strong.

A number of principles about anxiety and its mastery are illustrated in the above example. A generalization gradient of anxiety was developed in relation to the event. Such a gradient is adaptive in that it provides an early warning system that alerts the individual whenever relevant situations arise. Spontaneous intrusive imagery occurred, and it, too, is adaptive, as it forces the individual to thoroughly examine the situation, so that all possible adaptive reactions are considered. In time, so long as there are no recurrences, the anxiety gradient lowers, the intrusive imagery all but ceases, and the event can be recalled without experiencing highly disturbing feelings. What is the explanation of the decrease in anxiety? The usual explanation is that extinction or habituation has occurred. But what is extinction or habituation? They are nothing more than words that describe the dissipation of the anxiety response. They explain nothing, but themselves require explaining. Let us thus examine what is known about habituation. The issue would essentially be the same if we considered extinction. Habituation occurs when a stimulus has no further information to impart. Accordingly, the individual loses interest in it and is able to attend freely to other stimuli. In the situation described, habituation occurred when the threatening event was reviewed until there was nothing new that could be learned from it. As extra insurance against abandoning an anxiety reaction too precipitously, habituation does not occur once and for all, but the anxiety response repeatedly recovers, each time in reduced degree, so long as it is not reinforced. Moreover, sensitivity to the threatening situation never entirely disappears, and the potential for the anxiety reaction to reappear remains. Apparently nature is conservative when it comes to coping with threat, and does not allow important lessons from the past to be completely discarded.

Mastery of anxiety to a threatening event can be said to have occurred when an individual has done the work of thoroughly exploring the situation with respect to its meaning, including its implications for cognitive and behavioral adaptive action. The result is that reactivity to the event is diminished and remains restricted to the source of the threat.

The Nature of Trauma

As a result of experiencing and mastering threat, the person becomes a more anxious but wiser person. An adaptive resolution confines the anxiety to the

threat that was actually experienced. The individual learns that a particular situation is dangerous, but does not conclude that life itself is dangerous. That is, the new cognition is a relatively peripheral one that has little bearing on the individual's central beliefs about self and world. As will be seen shortly, this is one of the factors that is assumed to distinguish trauma from lesser forms of threat. Let us now consider how the canoeing incident could have developed into one of traumatic intensity. Assume that the hook had embedded itself in my face and, to keep it from tearing flesh, I had jumped into the water. Assume further that, in doing so, I hit my head on a boulder and nearly drowned, and that, upon awakening in a hospital and asking for my wife, I was told that she had drowned in attempting to rescue me. Such an experience could suddenly and drastically challenge my most basic views about the nature of reality. If all that appeared secure and benign at one moment can be capriciously destroyed in the next, what stability can there be in life? The world that I previously believed was meaningful, predictable, just, and that smiled on me kindly, has suddenly been transformed into one that is evil and unpredictable. Nor does my view of myself remain unscathed, for I no longer can consider myself as the worthy, competent person I once thought myself to be. Given what the world could so easily do to me, I am obviously relatively weak and helpless, and of no great importance in the overall scheme of things. And I may even be culpable, for had I been more resourceful, my wife would not now be dead. Deeper stirrings from my unconscious mind may also arouse thoughts that were I not guilty, I would not have been so punished. In summary, my beliefs about the world and myself could be radically altered. Given the suddenness and unexpectedness of what happened, I might well not be able to assimilate the new beliefs into my old conceptual system without destabilizing it. The result would be that I would experience a full-blown traumatic neurosis.

Symptoms of PTSD Inferred from Cognitive-Experiential Self-Theory

That the instigating condition in PTSD is psychological, not physical, is made evident by a number of observations. One is that the threat of injury is sufficient to produce the disorder. A second is that negative experiences that are not associated with physical injury, such as loss of a loved one, can produce the disorder. A third is that surprise and lack of preparation are important contributing factors to the instigation of PTSD, which is consistent with the conclusion that the disorder is a consequence of a failure in assimilation. A fourth is that, holding physical injury constant, the degree of the disorder is greater if the trauma is produced by human intention, as in torture, than if it is produced by an impersonal event, such as a natural disaster (American Psychiatric Association, 1980). A fifth is that the occurrence of the disorder in warfare can be contingent on secondary gain. It is noteworthy, in this respect,

that Freud (1920/1959) observed that wounded soldiers tended to be protected from traumatic neurosis. Although his explanation was in terms of the redirection of cathexis, a more plausible explanation is that a wounded soldier knows he will be removed from combat.

As for the symptoms of PTSD, they are varied and can arise from several different sources. The most direct symptoms consist of intense anxiety, a broadened and heightened gradient of anxiety to trauma-relevant cues, and the occurrence of intrusive imagery. As previously illustrated, these symptoms are shared with those produced by nontraumatic levels of threat. As a result of these symptoms, all of which contribute to aversive levels of anxiety, additional symptoms occur that represent attempts of the organism to reduce the anxiety. These symptoms consist of behavioral avoidance and withdrawal responses and of reflexive inhibitory reactions that protect the cerebral cortex from overstimulation (Pavlov, 1927; Sargant, 1957). Thus, symptoms of excessive excitability and reactivity may alternate with symptoms of emotional numbing and reduced alertness (Epstein, 1967; Horowitz, 1979). Associated with the blunted reactivity may be symptoms of cognitive deficit, such as confusion and memory impairment, that imply the existence of cortical inhibition.

Symptoms that are unique to the traumatic neurosis are those associated with the invalidation of basic beliefs, the consequent disruption of the individual's conceptual system, and attempts to establish a new, or modified, conceptual system capable of assimilating the traumatic experience. As previously noted, the three most basic beliefs in a personal theory of reality that are invalidated by a traumatic experience are that the world is benign, that the world is meaningful, and that the self is worthy. Disorganization, confusion, and other symptoms of mental impairment are contributed to by the invalidation of these basic beliefs. The loss of meaning and the consequent anxiety about losing one's mind provide yet another source of symptoms. Other symptoms are produced by new, opposite beliefs to those listed above, inductively derived from the traumatic experience, namely that the world is malevolent, meaningless, and capricious, and that the self is weak and helpless. The extent to which each of these beliefs is implicated will vary with the nature of the trauma, such as whether it was perpetrated by others, by an act of nature, or by the individual's own behavior. Nevertheless, an examination of research on trauma reveals that all three basic beliefs tend to be implicated in all kinds of trauma (e.g., Berglas, 1985; Ellis, 1983; Fischer & Wertz, 1979; Janoff-Bulman, 1985; Taylor, 1983; Wilson & Krause, 1982). This, of course, supports the assumption in Cognitive-Experiential Self-Theory that a personal theory of reality is an integrated, interdependent system. Finally, there are symptoms that are produced by attempts to cope with the world and the self as newly perceived. These symptoms, which correspond to specific styles of relating to the world and the self, such as by withdrawal, aggression, and "embracing the trauma," will be discussed later.

How do the above symptoms inferred from theory correspond to the symptoms reported in empirical research on PTSD? As already noted, such a comparison has implications for the validity of the theory from which the inferences were made. Moreover, to the extent that the theory is valid, it can provide a theoretical framework for organizing the empirical observations and, relatedly, for uncovering gaps in the observations reported.

Empirically Observed Symptoms of PTSD

The DSM-III Criteria of PTSD

Under the heading, *Post-traumatic Stress Disorder*, DSM-III (American Psychiatric Association, 1980) the following major characteristics of the disorder are listed: (1) reexperiencing the traumatic event, (2) numbing of responsiveness and reduced reactivity to the external world, and (3) a variety of automatic, dysphoric, and cognitive symptoms. Specific symptoms are described as intrusive recollections, nightmares, emotional numbing, estrangement from people, inability to derive enjoyment from living, heightened autonomic arousal, memory defects, difficulty in concentrating, guilt, sensitization to cues associated with the trauma, and dysphoric emotions, including depression, anger, and anxiety. Criteria for arriving at a diagnosis of PTSD are listed as: (1) the existence of a stresser that would evoke symptoms in almost anyone; (2) reexperiencing the trauma in the form of intrusive recollections, recurrent dreams, or the feeling that the trauma is recurring in the presence of a relevant thought or external stimulus; (3) numbing or reduced involvement with the external world, beginning some time after the trauma, and indicated by diminished interest in significant activities, by feelings of estrangement from others, or by constricted affect; (4) at least two of the following, not present before the trauma: hyperalterness or exaggerated startle, sleep disturbance, guilt for behavior or for having survived, memory impairment or trouble concentrating, avoidance of events that could arouse recollection of the trauma, intensification of symptoms by exposure to reminders of the trauma.

It is apparent that the symptoms reported in DSM-III and those inferred from Cognitive-Experiential Self-Theory correspond closely, with three notable omissions in the DSM-III symptoms. One is that the symptoms in DSM-III include no reference to loss of meaning or confusion that might be expected from the invalidation of a personal conceptual system. The second is that no mention is made of maladaptive beliefs. The third is that no mention is made of maladaptive life-styles, or ways of coping life, as a result of the changed beliefs, which will be discussed later. It remains to be determined whether the discrepancies can be attributed to a failure in Cognitive-Experiential Self-Theory or to important omissions in DSM-III.

The Wilson and Krause Study of PTSD

Wilson and Krause (1982) examined the responses of 114 Vietnam combat veterans to a variety of self-report questionnaires. They obtained a wide range of data, including information on symptoms of PTSD, on personality characteristics before and after Vietnam, on background historical variables, on experiences in Vietnam, and on perception of reception at homecoming. For present purposes, it will suffice to focus on their factor analysis of symptoms. I have arranged the items in the first factor in Table 2 according to their relevance to the functions of a personal theory of reality. The first factor provides striking confirmation of the three basic beliefs in a personal theory of reality. One group of items refers to loss of meaning, including feelings of uncertainty and an inability to control important events in one's life. Reference to a loss of one's soul corresponds to loss of a personal theory of reality (Epstein, 1973). A second cluster of items in Factor 1 refers to a loss of self-esteem, and a third to an unfavorable pleasure-pain balance and, by implication, an unrewarding world. A fourth, alienation from people, points to a possible omission in Cognitive-Experiential Self-Theory, namely that a fourth basic need is required, the need for relatedness. I had assumed that the influence of others on an individual's personality was taken into account by my treatment of self-esteem, which I viewed as an internalization of evaluations by significant others. The theory failed to consider that people have a need to relate to others independent of the need for self-affirmation.

A moment's reflection reveals that the need for relatedness cannot be subsumed under self-esteem, for people have a need for others even when self-esteem is not implicated, as when people feel lonely in the absence of feeling inadequate or unloveworthy. The work of Bowlby (1973) on anxiety and depression following loss of relationships in children, of Harlow (1971) on abnormalities produced in infant monkeys when they are raised by unresponsive, mechanical mothers, and of Spitz (1945) on the withering away of infants whose physical needs are supplied in the absence of human caring, all attest to the fundamental nature of the need for relatedness. Accordingly, the need for relatedness will henceforth be included as a fourth basic need in Cognitive-Experiential Self-Theory.

It is noteworthy that the four components in Factor 1 did not fall out as separate factors, but were sufficiently interrelated to be included in a single factor. Thus, the results provide support of the view that a personal self-theory is highly integrated, and that when any of the basic beliefs drastically change, the other basic beliefs also tend to change.

Two other factors in Table 2 are associated with anxiety and anger. Since Factor 1 includes depression, all three primary dysphoric emotions are represented. It is noteworthy that the anxiety factor, in addition to including symptoms of physiological arousal, includes symptoms of cognitive deficit. A

Table 2. Wilson and Krause's Factor Analysis of Self-report Items of Symptoms of PTSD in Vietnam Veterans

	Factor Loadings
Factor 1 (18%): Identity Confusion, Depression, Alienation	
Meaning (Assimilation)	
1. Feeling life has no *meaning*	.78
2. Experiencing self-doubt and *uncertainty*	.74
3. Feeling you can't *control* important events in your life	.70
4. Feeling that Nam took away your *"soul"*	.48
Self-esteem	
1. Not feeling satisfied with yourself	.73
2. Feeling that you are no good and *worthless*	.71
3. Not feeling *proud* of yourself	.70
4. Feeling like a *failure*	.66
Dysphoric Emotions (Pleasure-pain balance)	
1. Feeling that *nothing matters* anymore	.68
2. Feeling *numb* or nothing inside	.55
3. Feeling *depressed*	.50
4. *Suicidal* thoughts	.40
Alienation from people (Relatedness)	
1. Feeling *alienated* from people	.63
2. *Mistrusting* what others say and do	.62
3. Feeling like *withdrawing* from others	.53
4. Feeling an inability to be *close to someone*	.47
Factor 2 (11%): Anxiety (Basic Emotion)	
1. Trouble getting your breath	.67
2. Heart pounding or racing	.64
3. Trembling	.64
4. Faintness or dizziness	.61
5. Problems concentrating	.50
6. Problems remembering	.53
Factor 3 (8%): Hostility (Coping By Moving Against Others)	
1. Feeling alienated from the government	.69
2. War-related thoughts	.58
3. Feeling you're being stigmatized for being a Nam vet	.58
4. Want to "kick some ass" for what happened in Nam	.56
5. Feeling like lost faith in people after Nam	.51
6. Fantasies of retaliation for what happened to you in Nam	.51
Factor 4 (7%): Intrusive Imagery (Incomplete Assimilation)	
1. Feeling guilt that a buddy was killed and not you	.74
2. Unable to express sadness over lost buddies	.68
3. Experiencing nightmares of the war	.50
4. Searching for ambush spots while driving	.50
5. Vietnam is still something you can't accept in your life	.49

(*continued*)

Table 2. (*Continued*)

	Factor loadings
Factor 5 (5%): Psychopathy (Coping by Embracing the Trauma)	
1. Need to seek out high degrees of "sensations" that are risky	.64
2. Need to engage in dangerous adventures	.61
3. Driving recklessly	.45
4. Using hard drugs to help you feel better	.40
5. Treating women like sexual objects	.39
Factor 6 (5%): *Anger, Rage* (Basic Emotion)	
1. Experiencing explosive anger	.75
2. Losing your temper and getting out of control	.69
3. Experiencing rage	.69
4. Getting into fights with others	.45
Factor 7 (4%): Intimacy Problems (Coping by Moving Away from Others)	
1. Feeling like you lost your romantic sexual sensitivity in Nam	.51
2. Experiencing problems being close to your father	.51
3. Experiencing problems being close to your mother	.48
4. Getting into fights or conflicts with loved ones	.48

Note: Adapted from Wilson and Krause (1982). The titles of the factors have been modified and only the items with the highest factor loadings have been included.

fourth factor includes symptoms of intrusion and symptoms indicative of incomplete assimilation. The other three factors refer to behavioral coping styles, namely hostility, or moving against others; rejection of intimacy, or moving away from others; and psychopathy, or "embracing the trauma," which requires further comment. Given an intense experience that can neither be defended against, ignored, nor assimilated, the individual is faced with the challenge of accommodating his or her conceptual system to make assimilation possible. One way to accomplish this is to "embrace the trauma," that is, to adopt a belief system and life-style that are fashioned around the traumatic experience. The problem of assimilation is thereby minimized, as the belief system has been made highly congruent with the trauma. Such a resolution is indicated in the behavior of Vietnam veterans who establish in civilian life an existence in which they deliberately engage in dangerous and self-destructive activities reminiscent of their Vietnam experience. We shall consider this coping style in greater detail later.

The results from the Wilson and Krause factor analysis thus provide the missing links from the DSM-III list of symptoms required to validate the derivations from Cognitive-Experiential Self-Theory. These include the three basic beliefs (unpleasurable world, loss of meaning, low self-esteem) and maladaptive life-styles that represent attempts to cope with the cognitive implications of the trauma.

Other Research Findings

A recent article by Janoff-Bulman (1985) reviewed studies of various kinds of victimization. Included were life-threatening diseases, criminal assaults, and technological disasters, such as the nuclear discharge at Three Mile Island. The major conclusion of the author was that "post-traumatic stress following victimization is largely due to the shattering of basic assumptions victims hold about themselves and their world" (p. 1). Three common basic beliefs were observed to change following an experience of victimization. These are the belief in personal invulnerability, the belief that the world is meaningful, and the belief that the self is worthy. Recovery, it was concluded, is contingent upon building a new assumptive world that can assimilate the victimization experience in an adaptive manner. Thus, the overall conclusions of Janoff-Bulman are in essential agreement with those derived from Cognitive-Experiential Self-Theory. Let us now turn to a more specific comparison of the beliefs that were assumed to be invalidated in the two positions.

The change from regarding oneself as invulnerable to regarding oneself as highly vulnerable following an experience of victimization corresponds, in Cognitive-Experiential Self-Theory, to the change from regarding the world as benign to regarding it as malevolent. These beliefs represent opposite sides of the same coin, for vulnerability can only be judged in relation to the environment. In a sufficiently benign world, no one would be vulnerable, and in a sufficiently malevolent world, everyone would be. Thus, the two positions are in essential agreement on this issue.

The two positions are also in agreement on the effect of trauma on self-esteem. It is, of course, not surprising that a decrease in self-esteem should occur in situations in which individuals have engaged in activities for which they can reasonably be considered culpable, such as behaving in a cowardly way or committing atrocities in war. What is surprising is that lowered self-esteem also occurs in individuals who, in no reasonable way, can be held responsible for the event that occurred, such as being raped. How is one to account for a widespread, irrational decrease in self-esteem in such circumstances? Part of the answer, at least, is that trauma, by its very nature, involves a condition of helplessness (Krupnick & Horowitz, 1980; Peterson & Seligman, 1983). To the extent that a person feels helpless, the person's assessment of his or her competence to cope with the world is necessarily diminished. Furthermore, the very symptoms of the traumatic neurosis are likely to add to a person's sense of inadequacy, as the person feels confused, unable to make sense of experience, and is beset with uncontrollable thoughts and feelings that are viewed as abnormal. Lowered self-esteem also often occurs because of "survivor guilt." In searching for meaning following a traumatic experience in which others have died or have been seriously injured, an individual who has been spared often thinks, "Why me?" Since it is apparent

that the individual who survived is no more deserving than those who died, it is but a short step to the conclusion that the individual who lived does not deserve to have done so. Guilt also arises because people make unreasonable demands upon themselves. For example, a young woman reports being torn with guilt because she was unable to save her boyfriend by opening the door of his car that was on fire. The police, who themselves could not pry the door open, finally had to drag her away before the car exploded. Another source of irrational, lowered self-esteem is that, following a tragedy, as in the above case, the person feels diminished by the loss to the self that has occurred. The person thinks, in effect, "Without this person, I am not whole, I am nothing." This general reduction in self-worth, if of sufficient magnitude, generalizes to other aspects of self-esteem, including competence, lovability, goodness, and body image. Some support for this hypothesis is provided by the positive interrelatedness of the different components of self-esteem (O'Brien, 1980). Another explanation is that people tend to believe in a just world (Lerner, 1980). They thus unconsciously assume they were deserving of whatever punishment they received. Whatever the explanation, a loss in self-esteem appears to be a highly prevalent symptom following a wide variety of traumatic experiences.

The theory-derived view and the empirical findings are also in agreement that trauma or victimization is intimately associated with the invalidation of basic beliefs, with a resulting destabilization of the individual's belief system, and with a compensatory search for meaning. According to Janoff-Bulman's review of the literature, up to the point of their victimization, individuals usually regarded their world as predictable, controllable, and just. These beliefs are shattered by the experience of victimization. The individual then seeks to find meaning in the experience and begins to construct a new assumptive model that can reestablish predictability, controllability, and a belief in the justness of the world. Thus, the two positions are in essential agreement on the basic need for establishing belief in a meaningful world.

There is one major difference between the two positions, and, ironically, it involves the belief concerning relatedness to others that I concluded should be added, and that is not mentioned in the Janoff-Bulman article. The invalidation of the belief that people are trustworthy and worth relating to was widely observed in Vietnam veterans with PTSD. The question remains as to how general the invalidation of this belief is in other traumatic neuroses. Obviously, such reactions are most apt to occur when other people are regarded as the perpetrators of the trauma, as in criminal assault. Yet, similar reactions are also reported in situtations where others have not been responsible. It is noteworthy, in this respect, that the item "feelings of detachment or estrangement from others" is listed in DSM-III as characteristic of post-traumatic stress disorder in general. One explanation for the widespread tendency for withdrawal and negative reactions to others following traumatic experiences is that it may be part of a general attempt to reduce stimulation

from all sources. Another is that people, in general, may be resented for not having been able to prevent the trauma or for not having been able to alleviate the distress produced by it. Such irrational reactions, as well as irrational guilt, very likely have their origin in childhood experiences, when individuals were, in fact, helpless and dependent upon others. As a trauma reduces adults to a condition of helplessness, dependency, and fear, it can reasonably be expected to activate childhood associations. It is noteworthy, in this respect, that soldiers have been known to cry for their mothers. In contrast to the tendency to withdraw from others and be antagonistic toward them, a tendency to reach out to people and be dependent on them is also observed following traumatic experiences (Janoff-Bulman, 1985). As noted above, the disappointment when others are unable to meet reasonable or unreasonable demands very likely contributes to withdrawal and antagonism. It will be interesting in future research to examine how widespread withdrawal and antagonistic tendencies are as reactions to traumatic experiences of various kinds and how such reactions relate to previous personality characteristics, past history, and prognosis. There is some evidence that people who maintain a trusting attitude toward others following highly distressing experiences are more apt to exhibit personality growth than those who tend to react with withdrawal and alienation from others (Epstein, 1979b).

Adaptive and Maladaptive Resolutions of PTSD

Given the invalidation of basic beliefs in a personal theory of reality, a state of disequilibrium is produced, characterized by intense anxiety, intrusive imagery, nightmares, confusion, and other acute symptoms associated with early stages of PTSD. The state of disequilibrium stimulates efforts to reestablish equilibrium, which requires the construction of a modified belief system that can assimilate the traumatic experience. Depending on the nature of the change, the resolution will either be successful or maladaptive, but, in any event, it will reduce the symptoms of the initial stage of disequilibrium. In this section, we shall consider a number of forms of resolution that can be expected on theoretical grounds. Several of the resolutions are assumed to develop around primary negative emotions and emotional reactions, including fear, anger, and withdrawal. All syndromes are presented in relatively pure form. In reality, mixed syndromes are more likely to occur, and resolution is often less than complete, as indicated by a continuation of symptoms of intrusive imagery, confusion, and fluctuations between inhibitory and excitatory states. A further consideration is that, particularly early in the process, one form of resolution may be replaced by another. We shall begin with a comparison of a state of adaptive resolution and a state of lack of resolution, and then proceed to different types of maladaptive resolution. Each of the different forms of resolution will be presented in terms of the

predominant beliefs that are characteristic of the new theory of reality and the associated symptoms and behavior.

Adaptive Resolution of PTSD

Table 3 outlines the characteristic beliefs and symptoms associated with constructive resolution of a traumatic experience, and compares them with those associated with a complete lack of resolution, a stage which was previously discussed. The essence of an adaptive resolution is the modification, or accommodation, of a belief system in a manner that permits realistic coping with, and enjoyment of, life, while recognizing its limitations. The individual learns to accept life with its imperfections, to recognize that although there

Table 3. Beliefs and Symptoms in Unresolved and Successfully Resolved Traumatic Neurosis

I. **Complete Lack of Resolution (Disorganization of the Conceptual System)**

A. Beliefs
1. World is unpredictable, dangerous, and uncontrollable
2. Self is weak, helpless, and unworthy
3. Others are malevolent, unhelpful, weak, or untrustworthy
4. Ways to cope: none

B. Symptoms
1. Confusion, disorganization, impairment of memory and concentration
2. Hyperalertness and elevated arousal
3. Intrusive imagery and broad anxiety gradient
4. Inhibitory and avoidance reactions to reduce anxiety
5. Dysphoric emotions: fear, anger, depression
6. Low self-esteem
7. Withdrawal from, and antagonism toward, people; alienation
8. Inability to establish intimate relationships

II. **Adaptive Resolution (Reorganization Through Differentiation and Intergration)**

A. 1. World is unpredictable, dangrous, and uncontrollable, *within limits*
2. Self is weak and helpless, *within limits*
3. Others are dangerous, uncaring, weak, or untrustworthy, *within limits*
4. Ways to cope: varied, flexible, discriminating, and accepting of others; assimilation and accommodation

B. Symptoms and Positive Consequences
1. Permanent sensitivity to trauma-relevant cues
2. Reduced security
3. Increased awareness; a "sadder but wiser person" who has come to terms with some major existenial problems in living, such as vulnerability, suffering, and death; good and evil; culpability and punishment; self-interest versus altruism; and independence versus relatedness

is malevolence and unpredictability in the world, there is also benignity and predictability; that although there are some who are untrustworthy and destructive, there are others who are trustworthy and loving; and that although the self is flawed, it is not unworthy or unredeemable. In short, the individual learns to view the imperfections in the world and the self as providing challenges that can give meaning and direction to life, rather than as sources of discouragement and embitterment. The person who experiences a trauma has no choice but to either grow from or be diminishesd by the experience, as the experience is too potent to be ignored. Expressed otherwise, according to the theoretical position advanced here, if some degree of accommodation of the conceptual system were not required, the experience would be less than traumatic. To successfully master a trauma, it is necessary to accommodate a personal theory of reality so that it can assimilate the trauma in a manner that makes life livable and worthwhile. This means cutting the inductively-derived beliefs from the traumatic experience down to size, so that they are recognized as only representative of part of reality, not all of it, and modifying the extant personality structure accordingly.

Forms of Maladaptive Resolution of PTSD

As previously noted, maladaptive resolutions not infrequently consist of behavioral patterns associated with specific emotions. This, no doubt, is because emotions are ready-made states that integrate perception, memory, affect, and behavior into dispositions to interpret and respond to the world in certain cohesive ways, and thus can provide a nucleus for the development of stable dispositions, corresponding to life styles. Such resolutions are maladaptive because they maintain a chronic state of anger, fear, or sadness, and provide an overly restricted and biased way of relating to the world. It remains for future research to determine why different individuals select different maladaptive styles of coping, and the role that the nature of the trauma plays in the selection. Factors worth examining in seeking an answer to these questions include premorbid personality characteristics, background history, the nature of the specific trauma, such as whether it involved loss of a loved one or threat to life, and the particular experiences during and following the trauma, including sympathetic and helpful responses from others or unsympathetic and harmful reactions. Some common forms of maladaptive resolution, to which we turn next, are presented in Table 4.

Resolution based on generalization of the fear response. One way of reorganizing the self-system is to assimilate the traumatic experience around a conceptualization of the world as threatening, and to then cope with it through continuous vigilance and readiness for defensive action. Such a resolution, like any other, introduces a measure of stability and coherence into the belief

Table 4. Beliefs and Symptoms in Maladaptive Resolutions of the Traumatic Neurosis

I. Resolution Based on Generalization of the Fear Response (Escape)

A. Predominant Beliefs
   1. World is dangerous
   2. Self is weak and vulnerable
   3. Others are dangerous or unhelpful
   4. Ways to cope: vigilance and escape

B. Symptoms
   1. Hyperalertness to danger of all kinds
   2. Sensitivity to trauma-relevant cues
   3. Chronic anxiety and elevated arousal
   4. Psychosomatic symptoms

II. Resolution Based on Generalization of the Anger Response (Moving Against Others)

A. Predominant Beliefs
   1. World is malevolent
   2. Self has been mistreated, exploited, deceived, or betrayed
   3. Others are unjust and untrustworthy
   4. Ways to cope: be strong, defend self, attack enemies

B. Symptoms
   1. Paranoid suspiciousness
   2. Antisocial acting out

III. Resolution Based on Generalization of the Withdrawal Response (Moving Away from Others)

A. Predominant Beliefs
   1. World is dangerous, ungiving, and uncontrollable
   2. Self is unworthy, unlopvable, and self-sufficient
   3. Relationships with others are dangerous
   4. Ways to cope: reject others, rely on own resources

B. Symptoms
   1. Withdrawal
   2. Alienation
   3. Incapacity for intimacy

IV. Resolution Based on Dissociation

A. Predominant Beliefs (two belief systems)
   1. Dominant belief system (same as before trauma, but with belief that trauma-relevant cues should be avoided)
   2. Dissociated belief system (same as for unresolved trauma)

B. Symptoms
   1. Dominant system (normal, except for constriction of behavior and affect)
   2. Dissociated system (same as for unresolved trauma)

(*continued*)

Table 4. (Continued)

V.	**Resolution Based on Embracing the Trauma**
A.	Predominant Beliefs
1.	World is dangerous, malevolent, and lacking in meaning
2.	Self is unloveworthy and lacking in purpose
3.	Others are untrustworthy and objects to be manipulated
4.	Ways to cope: avoid commitment, seek thrills, surmount fear by courting danger, change passive to active experience
B.	Symptoms
1.	Unreasonable risk-taking
2.	Antiphobic behavior, seeking out trauma-relevant activities
3.	Lack of commitment and direction
4.	Inability to establish intimate relationships

system. Unfortunately, it does so at a considerable cost, as the individual must maintain an attitude of hyperalertness, and is, accordingly, chronically anxious. As indicated in Table 4, characteristic beliefs associated with a resolution through fear are that the world is dangerous, the self is weak and vulnerable, and others are dangerous and/or unhelpful. Symptoms consist of hyperalertness to signs of danger, chronic anxiety, and elevated levels of physiological arousal and eventually psychosomatic symptoms.

Resolution based on generalization of the anger response. As in the case of fear, anger is a common reaction following trauma, and reaction patterns associated with it can thus become fixated as an enduring trait. Like other emotionally-based reactions, anger provides a ready-made way of interpreting the world and reacting to it. The individual who effects an adjustment around anger can be expected to hold on to his or her anger tenaciously, as surrendering it would jeopardize the stability of the person's conceptual system. A resolution around anger is attractive for two reasons. First, as already noted, it—like the other primary emotions—provides a framework for interpreting the world and reacting to it. Second, anger enhances self-esteem, as anger is predicated on the assumption that one is right and others are wrong (Beck, 1976; Epstein, 1973, 1983a, 1984). As shown in Table 4, the basic beliefs associated with a resolution based on anger are that the world is malevolent, the self has been wronged, and others are unjust, hostile, untrustworthy, or exploitative. The implications for coping, given such a world-view, are that one should be aggressive, take what is rightfully one's own, and attack those who have wronged one or who would do so if they could. The major associated symptoms are paranoid suspiciousness and antisocial acting out.

Resolution based on generalization of the withdrawal response. Withdrawal is a common reaction in PTSD for two reasons. One is that the individual feels overwhelmed with stimulation. In the absence of a coherent conceptual system for organizing experience, stimuli are experienced as excessively stimulating, and interacting with others can therefore be annoying and burdensome. People in such a state have a desire to be by themselves, to sort things out, and to not have demands made on them. A second reason for people wishing to withdraw is that they are threatened by people, either viewing others as dangerous and undependable, or as a source of rejection, disappointment, or ultimate loss. Such reactions occur not only when following situations in which relationships with others have been directly implicated, as in rape, or in which fellow soldiers have been lost, as in warfare, but also as the result of irrational expectations of others and consequent disappointment. Disappointments may arise from others' inability to prevent the trauma, alleviate the suffering that followed, or otherwise help cope with it. That such reactions can become part of a chronic personality style is illustrated by Vietnam veterans who continue to live alone in the woods more than a decade after the war has ended. As can be seen in Table 4, predominant beliefs associated with withdrawal as a mode of adjustment consist of the view that the world is dangerous, ungiving, and uncontrollable; the self is unworthy, unlovable, and can exist without others; and others are rejecting, disappointing, or untrustworthy, and thus undesirable to relate to. The desired mode of coping is viewed as avoiding relationships, as they can only lead to pain. Associated symptoms are withdrawal, alienation, and incapacity for intimacy.

Resolution based on dissociation. In resolving a trauma by dissociation, the person is able to maintain the stability of his or her original conceptual system by dissociating the new experience. The result is that it is not necessary to accommodate the conceptual system to assimilate the trauma, thereby avoiding anxiety and disorganization. The resolution consists of isolating memories of the trauma from the remainder of the conceptual system. Dissociation may occur as a cyclical reaction in which dissociation alternates with periods of vivid recollections of the trauma and heightened anxiety (Horowitz, 1979). As a temporary state, dissociation can serve an adaptive function by pacing the process of assimilation. Dissociation, when it becomes a chronic coping style, however, is clearly pathological, because it prevents assimilation from occurring.

With respect to the belief system of an individual who adjusts to a trauma through chronic dissociation, two belief systems have to be considered: the manifest belief system and the dissociated belief system (see Table 4). The beliefs in the dissociated system are the same as those listed in Table 3 under unresolved trauma. They consist of generalizations inductively derived from the traumatic experience, such as that the world is dangerous and

unpredictable; the self is helpless and unworthy; and other people are malevolent or unwilling or incapable of providing help. So long as the dissociation holds, the individual will be in a relatively placid state. However, the individual is carrying a time-bomb within his or her conceptual system. As a result of dissociating the memory of the trauma, the work of assimilation and accommodation cannot take place. Accordingly, when the dissociation breaks down, the individual is faced with the equivalent of a recurrence of the trauma. The symptoms experienced are then the same as those listed in Table 3 under unresolved trauma. Nor is the individual completely normal when the dissociation remains in place, for then he or she must avoid external reminders, thoughts, or emotions that could instigate breakdown of the dissociation. As a result, the individual is forced to lead a constricted life, behaviorally and emotionally.

There is another kind of dissociation that sometimes occurs. Godarez (1987) describes the dissociation in Vietnam veterans of a coherent "warrior self" that enjoys combat and killing and is not suitable for adjusting to civilian life. Veterans with such a dissociated identity live in dread of the emergence of the monster within them. Among the examples Godarez cites of breakthroughs of the warrior self are: assaulting a family member who touched the veteran in his sleep, and nearly attacking a child who surprised the veteran with a cap pistol. Godarez considers veterans with such dissociation as similar to cases of multiple personality. He believes that the condition is not represented in DSM-III, because it occurs only in situations where the trauma is massive and prolonged and involves circumstances in which adapting to the trauma by a survivor-oriented life-style at the time of the trauma is possible. The symptoms described in DSM-III, on the other hand, are descriptive of relatively short-term, overwhelming experiences as the result of a single traumatic event.

Resolution based on embracing the trauma. There are three broad ways in which a traumatic experience can be assimilated. One involves completely fitting the traumatic experience to the conceptual system, which corresponds to assimilation in the absence of accommodation. A second involves completely fitting the conceptual system to the trauma, which requires extreme accommodation of the conceptual system, and would be observed as a radical change in personality. The third, and most usual way, consists of a combination of assimilation and accommodation. The first solution is relatively rare, because a traumatic reaction would not normally occur if the experience could be assimilated to begin with. It could occur, however, if the trauma were experienced when the person was in a state of semi-consciousness or was caught so much off guard that available mental resources that would normally be adequate to the assimilative task could not be mobilized. Recovery under such circumstances will primarily require deconditioning of anxiety and modulating the belief that the world is capriciously dangerous. It can be expected that the

disorder will, accordingly, be more responsive to simple treatment than cases that require greater conceptual reorganization.

The situation in which the conceptual system is completely fitted to the trauma provides an example of a particularly dramatic reaction, as the individual, in effect, "embraces the trauma," acting as if it were something desirable and to be actively pursued. An illustration of such a reaction is provided in an investigation by Scheppele and Bart (1983) of 94 women who had been attacked by rapists. With rare exception, women who had been raped demonstrated generalization gradients of anxiety to cues associated with the rape. Not surprisingly, these women took great pains to avoid exposing themselves to further danger. There were two notable exceptions, who reacted in an opposite way. One, a woman who had been raped twice in a single day, began to take drugs and became a robber and a prostitute. The other, a student from an advantaged background who had been attending a prestigious university at the time of the rape, dropped out of school, took to frequenting all-night bars, carried a knife, and became highly promiscuous. On the face of it, the behavior of both women seems difficult to comprehend. Considering how difficult it normally is to produce even minor changes in personality, how is one to explain how a single event could produce such a drastic change so quickly? The situation becomes comprehensible once it is appreciated how important it is for individuals to be able to assimilate emotionally significant experiences that can neither be denied nor defended against. If the experience is beyond the capacity of the individual to assimilate within the extant personality structure, one solution is to drastically alter the personality to make it congruent with the experience. Moreover, voluntarily engaging in activities similar to those feared allows the individual to actively experience in a controlled way what was out of control and experienced passively during the trauma. When experiences similar to the trauma are redefined as desirable, there no longer is the possibility of being traumatized in the same way again. Embracing the trauma varies along a dimension of the degree to which the adopted behavior recreates the traumatic experience. The aim, of course, is not to reproduce the traumatic experience, which would be overwhelmingly disturbing, but to change one's own behavior and reactions so that the possibility of being overwhelmed by a recurrence is reduced. One way of accomplishing this is to bring about events similar to the trauma, but over which one has some control. Control can consist of either behavioral control or a change in attitude or motivation such that a situation that was once forced upon one by others or by circumstances is voluntarily sought as desirable. To the extent that the trauma, then, was based on being involuntarily forced to do or experience something against one's will, this can no longer occur if one willfully accepts, and even pursues, the previously unacceptable behavior. An example of such a reaction is recounted by a French author, Jean Jenet. He described an experience when he was in prison in which other inmates forced

him to sit against a wall with his mouth open. They would then play a game of spitting into it. It is difficult to imagine a more degrading experience. The author coped with it by convincing himself that he enjoyed the game, and urging the other prisoners to play it with him at every opportunity.

Why do some people but not others employ the coping mechanism of "embracing the trauma?" It is hypothesized that embracing the trauma is most apt to occur in those for whom the nature of the trauma was particularly aversive, and for whom a view of the self as helpless was particularly intolerable. Embracing the trauma has been widely observed in Vietnam veterans who adopt a life-style in which they court danger in civilian life, sometimes with disastrous consequences, in a manner that seems as if it were meant to reproduce their experiences in Vietnam. To the extent that the hypothesis is correct that embracing the trauma is a way of assimilating it, these veterans should be relatively symptom-free when they are engaged in such behavior compared to when they are not, which would, of course, help to maintain the behavior.

Implications for Psychotherapy

There are two fundamental aspects of PTSD that should be considered in treatment. One concerns the deconditioning of anxiety, and the other the development of a more differentiated and integrated conceptual system. Only in the simplest cases will it be sufficient to decondition the anxiety associated with the trauma. More generally, both aspects of the trauma will have to be treated, which means the use of a combination of procedures for deconditioning anxiety, for changing beliefs, and for developing a conceptual system that can provide the basis for coping effectively with a world that is recognized to have the capacity for great destructiveness. Three broad procedures useful in this enterprise will be discussed under the headings of intellectual understanding, extinction of anxiety, and experiential counter-learning.

Intellectual Understanding

Intellectual understanding is usually not taken very seriously in psychotherapy. Its poor reputation arises from the observation that superficial knowledge usually has no effect on symptoms. However, intellectual understanding need not be superficial, and moreover, although intellectual understanding may usually not in itself be sufficient to produce recovery, it can be an important adjunct when used with other procedures.

One way that intellectual understanding can be useful is by providing the sufferer from PTSD with knowledge of the nature and course of the disorder. Because the symptoms of PTSD include disorganization, confusion, memory defects, and uncontrollable thoughts, images, and emotional reactions, victims are often worried about losing their minds. This may lead them to try to abort

the very process that they must undergo to work through the trauma. A knowledge of the normal course of the disorder and the adaptive implications of some of its symptoms can allay anxiety and facilitate the process of assimilating the traumatic experience. Victims of PTSD should be taught about the normal process of mastery of anxiety. They should understand that a broadened fear gradient and intrusive imagery are adaptive reactions that alert the mind to danger and force it to attend to the traumatic experience. They should be taught that, as tempting as it is to try to force the distressing thoughts from their mind and to forget the trauma, the only way to forget is through remembering and working through the implications of the trauma. At the same time, the individual should be taught about the importance of appropriate pacing. Vivid memories of a trauma are often too much to be borne, as the individual can assimilate just so much emotionally stressful material at a time. It is thus efficient to deal with the trauma piecemeal and to assimilate the less distressing aspects of the trauma before dealing with its more distressing aspects (Epstein, 1967, 1983b; Horowitz, 1979). Also, the person should understand that the mind must sometimes take "time outs" to protect itself from overstimulation, and that this often occurs spontaneously in the form of emotional numbing and withdrawal. It should be understood that the normal process of reworking the trauma tends to occur spontaneously, and need not be forced, except when prolonged blocks to the process occur. In sum, the working through of the trauma should occur gradually and be accepted as a natural process of mastery of anxiety, and not be treated as a weakness of the mind, to be ashamed of and avoided.

Apart from the working through of anxiety, victims of PTSD should be taught about the cognitive aspects of the disorder, of how it involves the invalidation of basic beliefs about the self and the world. They should learn that such invalidation destabilizes a person's belief system for making sense of the world, which results in confusion, uncertainty, and a loss of meaning and direction in living. They should learn that there is a danger of resolving the uncertainty by adopting extreme beliefs and belief systems that then become a new source of problems in living.

A second kind of intellectual understanding that can be helpful concerns the relationship between emotions and cognition. Most people assume their emotions are direct, spontaneous reactions to external events. If they are angry, it is because someone wronged them; if they are sad, it is because something or someone important to them is unavailable; if they are frightened, it is because something or someone has threatened them. They fail to realize that one never reacts to events directly, but only to one's interpretation of events, and that alternative interpretations are always possible. That is, one is responsible for one's emotions because one preconsciously chooses to be angry, frightened, or sad. Thus one could react with sympathy, rather than anger, toward a person who insulted one, if one interpreted the insult as an indication of frustration

or insecurity on the part of the insulter. Cognitive therapists, such as Beck (1976), Ellis (1962), and Meichenbaum (1977), have demonstrated that training people to recognize the preconscious interpretations of events that underlie their emotions can provide an effective technique for replacing destructive with constructive emotional reactions. Since victims of PTSD often experience destructive emotions that appear beyond their ability to control, they can benefit from learning to detect the preconscious thoughts that trigger their emotions, which they can then learn to control. In addition to helping people to control emotions, such learning can provide useful self-knowledge about the content of one's preconscious beliefs (Epstein, 1984).

A third kind of intellectual understanding that can be of use to victims of PTSD has to do with existential problems in living that have become important as a result of the traumatic experience. Such issues concern the meaning of life and death; of good and evil; of violence, and when, if at all, it can be condoned; of guilt, punishment, and forgiveness; of suffering; and of an internal conflict between the need for autonomy and the need for relatedness. The person who has lived through a traumatic experience may have no choice but to become a practical philosopher who must resolve certain basic issues in living, if peace of mind is to be restored. Discussion of such issues is often best conducted in groups composed of individuals with a common traumatic experience, as individuals who have experienced a trauma often feel that only those with similar experiences can understand them.

Extinction of Anxiety

Because a fundamental aspect of trauma is the experience of overwhelming threat, therapy often requires the use of procedures for extinguishing fear. The conditions for extinguishing fear, like extinguishing any other response, consist of experiencing the feared object in the absence of reinforcement. Obviously, this cannot occur in the traumatic neurosis because the traumatic event is unlikely to be experienced again, and if it were, it would simply increase the anxiety. What must be extinguished is the fear of the memory of the trauma and the overgeneralized fear reaction to trauma-relevant cues and associations. These, of course, can be experienced without objectively dire consequences. The difficulty in extinguishing such fears is twofold. First, whenever the person experiences trauma-relevant thoughts or external cues, strong anxiety reactions occur because of mental elaborations which reinforce the anxiety reaction, somewhat as if the original trauma were repeated. Second, because the anxiety is highly aversive, the individual tends to avoid thoughts and external stimuli associated with the trauma, which makes extinction impossible. The problem is how to have the individual experience trauma-relevant thoughts and stimuli in a way that facilitates extinction. There is a natural tendency of the mind to experience intrusions in memory of emotionally significant experiences, which,

in interaction with a natural tendency to avoid anxiety, serves to displace the intrusions, thereby pacing the experience of anxiety in a manner that facilitates extinction. If all goes well, there will be a gradual extinction of anxiety to trauma-relevant cues, with anxiety associated with displaced cues and thoughts being extinguished first, and anxiety associated with more direct cues and thoughts being extinguished last (see Epstein, 1967, 1983b, for a more thorough discussion of this process). However, all may not go well for two reasons. One is that the avoidance of distressing cues and thoughts may be excessive. The other is that it may be insufficient. In the first case, extinction cannot take place because the response to be extinguished is not available. In the second case, extinction cannot take place because the anxiety response is excessive.

There are three procedures that have been found to be effective in extinguishing fear. Although, on the surface, they appear very different, they are related by a common principle. Namely, they all involve fully attending to the threatening stimulus in the absence of defensiveness. The procedures are systematic desensitization (Wolpe, 1958), implosive therapy (Stampfl, 1970), and catharsis at esthetic distance (Scheff, 1979). In systematic desensitization, a hierarchy of stimuli is arranged along a dimension of increasing evocation of anxiety The patient first imagines the stimulus at the lowest end of the dimension while practicing a response incompatible with anxiety, such as muscle relaxation. When fear to that stimulus is extinguished, the patient advances to the next stimulus, and so on, until the most anxiety-producing stimulus in the dimension can be experienced without anxiety. Thus, the process of systematic desensitization is similar to the natural process of mastery of anxiety previously described, in which anxiety is gradually mastered by proceeding from more displaced to more direct representations of the threat. In implosive therapy, or emotional flooding, the therapist, by encouraging vivid imagery, facilitates an intense reexperiencing of what is most feared. Despite very high levels of anxiety, the patient is urged to stay with the imagery until the anxiety subsides, perhaps through fatigue or through the realization that the fear is no longer appropriate. In catharsis at esthetic distance, the patient is encouraged to reexperience the threatening event while maintaining a degree of detachment similar to that of a person observing a drama. Techniques of distancing are used to ensure that the person is not so involved in the experience as to be overwhelmed by the emotion, nor so removed as to experience little or no emotion. The person is encouraged to react with moderate emotional intensity, while a part of the self observes with dispassionate interest.

What all three procedures have in common is that in all cases the person, at some point, fully attends to the frightening stimulus at no more than a modest level of anxiety, thereby permitting extinction to occur. As was previously noted, only in the simplest cases of PTSD will such a mechanical extinction of fear be a sufficient remedy. More commonly, it should be regarded as a

component in a more general program of treatment that includes intellectual instruction and experiential counter-learning, a topic to which we turn next.

Experiential Counter-learning

It is obviously futile to tell a traumatized individual not to be discouraged because, within limits, the world is still benign, meaningful, predictable, controllable, and just; the self is still worthy, competent, and not helpless; and at least some others can be supporting and loving. The individual who has been traumatized knows this intellectually, but having been through an extremely emotionally convincing experience, cannot believe it emotionally. Experientially derived beliefs, however, can be modified by other emotionally convincing opposite experiences.

There are a wide variety of experiences that can counteract the view that the world is malevolent. Any enjoyable experiences, whether superficial or profound, can contribute to such counter-learning. Thus, it is important, insofar as possible, for victims of trauma to engage in activities that provide for some joy in living. As for the view that life is meaningless and the world capricious and uncontrollable, a first consideration is to ensure that the treatment program itself is well organized, predictable, and controllable, which means that activities and appointments should proceed in time and, if they have to be cancelled, prior warning should be given and appropriate apologies made. Patients should understand and help plan the treatment procedures whenever feasible in a manner that contributes to their feeling of control.

Any activity that involves commitment and that provides an opportunity for observing the positive effects of one's own actions should be helpful in counteracting the belief that life is meaningless and the world is unpredictable and uncontrollable. At the simplest level, this could involve activities such as exercise programs, gardening, or participating regularly in group social or political activities. At a more complex level, it could involve activities that require a major commitment of the individual, such as an educational or training program that prepares the individual for the future, or participating in a program for helping others. Particularly useful, in this respect, are activities that are viewed as directly combatting the trauma. In effect, this amounts to viewing the trauma as a challenge, as an adversary to overcome, rather than accepting it passively. Coping in this manner is often observed in the natural therapy of victimization, where it has been a source of inspiration to others and has resulted in significant social contributions. Examples include Franklin Delano Roosevelt's support of the battle against polio, which had left him lame, and the Kennedys' support of research and treatment of mental deficiency, the effects of which they knew from firsthand experience. Devotion to such causes can provide meaning and direction to a life and counteract feelings of helplessness.

Of course, any form of treatment must be considered in terms of what is acceptable to a particular person at a particular time. Complex social activities may have to be postponed until a reasonable degree of personal integration has been achieved. Participation in organized meetings with others who have suffered from the same kind of victimization can be particularly useful, as it not only provides support and understanding that can counteract the belief that people are unrewarding or dangerous to relate to, but it can also provide an opportunity for helping others, thereby counteracting feelings of guilt and helplessness.

Self-esteem, at its most fundamental level, is acquired through the internalization of evaluations by significant others, and remains susceptible throughout life to the influence of others. A favorite theme in novels is a dramatic change in personality that is produced by a love relationship. Research documents the power of love in adult life to effect significant changes in personality (e.g., Epstein, 1979b). Thus, a particularly powerful way of raising self-esteem is through reflected positive appraisals of others, that is, through the establishment of a relationship with an admired and respected person who is perceived as liking and respecting the individual. Whatever else therapy does for victims of trauma, one of its most important contributions can be the establishment of such a relationship. Of course, such relationships need not be restricted to formal therapy. It is noteworthy, in this respect, that married Vietnam veterans recover more readily from PTSD than their single counterparts. As already noted, self-esteem can also be improved by active coping and accomplishment, which can be a source of pride and of overcoming feelings of helplessness. Another form of counteraction that is particularly useful where guilt feelings are involved is participation in activities that contribute to the welfare of others. For example, someone who is torn with guilt for having killed civilians in war could be encouraged to engage in activities such as helping refugees from war-torn countries, helping other victimized individuals, or working to prevent war.

In conclusion, it should be recognized that there are no formulas that can be routinely applied to the treatment of PTSD. Although there are general guiding principles, the unique characteristics of each case must be taken into account. For each individual, it is necessary to determine what specific fears, if any, need to be extinguished, what misinformation, if any, needs to be corrected, what existential problems in living need to be resolved, what experientially-derived overgeneralizations have to be cut down to size, and what maladaptive behavioral strategies have to be corrected. Beliefs and activities that can provide meaning and direction in one case may be unacceptable in another. Thus, an effective therapeutic regimen requires not only understanding the patient's conceptual system, but working out in collaboration with the patient how best to implement a program of constructive change.

SUMMARY

The purposes of this article were twofold, to explore the validity of Cognitive-Experiential Self-Theory by an examination of empirical findings on post-traumatic stress disorder (PTSD) and, assuming some validity to the theory, to use the theory to elucidate the nature of PTSD and to consider its implications for psychotherapy. According to an initial version of Cognitive-Experiential Self-theory, each individual, in the course of living, constructs a personal theory of reality that has three functions: to maintain a favorable pleasure-pain balance, to assimilate the data of reality in a manner that can be coped with, and to maintain a favorable level of self-esteem. The essence of PTSD is the invalidation of fundamental beliefs associated with these functions, namely that the world is benign, predictable, controllable, and just, and that the self is strong and worthy. A factor analysis of symptoms of PTSD in Vietnam veterans by Wilson and Krause (1982) provided striking confirmation of invalidation of the above beliefs and of their replacement by opposite beliefs, but also indicated the presence of a fourth basic function, namely the need for relatedness. The corresponding belief that was invalidated was that people are trustworthy and that human relationships are more apt to be rewarding than disappointing and frustrating. The generality of this belief and associated need was indicated by logical considerations, by research findings, and by the DSM-III description of symptoms of PTSD. Accordingly, the need for relatedness was added to Cognitive-Experiential Self-theory as the fourth basic function of a personal theory of reality. It was demonstrated that the symptoms of PTSD are often organized around basic emotions and the trauma. With respect to implications for therapy, it was concluded that, in addition to extinction of trauma-relevant anxiety, it is often necessary for individuals suffering from PTSD to have certain corrective emotional experiences that cut inappropriate generalizations down to size, and to confront certain existential problems in living that have become important in their lives because of the traumatic experience, such as the nature of good and evil, suffering, guilt, punishment, trust, and the inherent conflict between autonomy and relatedness.

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