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## *Survival Strategies: A Framework for Understanding Secondary Traumatic Stress and Coping in Helpers*

PAUL VALENT

In order to understand the secondary traumatic stress (STS) reactions of those who deal with traumatized people, it is necessary to understand the responses of the primary victims, because it is the primary victims' responses that evoke the secondary responses. This chapter explores which specific responses arise in which situations, as well as their secondary effects and their means of transmission.

Whereas one line of traumatic stress literature deals with the reliving and avoidance responses in post-traumatic stress disorder (PTSD) (APA, 1987), another describes a very wide variety of often contradictory responses in traumatic stress situations. For instance, among other impact phase responses, Raphael (1986) notes numbness and apathy as well as arousal and resoluteness; effectiveness as well as helplessness; fight as well as flight.

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Editor's Note: In this chapter, Valent proposes a solution to an important problem in the psychotraumatology field: the need for a framework that can accommodate the great variety of sources of stress and methods of coping with these stressors from a psychological, social, and biological perspective. Valent's model, presented in Table 1, is organized around eight survival strategies: rescuing, attaching, asserting, adapting, fighting, fleeing, competing, and cooperating. Valent suggests that the secondary traumatic stress responses may be elicited in helpers through identification with, and/or complementing victim survivor strategies. Secondary traumatic stress disorders may develop if the identifications are too intense, the complementing survival strategies are inappropriate, or helpers cannot execute their own survival strategies adaptively.

In a previous paper (Valent, 1984), I suggested that contradictory and fluctuating responses in disasters depend on changing survival responses to rapidly fluctuating circumstances. In this chapter, I explore further these different survival responses, which I call survival strategies (SSs). I suggest that while PTSD draws attention to the reliving and avoidance of traumatic stress responses, SSs provide a framework for the variety of physiological, emotional, and behavioral responses that are relived and avoided. I postulate that there are eight basic SSs that have evolved to deal with severe threats: rescue, attachment, assertiveness, acceptance, fight, flight, competition, and cooperation. I draw on evidence for the SSs from the fields of anatomy, physiology, ethology, anthropology, sociology, psychology, and traumatic stress.

## BACKGROUND

Hippocrates wrote: "It is changes that are chiefly responsible for diseases, especially the greatest changes, the violent alterations. . ." (Dubos, 1968). Since his time, this principle has undergone a continuous cycle of being forgotten and then rediscovered and described under different labels. Trimble (1985) has noted this phenomenon for modern times. For instance, "shell-shock" and Kardiner's (1941) "[post]traumatic neurosis" came from World War I, and "combat exhaustion" (Bartemeier, Kubie & Menninger, 1946), "A-bomb disease" (Lifton, 1967), and "survivor syndrome" (Krystal, 1968) came from World War II. PTSD is a legacy of the Vietnam War. In the same period, many labels stemmed from specific disasters, such as "railway spine" (Clevenger, 1889) and "Buffalo Creek syndrome" (Titchener & Kapp, 1976).

Each of these syndromes included biological, psychological, and social manifestations. This is important to note because another series of developments in the understanding of traumatic stress arose separately in biological, psychological, and social streams of stress research, representing three perspectives with little cross-fertilization. However, they meet again in SSs. Let us now look at the three historically separate streams.

### *Biological Perspective*

Early research was statistical/epidemiological and physiological. Statistically, a variety of traumatic situations, such as concentration camps (Eitinger, 1973), prisoner of war camps (Beebe, 1975), natural disasters (Bennet, 1970; Raphael, 1986; Trichopolous, Katsouyanni, & Zavitsanos, 1983), and bereavement (Raphael, 1984) were seen to lead to

the increased incidence of physical morbidity and mortality, as compared with control populations. However, even in more ordinary situations, the more intense the stresses, the more serious were a wide variety of consequent illnesses (Holmes & Rahe, 1967). This was part of a generality approach: stress gave rise to illness.

In contrast, specificity theories held that certain types of stresses in certain people were associated with certain specific illnesses. According to Alexander's (1950) basic premise, specific emotions must have specific physiological correlates, which in a conflict (stressful) situation, and with particular physical vulnerabilities, lead to specific symptoms and illnesses. He examined seven such "psychosomatic" illnesses, including hypertension, duodenal ulcer, and asthma. Weiner (1977) updated the theory in the light of much more complex physiological data. However, and this is the situation till today, although prediction is easier in individuals in whom certain stresses reevoke the same illnesses, stresses add little statistical (even if significant) weight in predicting specific illnesses over large populations. Although some used this fact to discredit the importance of stresses in illnesses as artifacts (e.g., Andrews & Tennant, 1978), it may be that greater sophistication is needed to gather stress data (which may, in fact, be underreported [Monroe, 1982]) to identify core phenomena in stresses that are significant, and to identify intervening variables that need to be controlled. Thus, even though the paradigm of stress leading to specific illness has been very promising, its clinical use has been compromised by conceptual difficulties.

Physiological research involving the autonomic nervous system (Gellhorn, 1970), hormones (Mason, 1968), the immune system (Ader, 1981), and a variety of neurotransmitters and neuromodulators (Smith, 1991) indicated a close association of all these systems with, and their high responsivity to, a wide range of stresses. New techniques made this area a fertile field for study. Yet the situation has remained basically the same as in 1968, when Mason called for a taxonomy that could make sense of the great variety of physiological responses evoked in different stress experiments. Again, clinical use has been hampered by conceptual difficulties.

### *Psychological Perspective*

Epidemiological studies have long suggested that major stresses are followed by a variety of psychological dysfunctions. Kinston and Rosser (1974) have suggested a 400% increase in nonpsychotic disorders following disasters. In reviewing the literature, Raphael (1986) found that between 20% and 70% of populations suffered significant psychological morbidity after disasters.

*Nature of the morbidity*

Epidemiological studies show that about one third of the populations suffer from PTSD. The others suffer a wide variety of anxiety, depressive, and somatoform disorders. A range of disorders that is similar, but includes depressive and paranoid disorders, has been described in wartime civilian (Murphy, 1975) and combat (Brill, 1966; Lindy, 1988) populations. There has been little suggestion of specific stresses leading to specific disorders, though Paykel (1979) noted that exit losses were predictive of depression. Clinically, stresses are usually allowed at least a contributory role in psychiatric disorders generally, as noted in Axis IV in DSM-III-R (APA, 1987) and DSM IV (APA, 1994).

Also, there has been a stream of research associating cognitions and emotions with stresses and psychological illnesses.

*Cognitions*

Breuer and Freud (1893/1975) and Janet (1920) described both the "printing" of traumatic experiences on the mind and the mind's simultaneous "splitting of consciousness" (Freud) and "dissociation" (Janet) from these experiences. Both the reliving of the traumatic experiences and their suppression (Freud, 1920/1975), with the addition of later psychological defenses, constituted the core of neuroses. More recently, Horowitz (1976) described similar features of what he called stress response syndromes, although he explored further the importance of meaning and its processing in resolving these syndromes. Finally, the reliving and avoidance of traumatic experiences constitute the core of PTSD. However, as Weiner (1985) pointed out, it may also be a feature of other DSM diagnoses. Perhaps the content and the manner of reliving and avoidance determine these diagnoses.

Whenever traumatic situations leave room for ambiguity and choice, appraisals, as well as the passive searing of events that leaves no room for thought, become incorporated in traumatic stress responses. Appraisals of whether, and which, events were dangerous were called primary appraisals by Lazarus and Folkman (1984). These were vector results of sensory perceptions of reality and subjective meanings. A variety of factors, such as past experience, role, desire and perceived authority of those giving information, could feed into the subjective aspects of primary appraisals. According to Lazarus and Folkman, secondary appraisals then determined what strategies could be applied to deal with the stresses. Reappraisal involved processing the progress of the strategies. All these appraisals are subject to avoidance and reliving.

*Emotions*

Anxiety and depression have been noted commonly as stress responses. Pathological grief was considered as possibly associated with depression and physical illnesses (Raphael, 1984). Anger was noted in disaster and combat literature, and guilt was found in survivors of concentration camps (Krystal, 1968). Schmale (1972) described the "given-in/given-up" syndrome, which included hopelessness and helplessness. This syndrome was said to predispose to a variety of illnesses, such as cancer.

On the whole, however, it is striking that until the innovative efforts of Plutchik (1980), there were no attempts to classify emotions or to find a theoretical framework for them. This applied not only to the commonly described emotions such as anxiety, depression, anger, and guilt, but even more so to a great variety of emotions such as insecurity, contentment, power, and revenge. Panksepp (1989b) noted that the study of emotions has been assiduously avoided as unscientific, leaving a compulsory central lacuna in our understanding of the physiological and behavioral responses to stress.

*Social Perspective*

Perhaps because sociologists do not use an illness model, they have drawn special attention to people's capacities to cope through adaptive responses to stress. Further, they emphasize the positive aspects of family and community support (Quarantelli & Dynes, 1977).

Figley (1986) analyzed the factors in this support that acted as antidotes to stress disorders. They were emotional care, comfort, love and affection, encouragement, advice, companionship, and tangible aid. He also noted that the family and other helpers became vulnerable through their empathy, and could develop secondary traumatic stress disorders. It is now widely acknowledged that helpers are frequent secondary victims (e.g., Berah, Jones, & Valent, 1984). Mileti, Drabek, and Haas (1975) drew attention to the various system levels (individual, family, group, and community) that operate in disasters. Figley (1989) examined the family system in disasters.

The divisions among the biological, psychological, and social perspectives have been wide; for instance, each perspective has separate journals and institutional attachments. There has been some cross-fertilization—for instance, in biopsychosocial medicine (Engel, 1977). Another field has been that of strategies of survival.

*Precursors to the Concept of Survival Strategies*

Charles Darwin (1890/1965) noted that in order to deal with a variety of dangers, animals and humans evolved a variety of specific emotions

and behaviors. Cannon (1939), drawing on Darwin's observations, described fight and flight responses associated with the sympathetic nervous system.

Selye (1946) described a different physiological response to stress, which he called the general adaptation syndrome (GAS). This included secretion of the hormone cortisol, and suppression of the immune response. This physiological response does indeed facilitate adaptation (rather than fighting or fleeing stressors), but it cannot be considered a general stress response. In fact, the GAS is evoked in conditions of surrender (Blanchard & Blanchard, 1988; Henry, 1986b), and of the need for acceptance, as in bereavement (Irwin, Daniels, & Weiner, 1987).

Attachment, although not previously designated as a strategy of survival, is nevertheless a very important means of survival for the weak. As a biobehavior, it was first described by the Harlows (1965) in monkeys, and by Bowlby (1971) in humans. It has been described recently in many other species, as has its stressful opposite, separation (Panksepp, Siviy, & Normansell, 1985).

A number of recent developments has facilitated a more comprehensive approach to strategies of survival and their use as unifying concepts. First, evolutionary theory replaced the previous survival unit of the fittest individuals, by the breeding genes in a population (Wilson, 1982). This removed the apparent paradox of altruism, whereby the fittest often sacrificed themselves for weaker members. However, if through their actions greater numbers of group genes would survive, such altruism made evolutionary sense. Similarly, giving and taking (reciprocal altruism) could enhance group survival. This new evolutionary view allowed care of the weak and mutual cooperation to be potential Ss.

Second, advances in the study of animal behavior teased apart different survival behaviors that were previously under the single rubric of agonistic, or socially aggressive, behavior. Thus it was noted that postures of attack and sites of bites are quite different in predation (hunting), antipredator defense (self-defense, fight), and hierarchical struggles (competition). This finding meant that hunting, fighting predators, and competition could be three separate survival behaviors (Blanchard & Blanchard, 1988), each with its own type of aggression, anger, and physiology (Blanchard & Blanchard, 1988; Moyer, 1986; Olivier, Moss, & Brain, 1987; Shaikh, Brutus, & Siegel, 1985).

Third, emotions became a respectable field of scientific study (Panksepp, 1989b), because the use of complex new techniques such as computer digitization allowed them to be correlated for the first time with specific neurophysiological events and biobehaviors. The subjective self could now be correlated with objective data.

All these developments allowed propositions of relatively complex schemata of survival behavior, expanding the simple dyads such as fight and flight. Plutchik (1980) postulated eight specific survival behaviors, while Panksepp (1989a) postulated five survival "biobehavioral circuits." Although their approaches and semantics varied, these authors added four further potential survival biobehaviors to fight and flight: foraging (for food and water), attachment, grief, and sharing. Both authors emphasized the integral biopsychosocial nature of these survival behaviors.

### Summary

Since Hippocrates' initial observations, it has been confirmed again and again that "the greatest changes, the violent alterations" may be "responsible for diseases." It is still difficult to conceptualize how this happens, and to know which disturbances may lead to which disorders. However, it seems possible that certain survival behaviors elicited in the circumstances of greatest changes and violent alterations (situations of traumatic stress) may provide vital clues that may make some sense of the variety of traumatic stress responses.

A number of leading workers have called for a theory that would connect and organize the vast array of available data. As noted, Mason (1968) almost 30 years ago asked for a taxonomy to organize his voluminous physiological data. Lazarus and Folkman (1984) said that even the most sophisticated (physiological) research might be sterile without a theory that included appraisals and emotions. Weiner (1989) concluded that there was a need to conceptualize the human response to particular stressors, and to link the highly complex neurochemical responses with tasks of survival. Panksepp (1986b) similarly called for a psychobiological theory that would demonstrate stress response patterns to be, in a deep sense, simple and logical.

It is suggested that Ss are important building blocks that help distill the volume of biological, psychological, and social data into meaningful, "simple and logical" patterns of biopsychosocial responses that serve survival. Survival strategies will be shown to be central concepts in delineating successful, adaptive, coping responses and unsuccessful, maladaptive, traumatically stressed responses. These strategies provide a framework for the variety of these responses, which is then applicable to both primary and secondary victims.

## THE PLACE OF SURVIVAL STRATEGIES IN A CONCEPTUAL FRAMEWORK

## Definitions

For the purposes of this chapter, a *stress* (Figure 1) is an event that disturbs the equilibrium of a person in such a way as actually or potentially to shorten the person's lifespan. *Appraisals* of the means of survival are cognitive processes that include sensory perceptions, past learning, and views of oneself, such as one's role and capacities. The appraisals evoke stress responses, which counter the noxious effects of stresses. They may be relatively simple instinctual responses, such as retrieval of balance or removal of body parts from painful stimuli. Survival strategies are stress responses of a higher level of complexity, including ideas, emotions, and social interactions. They will be defined further below.

Stress responses may be *adaptive* or *maladaptive* (Figure 2). Adaptive stress responses deal with stresses in such a way that life is not actually or potentially compromised. Maladaptive responses are either insufficient or the wrong ones to prevent actual or potential compromise of the lifespan. In such a case, other stress responses may be evoked. If these are not adaptive, strain, trauma, illnesses, or death occur. Both adaptive and maladaptive stress responses express themselves in a unified manner in *biological*, *psychological*, and *social* arenas. In fact, all the components being defined have such biological, psychological, and social aspects.

Strain is an unresolved tension between stresses and stress responses. *Trauma* occurs when stress responses fail to reestablish prestress life-enhancing equilibria. It is an amalgam of all the previous components. The situation in which trauma occurs is a traumatic situation. The stress that leads to trauma is *traumatic stress*. *Defenses* minimize the damage of trauma or its repetition. In the psychological arena, numbing and fragmentation in the early phase, and repression, phobias, displacement,

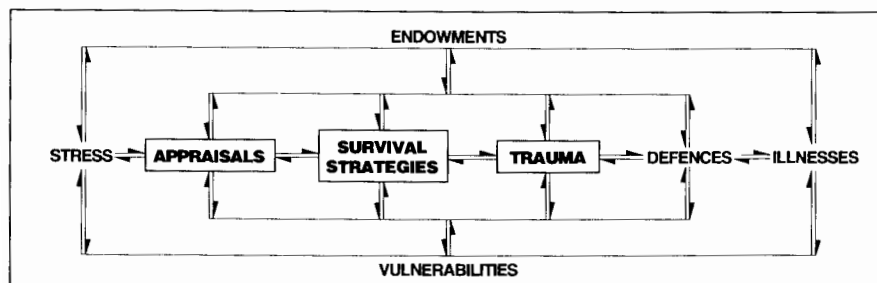


Figure 1. The place of survival strategies in traumatic stress

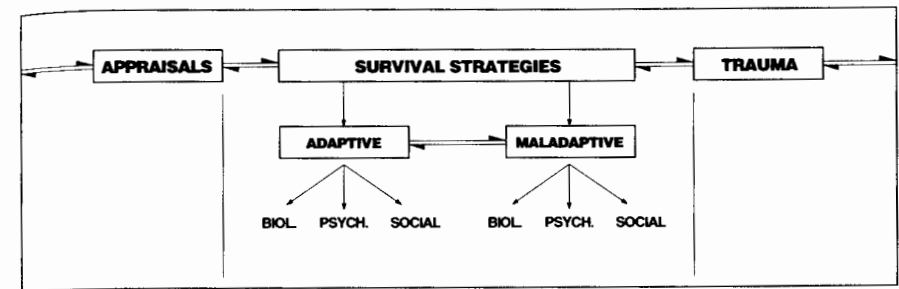


Figure 2. Survival strategies

and so on in the later phases, are examples of defenses. *Illnesses* may be defined as compromise equilibria following trauma. They include both the trauma, aspects of which are still relived, and the defenses against it. Symptoms are individual indicators of such compromise equilibria. It is suggested that illness seriousness is determined by the difference between pre- and post-stress equilibria, and that illness nature depends on the components of trauma, including survival strategies. Benefits occur when responses are adaptive and poststress equilibria are more life enhancing than prestress ones.

Throughout the whole process, *endowments* resist, while *vulnerabilities* facilitate, the noxious effects of stresses. For example, family may be a social strength, whereas isolation may be a social vulnerability.

*Secondary traumatic stress* (STS) responses occur when a person is secondarily influenced by the stress responses of another person. Components of stress leading to illness similar to those in Figure 1 become important in the secondarily affected person.

Let us now look at descriptions of SSs in more detail.

## CHARACTERISTICS OF SURVIVAL STRATEGIES

The following features are suggested to characterize SSs.

1. *Evolutionary adaptedness*. The SSs are hereditary models present in humans and animals that have evolved to enhance the survival and perpetuation of evolutionary social units in the face of stressful situations.
2. *Level of operation*. Anatomically, SSs are intimately involved with MacLean's (1973) "old mammalian" brain—that is, the midbrain, limbic system, and primitive cortex—areas whose

role is to elaborate "emotional feelings that guide behavior with respect to the two basic life principles of self-preservation and preservation of the species." This area has rich, two-way connections with areas concerned with more primitive reflexes and instincts and with higher cortical levels.

3. *Biopsychosocial (BPS)*. Each SS has integrated biological, psychological, and social aspects that act as functional units.
4. *Finite number with a multitude of combinations*. There is a small number of discrete SSs. However, they may occur in a wide range of combinations and proportions. For instance, a soldier whose buddy is killed may grieve, kill to exact revenge, or seek death in order to be reattached to his friend.
5. *Adaptiveness and maladaptiveness*. Survival strategies may be adaptive or maladaptive, and this may change according to circumstances. For instance, to choose continuation of combat in the face of massive enemy reinforcements may become maladaptive. Similarly, the previously mentioned soldier's combat skills may be affected adversely by his need to kill or be killed. When SSs are not adaptive, their subsequent continued intense replay and/or suppression may become components of trauma and lead to symptoms, disorders, and illnesses.
6. *Interpersonal effects*. Survival strategies may evoke identificatory or complementary SSs in others. For instance, another soldier's helplessness may evoke a complementary SS of rescue. In contrast, his surrender (to enemies, death) may elicit a similar SS in other soldiers through identification.
7. *Modulation of SSs*. In addition to physiological feedback, internal and external judgments of the appropriateness of SSs (reappraisals) modulate their actions. For instance, using the above example, the surviving buddy may reappraise his impulse to homicide or suicide through fear or internal admonitions, or other soldiers may put strong restrictions on his impulses. Often the reappraisals are in the form of severe moral judgments, such as, "You are going to get us all killed!" Without such monitorings, survival of self and others may be compromised.
8. *Higher-level symbolizations*. Survival strategies contribute to higher-level symbolizations, which include meaning, human values, and existential purpose. Thus the surviving buddy (and, later, his clinician) may have to struggle with the meaning of the buddy's death, the use of revenge, the point of human sacrifice, the morality of surviving, and the overall purpose of war and life and death. Not only sensory reminders of the original

event, but cues relating to these dilemmas as well, may evoke SS responses from the original situation.

Evidence for the SSs that follow are derived from literature in the fields of anatomy, physiology, ethology, human development, psychology, sociology, and traumatic stress. Although of necessity biological, psychological, and social aspects of SSs are described sequentially, one must not lose sight of their integral functioning. In this chapter, the processes leading to appraisals are not detailed, nor are the many feedback systems and illnesses, important as they are.

The eight SSs are presented in Table 1. They may be considered as four complementary pairs of survival possibilities. The first line in each psychological and social cell deals with feelings and responses relating to one's own and others' physical selves. The second line deals with feelings and responses relating to distribution of resources. The third line (in italics) is a combination of the other two. In fight and flight, physical selves and resources merge.

Rescuers, helpers, and professionals may consider the responses listed in the table and the accompanying text as applying both to their patients or clients and to themselves. Thus both groups enjoy the satisfactions and fulfillments (even if initially at the cost of some pain) inherent in successful SSs. However, strained and maladaptive responses also apply to both victims and helpers, and ultimately so do trauma responses. Maladaptive responses in helpers may be seen as STS responses; the trauma responses noted in Table 1 provide a variety of primary and secondary traumatic stress disorder (STSD) symptoms. Helpers need to be wary when they experience STS responses, and they may well need actual help when they exhibit STSD manifestations.

What follows is a brief summary of SSs. A fuller review of their functions and ramifications will be set out in another work (Valent, in press). This will include ramifications of survival and fulfillment ranging from judgments and morals to human meanings, religion, ideology, and purpose.

Let us now look at each SS in turn.

## THE SURVIVAL STRATEGIES

### *Rescuing-Care-Altruism*

This SS is commonly evoked in disaster workers, and in medical and mental health professionals as they care for their charges. However, it is also evoked more widely, whenever it is clear that one needs to rescue, protect, or provide in order to enable others to survive. The paradigm

TABLE 1  
Survival Strategy Components

Appraisal of Means of Survival	Survival Strategies	Successful/Adaptive Responses			Unsuccessful/Maladaptive Responses			Trauma Responses
		Biological	Psychological	Social	Biological	Psychological	Social	
Must save others	<b>Rescuing</b> Protect Provide	↑ Estrogen ↑ Oxytocin ↑ Opioids	Care Empathy Devotion	Responsibility Nurture Altruism	Sympathetic & Parasymp Arousal	Resentment Depletion Self-Concern	Burden Neglect Rejection	Anguished Survivor guilt Caused death
Must be saved by others	<b>Attaching</b> Protected Provided	? ↑ Opioids	Yearning Need Contentment	Reaching out Crying out Union	↓ Opioids	Abandonment Deprivation Aloneness	Clinging Demanding Separation	Dread Cast out Left to die
Must achieve goal	<b>Asserting</b> Combat Work	↑ E, NE ↓ Cortisol ↑ Immunocomp	Strength High morale Potency	Will Success Control	↑ ↑ E, NE Depletion E, NE ↑ BP, ?CHD	Frustration Low morale Powerlessness	Willfulness Failure Lost control	"Burn-out" "Learned helplessness"
Must surrender goal	<b>Adapting</b> Accept Grieve	Parasymp Arousal ↑ Cortisol	Acceptance Mourning Hope	Yielding Loss Turn to new	↑ Cortisol ↑ Immunocomp ↑ Infection, ↑ CA	Helplessness Depression Despair	Overwhelmed Withdrawal Given in	Vulnerability Given up Succumbing
Must remove danger	<b>Fighting</b> Defend Rid	Symp Arousal ↑ NE, E ↑ BP	Threat Revenge Frighten	Deterrence Wounding Riddance	↑ ↑ Symp Arousal ↓ Cortisol	Hatred Persecution Killing	Attack Eradication Destruction	Horror Evil Murder
Must remove oneself from danger	<b>Fleeing</b> Retreat Save oneself	Sympathetic & Parasymp Arousal	Fear Terror Deliverance	Hiding Flight Escape	NE Depletion ↑ E & Cortisol	Phobia Paranoia Engulfment	Avoidance Panic Annihilation	"Inescapable shock," being hunted, killed
Must obtain scarce essentials	<b>Competing</b> Struggle Acquire	↑ Testosterone Symp arousal	Winning Possession Power	Dominance Privilege Take	↓ Testosterone ↓ Female hormones ↑ Cortisol	Defeat Greed, envy Crushed	Submission Plundered Emptied	Terrorization Marginalization Elimination
Must create more essentials	<b>Cooperating</b> Trust Mutual gain	↑ Opiates ↓ BP, E, NE	Mutuality Generosity Creativity	Reciprocity Sharing Synthesis	↓ Opiates ↑ ↑ Parasymp Arousal	Ident w aggr Exploited Stagnation	Appeasement Robbed Disintegration	Alienation Fragmentation Decay

for such a one-way investment is maternal or parental care, an evolutionary survival milestone (Wilson, 1982) and one that differentiates later species from reptiles (MacLean, 1985). The SS subsumes nursing, nesting, protecting, retrieving and staying close (Rosenblatt, 1989), and maternal aggression (Troisi, D'Amato, & Carnera, 1988). The provision of parental care is characteristic of all mammals, and of humans from all cultures. A biogram for this SS already seems to be present in young children who play at parenting, and who in dire circumstances may assume parental roles. Its evolutionary survival value lies in the preservation of the next generation and, thereby, the species. It also preserves the currently weak, who nevertheless may be useful in the future.

Hormonal studies on male parental behavior are not available (Capitano, Weissberg, & Reite, 1985), but dominant primate males do show almost maternal solicitude to infants, and they protect the young in their troops (Wilson, 1982).

Parental behavior may be exercised with regard to nonprogeny (such as through adoption) in higher vertebrates (Goodall, 1988; Wilson, 1985). In primitive societies, uncles often care for their sisters' children. Parental-type care may be offered even more widely (MacLean, 1985; Zahn-Waxler, Cummings, & Ianotti, 1986), even to needy adult strangers. This is commonly noted in disasters.

The SS is served by specific parts of the limbic system, with connections to the higher centers (MacLean, 1985). These areas are activated by female sex hormones such as estrogen and progesterone (Rosenblatt, 1989).

The adaptive mode of the SS is associated with feelings of care, empathy, devotion, and responsibility. When the responsibility is too great, and carers cannot cope, there is a sense of resentment toward the needy, a sense of depletion of one's own strained resources, and consequently neglect, and even rejection, of the unwanted burdens. Altruism turns to self-concern.

The failed SS in the traumatic state includes anguish and guilt for not saving life, or perhaps even contributing to death. This anguish is relived and avoided in traumatic stress symptoms.

*Attaching*

This SS is evoked when it is perceived that others are needed to effect one's survival by providing protection and satisfaction of needs. The paradigmatic situation is an infant attached to its mother. MacLean

(1985) considers the evolution of attachment concomitant with maternal care, with which it is reciprocal, and which it evokes.

Attachment promotes psychobiological synchrony (the mother's capacity to modulate the infant's physiological and psychological responses). Thus attachment preserves vulnerable progeny and gives a solid base for future life. Failure in this area may compromise short- and long-term integrated physiological and psychosocial function (Coe, Lubach, & Ershler, 1989; Reiter & Capitano, 1985).

The biological concomitants of secure, contented attachment are not known. However, the emotions of separation and abandonment may be processed by parts of the hypothalamus and the cingulate gyrus (Panksepp et al., 1985), and may be associated with low levels of internal opiates. The administration of opiates reliably suppresses the crying out (distress vocalizations) of separation in all tested species (Panksepp, Meeker, & Bean, 1980).

In adaptive attaching, crying and reaching out lead to appeasement of yearning and satisfaction of needs. Union with an attachment figure gives a sense of security and contentment. Maladaptive attachment is experienced as abandonment, deprivation, and utter aloneness. Yearning, clinging, and demanding may become desperate, with a high level of separation anxiety. In the traumatic state, separation is associated with a dread of having been cast out to die. Van der Kolk (1987) suggests that the loss of the secure base that attachment provides leads to some of the well-known manifestations of the trauma response.

Attachment also may be directed toward fathers and other members of the group, and may be active in all adults who feel vulnerable. Society provides attachment figures in government and in religion. Attachment ideation, in which an important figure is imagined to be present, may help survival in dire circumstances.

Rescuers and helpers do not use this SS as a matter of choice. However, when their own superiors do not support them, or when through their own needs they attach themselves to their clients, maladaptive attachment responses may become evident. For instance, carers may feel anxious without their clients and may cling to them to an extent beyond that beneficial to the clients.

#### *Assertiveness (Goal Achievement)*

This SS is evoked by the appraisal that one must achieve certain goals to survive. The paradigm for this SS is hunting, though forces of nature may symbolize wild animals. We may forget that hunting has been a

major feature of the human species for the first 99% of its evolutionary existence (Washburn & Lancaster, 1977). Laughlin (1977) notes that hunting has been the master behavior pattern of the human species, directing the evolution of the human body, technology, and society. Hunting's derivatives in the modern world are work and combat. They serve the need to obtain food and shelter (essential goals), and to control the environment in order to do so. The force used in this SS is often confused with violence in fight. However, "aggression" in this SS is called "instrumental" (Olivier et al., 1987), that is, "without affect," as when a cat kills a mouse quietly and efficiently.

The SS is served by specific parts of the midbrain and limbic system (Shaikh et al., 1985), and it is associated with arousal of the sympathetic nervous system, with secretion of epinephrine (E) and norepinephrine (NE) (Dienstbier, 1989; Ursin, Baade, & Levine, 1978). Immuno-competence, the capacity of the immune system (the cells and antibodies that deal with bacteria, viruses, and cancer cells), is enhanced, whereas cortisol secretion is suppressed (Dienstbier, 1989; Henry, 1986b). These physiological responses are the opposite of those described by Selye (1946) for the GAS, and those found in the next SS. The depletion of E and NE is cushioned by a sense of control and confidence in success (Dienstbier, 1989), whereas NE depletion (a hallmark of traumatic stress in flight as well) occurs in animals that have learned that they cannot control pain (Weiss, Stone, & Harrell, 1970).

Goal achievement is associated with feelings of strength and of one's will prevailing, high morale, potency, and control. Failure is associated with frustration, demoralization, powerlessness, a sense of loss of control, and exhaustion resulting from continued effort. Extremes of these responses have been described in the traumatic state of "combat exhaustion" (Bartemeier et al., 1946), and may be part of the syndrome of "burnout." The responses also resemble those in "learned helplessness" (Abramson, Garber, & Seligman, 1980), where there is repeated failure to achieve goals. Van der Kolk and Greenberg (1987) have speculated that this also may be part of the trauma response.

Combat exhaustion and compassion fatigue may overlap to some extent in the different contexts of the army and the helping professions. Certainly, burnout occurs in both, and is characterized by the fatigue, frustration, and powerlessness associated with the inability to achieve goals. Learned helplessness may be the long-term outcome of trauma involving this SS. Degrees of burnout are common in rescue teams (Berah, Jones, & Valent, 1984) and in helping teams such as those dealing with very ill patients in hospitals.

Sustained maladaptive assertiveness may contribute to the Type A



personality, and to hypertension and coronary heart disease (CHD) (Appels & Mulder, 1989; Henry, 1986b; Van Doornen & van Blokland, 1989).

#### *Adapting (Goal Surrender—Rolling with the Punches)*

This SS is evoked with the appraisal that old goals must be surrendered to new ones. The paradigmatic situation is having to accept a major loss, and to grieve it. The grieving process may be a relatively new evolutionary adaptation; its precursors are present only in several species, such as birds (Lorenz, 1968) and primates (Goodall, 1988), and weeping is characteristic only of humans. Nevertheless, mourning rituals are found in all cultures. We may speculate that this SS provides a buffer zone for recuperation and readjustment to new circumstances.

The anatomical substrate for this SS probably includes the hippocampus and septum, and it is mediated by the parasympathetic, rather than the sympathetic, nervous system (Henry, 1986b).

As Selye (1946) noted, there is increased activity of the pituitary–adrenocortical axis, with increased cortisol secretion. In humans, this response is already present in infants, for example, just prior to delivery and after circumcision (Joffe, Vaughn, & Barglow, 1985). In bereaved adults many studies show increased corticosteroid activity (Irwin et al., 1987; Wolff, Hofer, & Mason, 1964), and diminished immunocompetence (Bartrop, Luckhurst, & Lazarus, 1977; Calabrese, Kling, & Gold, 1987). Both arise in proportion to the lack of denial and presence of distress and depression in the bereaved subjects (Irwin et al., 1987). Diminished immunocompetence may lead in turn to diminished resistance to inflammation and tumors in monkeys (Coe et al., 1989) and humans (Calabrese et al., 1987).

The psychosocial readjustment in adaptation is yielding, accepting and mourning loss, and then turning in hope to a new future. In the maladaptive situation, people feel overwhelmed and helpless, withdraw into depression and give in to despair. In the traumatic state, they have given up, their vulnerability is fully exposed, and they succumb. Succumbing to overwhelming stress has been a common view of trauma.

Helpers may themselves be overwhelmed and despair of being able to help. This is frequently seen when devastation is great, traumatic bereavements have occurred, or patients have been diagnosed with an incurable disease or are dying. Helpers need to accept death and destruction, and their own limits and vulnerabilities. Inability to accept loss often leads to inappropriate exhortations to “cope,” to “not cry.” At worst it can lead to denigration of victims and callousness in helpers. Helpers will ultimately also need to grieve the loss of their charges as they become self-sufficient.

#### *Fighting–Defending*

This SS is evoked by the appraisal that one is being attacked, and so must defend oneself and be freed of the threat at any cost. The paradigmatic situation is that of being attacked by a predator—animal or human—and the evolutionary function of the SS is to deter or eliminate such attacks.

Deterrent threat postures described by Darwin (1890/1965) are similar in all vertebrates (Blanchard & Blanchard, 1988) and all cultures. They are naturally present in children, including the deaf and the blind (Henry, 1986b). The amygdala and the hypothalamus seem to be associated with fight (Blanchard & Blanchard, 1988). As Cannon (1939) pointed out, there is arousal of the sympathetic nervous system. NE secretions are increased, especially that of NE, when the response is especially directed and aggressive. Clinically, the heart rate and blood pressure are elevated (Henry, 1986b). Cortisol secretion may increase, but only in the short term (Leshner, 1983). Although often reported as raised in male aggression, testosterone is raised mainly in competitive aggression (Blanchard & Blanchard, 1988). In fact, castrated animals can fight well against external danger, although they compete poorly against their own kind (discussed later). The physiological responses of this SS are sometimes seen as the markers of PTSD (Friedman, 1991).

If threatening postures and vocalizations are not sufficient deterrents, inflicting damage on the enemy in proportion to one's own actual or potential (as yet small) wound is used to signal to the enemy that it is “a tooth for a tooth, an eye for an eye, a life for a life.” This talionic principle is accompanied by a feeling of seeking revenge and may deter attack or a further attack. If these defensive maneuvers of adaptive fighting fail to frighten off the enemy, defense becomes attack and is associated with “affective aggression” (Kling, 1986)—that is, hatred and a desire to kill. Maladaptive fighting includes persecution, eradication, destruction, and killing on a large scale. The traumatic reaches of this SS involve violence, murder, and atrocities, with later horror at the evil of the killing.

The traumatic reliving of this SS among Vietnam veterans has recently drawn much attention. It is uncommon in helpers, although it is advisable to be aware of hatred and the desire to be rid of patients and clients who have come to be perceived as threats.

#### *Fleeing*

This SS is evoked by the appraisal that it is essential to escape from danger—paradigmatically, predators, but also natural disasters. When

distancing is impossible, the animal may hide or make itself small (Henry, 1986b) and "freezes,"—emitting low-aggression-releasing cues to others. Animals and humans in such situations may also "cut off"—avert their heads from the source of attack, and close their eyes and ears (Dixon & Kaesermann, 1987), as well as their minds. Flight is a ubiquitous SS in animals and humans of all ages and all cultures. It is common during disasters and wars.

Flight is served by parts of the hypothalamus, amygdala, and mid-brain (Henry, 1986b). It is also associated with activity of the sympathetic nervous system, though E, NE, and cortisol ratios vary from those with other arousal SSs, and the parasympathetic nervous system may be active as well. This demonstrates that it is not only the physiological markers that may distinguish different SSs, but also their different combinations and ratios.

Adaptive flight is associated with feelings of fear and terror, which turn to relief and a sense of deliverance with escape. When escape is blocked, panic may set in, with a sense of persecution and incipient engulfment and annihilation. Alcohol and benzodiazepines (e.g., Valium) may diminish engulfment anxieties (Dixon & Kaesermann, 1987).

In the traumatic state, the organism senses that it is being hunted and is about to be caught and killed. Van der Kolk and Greenberg (1987) suggest that the inability to escape aversive events ("inescapable shock") may be relevant to the trauma response. It is associated with NE depletion in the chronic state (see also "Assertiveness"). Panksepp (1986a) draws attention to the fact that flight symptoms are common components of startle responses, nightmares, and phobias (as also noted in PTSD). Phobias and paranoia may be symptoms of reliving prior terrors of being "hunted" and engulfed.

Helpers may themselves feel the need to escape the stressors that affect their charges. They may also become fearful of their clients and their own responsibilities for them. In either case, helpers may find rationalizations for escaping their involvements. Premature withdrawal of services is common, the usual excuse being lack of funds.

### *Competing*

This SS is evoked when one appraises that one must obtain scarce resources before others do. The paradigm is a contest for food. In early evolutionary theory, the fittest were seen to win such struggles more frequently, leading to their "natural selection" and differential survival (Scott, 1989).

It is now clear that it is more adaptive, safe, and economical for animal communities to establish hierarchies, which then determine the distribution of scarce resources, than for all to struggle against all others each time. Status in hierarchies is determined by prior (nonlethal) ritualized contests (Wilson, 1982). Hierarchical competition (pecking order) is ubiquitous among social animals and in primitive cultures (Lienhardt, 1966). It is present in toddlers by the age of two (Cummings, Hollenbeck, & Iannotti, 1986).

Competition for status among males, or "social aggression," has been studied the most physiologically. High status is reflected very sensitively in high levels of sex hormone levels, especially of testosterone, and this is constant across species (Knol & Egberink-Alink, 1989; Mazur, 1983). In humans, even winning or losing a tennis match is reflected in testosterone levels (Booth, Shelley, & Mazur, 1990). Defeat is associated with low levels of testosterone, as well as of female sex hormones, and increased levels of the "adaptation" hormone cortisol (Henry, 1986b; Leshner, 1983).

Interfemale competition may be facilitated by testosterone, as well as by female sex hormones (Henry, 1986b). The medial hypothalamic sites that selectively take up testosterone seem to be involved in competition.

In a situation of scarce resources, winning a dominant position is adaptive because it confers privileged access to and possession of food, sex, shelter, and comfort. Power also gives the privilege of taking the largest share and then distributing the rest down the hierarchy.

When competing is maladaptive, defeat and submission may become self-perpetuating, with new challenges being met with increased levels of corticosterones and compromised immunocompetence (Fleshner, Laudenslager, & Simons, 1989). The confident efforts in high-status individuals, in contrast, are facilitated by high testosterone, E, and NE levels (Henry, 1986b).

When hierarchies break down, a struggle for resources ensues. Ordered distribution fails, greed and envy take over, and the strong plunder the weak. The defeated may be crushed and emptied, and in traumatic situations the weak may be terrorized, marginalized, and finally eliminated. This is where the classical evolutionary notion of all struggling against all, and survival of the fittest is most appropriate.

Those who continue power struggles without winning may be vulnerable to hypertension and infections (Jemmott, 1987), while defeated and dejected Type A personalities (those constantly struggling against deadlines and other people) may be predisposed to CHD (Appels & Mulder, 1989).

Helpers may become agents and advocates in the competitive strug-

gles of victims, and may use their status and influence to effect better distribution of resources. However, helpers may also compete among themselves for status and leadership within their own groups, or access to clients, funds, and research greater than those of other helping groups. At worst, victims themselves become a resource to compete for and use, rather than help.

#### *Cooperation–Affiliation*

This SS is evoked when it appears necessary to become a trusting partner with others to create mutual essentials. The biological paradigm is procreation. Cooperation has been present in evolution since protozoa (Scott, 1989), and its function is to preserve and increase the community's gene pool.

When reciprocity is not immediate, the initial giving may be seen as altruistic. Trivers (1971) called this "reciprocal altruism," because in a community such giving is reciprocated over time. Reciprocal altruism is found in animals and humans. All cultures have customs of giving and taking, and mutual obligation. Even babies share—they take and hand back (Eibl-Eibesfeldt, 1980). Such activity establishes bonding or a "social glue" (Youniss, 1986).

Social bonding is associated with parasympathetic responses such as decreases in blood pressure, pulse, and E and NE secretion (Henry, 1986b). Sexual activity and social bonding involve the amygdala and temporal and orbital cortices (Steklis & Kling, 1985)—the precise areas highest in mu-like opiate receptors. We may speculate that opiates attach to these sites, enhancing a sense of social comfort, while their withdrawal intensifies a sense of social need. We may further speculate that external opiate drugs may be used to attempt to simulate the calm of social bonds.

In nature, adaptive cooperating—as seen, for instance, in postdisaster euphoria—is associated with the emotions of trust, mutuality, generosity, reciprocity, sharing, and love. Its outcome is creativity and synthesis. When the SS is maladaptive, there is initially identification with, and appeasement of, the noncooperating partner. This is akin to identification with the aggressor (i.e., paradoxical gratitude, pathological transference, the Stockholm Syndrome as noted by Ochberg [1988]). However, feelings of being betrayed, exploited, and robbed emerge. There is a sense of stagnation and disintegration in place of synthesis and creativity. In the traumatic state, there is a final sense of alienation, decay, and falling apart.

Cooperation, generosity, and cohesiveness are commonly noted in

traumatic situations (Turner, 1967). Social support is recognized as ameliorating traumatic stress (Figley, 1986). Maladaptive cooperation, however, exacerbates traumatic stress. Jemmott (1987) found that affiliative personalities were relatively protected from high blood pressure and had better immunocompetence than did controls.

Helpers themselves may become imbued with a surge of generosity and giving, which is reciprocated with gratitude by those helped. Cooperation between victims and helpers may lead to creative solutions. If the expected generosity or gratitude is not forthcoming, there may be disappointment and a sense of being exploited or betrayed. The previously creative mutual helping process may stagnate or disintegrate.

#### *Judgments as an Example of the Applications of SSs*

We can see that different SSs evoke qualitatively different stress responses. However, as mentioned above, they are also associated with the foundations of higher-level ramifications, of which judgments are one example. Judgments may be conceptualized as one form of psychosocial feedback (reappraisal) on the functioning of SSs. One type of judgment, let us presume, is "right and wrong." Communication of right and wrong includes anger and guilt, both of which are commonly noted in association with traumatic stress. We may say that anger is a feedback judgment on the maladaptive nature of others' SSs, while guilt is a judgment on the maladaptive nature of one's own SSs. The two interact and may fluctuate. Anger and guilt may themselves be adaptive or maladaptive. Let us see how SSs may allow us to refine and understand the various angers and guilts associated with different SSs.

- *Rescuing.* Helpers may feel wrath toward victims who do not accept help, or who may even put helpers into hazardous situations by their actions, such as people who refuse to evacuate burning houses. Alternately, rescuers feel survivor guilt for not doing enough to save others.
- *Attaching.* Those who feel abandoned protest angrily or assume guilt for having displeased their attachment figures. ("Why?!" and "Why me?!" are expressions of anger relating to another judgment—justice—and express the injustice of being "punished" even if one has been good.)
- *Asserting.* The anger here stems from frustration when thwarted, and the guilt is that of failure.
- *Adapting.* Anger is at others' lack of support; guilt is for not missing the lost person.
- *Fighting.* Fury is felt toward a threatening object, but guilt for mur-

der facilitates adaptive fighting.

- *Fleeing*. The anger is felt toward hindrances to escape, while the guilt is for endangering the self and others by being stuck.
- *Competing*. There is outrage at the threat to one's status, which may be balanced by priority guilt for improper precedence over others. These responses facilitate the establishment of an adaptive hierarchy.
- *Cooperating*. There is anger with a straying partner and the guilt of betrayal.

A fuller exploration of judgments is presented elsewhere (Valent, in press).

## DISCUSSION

It seems that SSs could help to provide a meaningful psychobiological framework for the variety of contradictory biological, psychological, and social responses in traumatic situations. Their biopsychosocial nature, their fluctuations according to circumstances, combinations of SSs in different permutations and proportions, together with the "culture" and phases of specific traumatic situations and the people in them, account for the richness of traumatic stress responses. Understanding SSs can help to understand the nature, reason, and manner of production of traumatic stress responses.

It is also suggested that SSs provide an important part of a framework for understanding the components and connections between stresses and illnesses. They help to establish a framework for appraisals and stress responses, whether adaptive or maladaptive, biological, psychological, or social. They set up a framework for the multitude of stress responses and help to give them sense and purpose in terms of the survival of one's self and others. They help to explain the beneficial effects of stress. Survival strategies are also trauma and illness components, and as such they help us to understand the nature of trauma and some of the reasons for particular illness symptoms. Thus SSs are useful to a theory that tries to meet the stress-leads-to-illness paradigm.

With regard to a theoretical view of traumatic stress, it is suggested that PTSD may be seen as the umbrella concept that indicates how traumatic stress responses are reexperienced and avoided. On the other hand, SSs describe what is reexperienced in disorders and why. Therefore, SSs supplement the wealth of the concept of PTSD. They also suggest that what have been variously designated as core aspects of trauma may be the traumatic states of different SSs.

Objections may be raised against delineations of certain SSs. On the whole, however, SSs correspond well to the survival behaviors de-

scribed by Plutchik (1980) and Panksepp (1989a). Certainly, opinion is consistent about the existence of a relatively small number of discrete basic survival behaviors. Some differences are semantic, and the ultimate honing and naming of SSs may depend on further research in various disciplines.

What was said about the SSs is even more applicable to their components. There are a variety of physiological, and emotional and social, nuances that are difficult to capture in one or two words, and indeed need to be altered for slightly different situations. This area requires further exploration.

The specificity of SSs may be questioned. For instance, in the physiological area, some chemicals (E, NE, cortisol, opioids) are present in more than one SS. However, as Panksepp (1986b) tells us, it is likely that nature performs its usual economies by using the same chemicals for different purposes. As noted above, physiological profiles and proportions may matter at least as much as the actual chemicals. It is here that the study of appraisals and emotions is particularly useful, since subjective explanations of feeling and intention may crystallize meaning to a myriad of measurements.

## *Applications of the SS Framework*

### *Clinical Application*

The conceptualization of SSs is ". . . in a deep sense, simple and logical . . ." (Panksepp, 1986a) in promoting an understanding of traumatic stress responses. The responses make sense in terms of PTSD symptoms too, as SSs from the traumatic situation still being relived and avoided. Therapeutically it may provide great relief to victims to define the source and function of a variety of their responses that may initially seem irrational to them.

Further, the responses and symptoms themselves may give clues to the specific SSs evoked in the original traumatic stress situations, and help recover them and their contexts if they have been unprocessed or forgotten. Even judgments, moral conflicts, and struggles with existential meanings may give clues to the nature and context of SSs in the original context.

Last, the concurrent biological, psychological, and social natures of SSs draw attention to concurrent biological, psychological, and social dysfunctions. This enhances more comprehensive treatment.

As an example, the soldier whose friend was killed may present years later as a Vietnam veteran who evidences periods of depression, suicidal behavior, and outbursts of aggression for no apparent reason. He may

also be deeply cynical about society and his own worth, and physically may suffer violent headaches and be hypertensive. Each of these end symptoms can be traced back to the original traumatic stress(es). Then each can be explained and treated in a meaningful way, not only as a symptom, but in the context of the original trauma.

#### *Research*

Survival strategies have opened a new window of opportunity to investigate the meaning of physiological, psychological, and social responses to stress. They make it possible to validate more clearly the intuitive understanding that separation distress, grief, arousal to fight, and so on have different physiological and psychosocial associations. On the one hand, one can study more clearly the associations of a "pure" SS. On the other hand, one can clarify the significance of responses by knowing which SSs are being evoked at the time. This may be determined by knowing the subjective state of the person's appraisals and emotions (Panksepp, 1989a). This knowledge may be quite important even in simple experiments such as an examination, because the stress may evoke a number of SSs, such as assertiveness, competition, flight, and acceptance.

#### *Toward a Framework for Emotions and Social Actions*

It may be said that Table 1, which lists emotions and social responses according to SSs, provides a framework for those responses and denotes their significance and function. For instance, depression is associated with maladaptive (impacted, unresolved) grief. We may speculate that the illness depression may contain this emotion, as well as other maladaptive and traumatic features relating to adaptation (mitigated by defenses). Depression (and defenses) may obscure the initial traumatic situation.

Note that anxiety does not appear in Table 1. It is a less specific emotion, applicable to each SS, but with different overtones in each, akin to anger and guilt as described earlier. Thus I suggest intuitively that the anxiety of, say, being caught and killed (flight) is different from the anxiety of killing someone. If this were not so, global anxiety would prevent the choice of any specific SSs. Also the traumas associated with each SS are associated with the ultimate dreads of humankind, and each feels somewhat different.

Further, while anxieties that arise during SSs are functioning as negative feedback signals and may be called ego anxieties, the anxieties that arise in response to negative judgments may be called superego anxieties. The anxieties of using the wrong SS may be called id anxieties. Each of these anxieties is a little different. In researching anxiety, it is important to know which anxiety is being considered.

#### *Secondary Traumatic Stress Responses*

People's SSs influence not only those with whom they share a current traumatic situation, but also those who try to ameliorate its later effects. This group includes family, emergency workers, and helping professionals. The interactive nature of emotions and actions in SSs may help to explain the ubiquitousness of STS responses. The mechanisms of STS may be described in the following.

#### *Identifying with and Experiencing Victims' SSs*

Empathizing with and being devoted to victims opens the helper to feeling all the maladaptive SSs and traumatic responses of victims. Hence the initially adaptive identification and understanding of victims may lapse into the helper's becoming a fellow victim.

#### *Responding to Victims' SSs with Own SSs*

The emotions and actions of victims may evoke a complementary (or another) SS in helpers. For instance, conveying a sense of a helpless dread of death or of anger at being abandoned (attachment cues) may evoke care and responsibility, or potential guilt for causing harm, in a helper, and elicit a rescuing SS. Ideally the appropriate adaptive SSs are elicited—that is, those that help rectify victims' maladaptive ones.

However, the SSs evoked in helpers may be maladaptive too. This may happen if the helpers themselves are overburdened or are inadequate to the task. Another difficulty may lie in helpers' misinterpreting victims' responses as belonging to the present, instead of understanding that the victims are reenacting their traumatic situations (transference). In either case, helpers may respond with inappropriate SSs. For instance, they may retreat (flight) in the face of victim anger, or they may care too much because of their own guilt.

Survival strategies enable helpers to define their own responses and understand them in the context of their involvements with victims. This could be considered as using countertransference.

#### *Secondary Traumatic Stress Disorder*

From this perspective, when helpers cannot execute their own SSs adaptively, their unsuccessful maladaptive SSs (that is, their traumatic stress reactions) may deteriorate into STSD. For helpers, rescuing and asserting are commonly used SSs. So when not coping, helpers may come to feel, respectively, burdened, resentful, rejecting, and guilty; and frustrated, demoralized, not in control, exhausted, and "burned out."

Associated with STSD, they may feel judgments of guilt such as survivor guilt and guilt for failure and incompetence. They may also suffer the different angers and anxieties of these SSs.

STSD, like STS responses, can also develop through intense identification with victims' maladaptive and traumatic responses, and intense inappropriate eliciting of a variety of inappropriate helper SSs.

Helpers need to identify the variety of STS responses and STSD symptoms they experience, and integrate them into debriefing meetings or into counseling and therapy. And those involved with helpers may themselves be affected in the same way as the helpers and become tertiary victims.

#### Wider Applications

Because trauma is situated between life and death, health and illness, normality and abnormality, it occupies a crucial place for humans. It may not be death, as much as it is trauma, that provides the feared counterpoint to life. As such, it ramifies all aspects of life. We already noted trauma's presence in the biological, psychological, and social fabric; in various moral judgments; and in different social groupings. We noted that trauma is symbolized in morality, justice, values, meaning, and purpose. To examine these aspects in any depth requires much future exploration. However, such research is necessary to fully understand the extraordinary scope of trauma in human existence.

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