

Introduction to Survival Strategies

by

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This chapter introduces the concept of Survival Strategies. Survival Strategies are suggested to facilitate the recognition, naming, and making sense of the varied sequelae of traumatic events. They are like the colors refracted by a prism of white light. The colors add depth and dimension to what is relived and avoided in PTSD.

PROLOGUE

It may be said that currently in the field of traumatic stress, two strategies of survival, that is fight and flight, are generally recognized. For instance, criterion D of Post-traumatic Stress Disorder (PTSD) (APA, 1994), implies physiological arousal associated with those two strategies of survival. It may be further said that it is the maladaptive biological, psychological and social aspects of these strategies, and their traumatic contexts and meanings which are relived and avoided in ways indicated in criteria B and C.

Fight and flight were already identified by Darwin (1872/1965) as evolutionary attributes which favored survival, and their sympathetic nervous system associations were described by Cannon in 1915 (Cannon, 1963). These same associations were found to be salient in Vietnam veterans, and indeed their origins could be traced to fight and flight combat contexts. Thus it seemed to be heuristically logical to include them in PTSD. Then the symptoms in PTSD made sense, in terms of reliving and avoiding biological, psychological and social sequelae of past fight and flight survival responses.

However, on closer inspection traumatic stress responses, especially from other contexts than combat, span much more than fight and flight responses. For instance, such responses include feelings of abandonment, betrayal, defeat, surrender, grief, and anguish for not having saved others. Further, symptoms may include a great variety of moral judgments such as survivor guilt, shame, outrage, shattered values and principles, and disruptions of meaning and purpose. These are not covered by PTSD. Nor are adaptive contentment and satisfaction responses emanating from achievement of survival goals, which are also present in traumatic stress and are relived later.

What is required then, is a framework which accommodates in heuristically meaningful ways the great variety of stress responses, their adaptive and maladaptive biological, psychological and social expressions, and their ramifications in various social and moral/spiritual dimensions.

It is suggested that eight strategies of survival called Survival Strategies (SSs), help to provide such a framework. These SSs are like eight notes whose combinations and permutations, overtones and harmonics, provide the musical story of traumatic stress and its sequelae. The eight SSs are Rescue, Attachment, Assertiveness (Goal Achievement), Adaptation (Goal Surrender), Fight, Flight, Competition, and Cooperation.

This chapter describes the historical precursors to the formulation of the eight SSs, the generic features of SSs, and their applications. Subsequent chapters describe the SSs in detail within the three dimensional (triaxial) framework of traumatic stress (chapters 3-6).

Because it is suggested that SSs are conceptually evolutionary survival templates shared with other animals, their place in

evolution is briefly examined.

Strategies of Survival and Evolution

Human evolution shows a relatively recent divergence from other animals with whom humans have shared common means of surviving very harsh conditions. For instance, 99% of human genetic makeup is shared with chimpanzees (Koepping, 1989). Similarly, for 99% of its evolution (up to 10,000 years ago), human existence was closely bound to hunting (Lee and DeVore, 1977) and defense against predators. Thus the unprecedented evolution of the human brain in the last half a million years carried forward strategies of survival such as defense and hunting which humans shared with other animals (Laughlin, 1977; Koestler, 1974).

Human mentation and language probably developed only over the last 50,000 years or so (Maxwell, 1984), and helped otherwise vulnerable humans to hone their evolutionary survival skills in the wild. Indeed, it is only in the last 10,000 years, an evolutionary blink, that human civilization started, with production of surplus food, domestication of animals, and building of cities. It is only in the last few thousand years that bands and clans developed societies, and the old evolutionary templates were applied to economy, politics, and the higher function levels of the depth axis. For instance, myths gave rise to modern religions with single principles to explain the world about 2,500 years ago. Concepts of moral rightness and goodness, and self-awareness also emerged at about this time.

On the whole however, world views remained narrow, marked by ethnocentricity, territory, religion, and local economy. Only 500 years ago was the world's central place in the universe first lost. Only in this century did religion, ideologies and the human mind blossom into scientific targets of study.

Thus it is important to note the long evolutionary heritage of responses to current threats to survival.

Theories of Evolution and Discoveries of Strategies of Survival

Darwin Before Charles Darwin (1859/1974) published *The Origin of Species* in 1859, it was commonly believed that each species was immutably created by God. However, Darwin noted that species evolved through differential propagation of favorable variations, which Darwin called natural selection. Favorable variations could enhance life through a competitive edge in struggles with predators, environmental conditions, members of the same and species, and struggle for progeny. Thus various functions including instincts and emotions could evolve if they favored survival. In *The Expressions of the Emotions in Man and Animals* Darwin (1872/1965) described rage and terror with accompanying fight and flight as strategies serving survival. He included cooperation also as a means of enhancing life.

Darwin (1872/1965) hypothesized that many gestures and emotions were evolutionary throwbacks to earlier survival activities. For instance males in rage exposed their teeth across species. Increased pulse rate and dilatation of the pupils when in terror and flight were also seen across species. Similarly human sneers could derive from animal snarls of defiance. In summary, Darwin saw biopsychosocial functions evolve because they served survival. Such functions included fight and flight.

Modern Evolutionary Theory and Expansion of Possible Strategies of Survival

The path to discovery of more strategies of survival was blocked first because of misinterpretation of Darwin's (1859/1974) natural selection as survival of the fittest. This view allowed only struggle for survival, or competition, as a strategy of survival. The view was politicized to justify on evolutionary grounds entrenched power groups, and racist, even genocidal theories. Next, neither survival of the fittest, nor natural selection could explain altruism, or the fact that it was often the fittest who sacrificed themselves for the group. Lastly, it was unclear how natural selection worked.

Modern evolutionary theory unlocked the impasse. It held that it is genetic mutations which produce the variations which are then naturally selected according to Darwin's theory. Mutations could be spread fairly rapidly through sexual reproduction in small populations. This so called inbreeding, present in humans too during their evolution, made groups of a few hundred rather than individuals, the units of evolution (Scott, 1989).

This meant that altruism and sacrifice could potentially further evolution if more genes (albeit in kin) could be saved, than would have happened if the fittest preserved only themselves. This "inclusive fitness" came to be seen as a vehicle of evolution (Scott, 1989), and it opened up possibilities of means of survival beyond competition to behaviors such as protection, caretaking, and cooperation.

PRECURSORS TO SURVIVAL STRATEGIES

The SSs which are brought together for the first time as such, already have already been described in various places as important means of survival.

Fight and Flight

We already noted that Darwin's (1872/1965) descriptions of rage and terror and Cannon's (1963) addition of sympathetic nervous system arousal. Cannon clearly described fight and flight as means of survival by seizing prey and killing enemies, and escaping enemies and danger respectively. Cannon speculated that fight and flight were reciprocal, depending on how events were perceived.

General Adaptation Syndrome; Conservation-Withdrawal Syndrome; Loss and Grief

These three concepts are examined together because it will be suggested that they are part of the same Adaptation SS.

General Adaptation Syndrome Selye (1936) described a syndrome consisting of an enlarged adrenal cortex secreting high levels of cortisol, severe involution of the thymus, spleen, lymph nodes, and deep bleeding ulcers in the stomach and duodenum. Because a variety of noxious agents produced this syndrome, Selye called the response the General Adaptation Syndrome (GAS). Selye promoted the generalist view of illness, maintaining that a variety of illnesses such as peptic ulcers and immune diseases resulted from various derailments of the GAS and host vulnerabilities (Selye, 1946).

However, though Selye used a variety of chemically different stressors, they all overwhelmed animals to the point of shock and potential death. Thus they were all strategically similar, even though in the realm of trauma. However, Selye did add to fight and flight a stress response of adaptation or surrender to overwhelming conditions.

Conservation-withdrawal syndrome This syndrome was described by Engel and Schmale (1972) as a basic survival mechanism opposite to fight and flight. Its symptoms were weakness, tiredness, fatigue, hypotonia, emptiness, and depressive type symptoms. The syndrome seems to be the psychobehavioral equivalent of the GAS (see also chapter 11).

Loss and Grief Loss and bereavement are stressors requiring adaptation. Freud (1917) in *Mourning and Melancholia* differentiated grief and depression. In the former there was a clear reason for the condition, and there was a piecemeal painful detachment of the bonds to the dead. In depression there was no clear view of what had been lost, and there was no detaching process from the lost person. Though not usually conceptualized as a strategy for survival, grief and mourning allow adaptation by relinquishing love bonds and turning to new ones. Grief may be part of the adaptive psychic aspect of the GAS (chapter 11).

Attachment

Bowlby (1971) described Attachment as a core biobehavioral phenomenon in all mammals. It involved bonding to a particular caretaker, for the function of protection from predators, and the teaching of survival skills. It was more basic than feeding, though it facilitated it and provision generally, as well as psychophysiological regulation.

Caretaking

Caretaking is also a core phenomenon found in all mammals and is reciprocal to attachment (Bowlby, 1971; 1975). Caretaking involves a psychobiological bond which facilitates retrieval, protection and rescue and it facilitates nurturance, home-building and psychophysiological regulation.

Search for Other Survival Biobehaviors

As it became clear that evolution favored a small number of basic biobehaviors on which to build many variations, some workers attempted to define the basic types of survival behaviors.

Scott (1989) specified 11 such behaviors, which included ingestion, elimination, shelter seeking and fertilization, as well as defense, conflict, calling for and giving care and flocking and cooperating.

Plutchik (1980; 1993) described eight primary emotions, each linked with a survival function. Fear was linked with escaping danger, anger with attacking enemies, joy with possessing a sexual mate, sadness with reintegration, acceptance with grooming and friendship, disgust with rejecting poison, expectation with exploration and surprise with orientation.

Panksepp (1989) described 5 "executive emotive (or command) circuits" of the brain linked to specific functions. The foraging-expectancy system motivated goal directed survival activities such as hunting and obtaining food. The anger-rage system involved defensive aggression. The fear-anxiety system motivated flight and possibly freezing. The separation-distress-panic system included separation induced distress vocalizations. Sadness, sorrow and grief are included in this system. Finally, the social-play system served play.

It is suggested that some of these biobehaviors such as play and orientation are general to all SSs. Others such as ingestion, elimination and disgust belong to lower levels of function. However, most other biobehaviors do correspond or overlap with SS precursors and indeed SSs described below. The challenge is to isolate specific discrete survival strategies at a consistent function level.

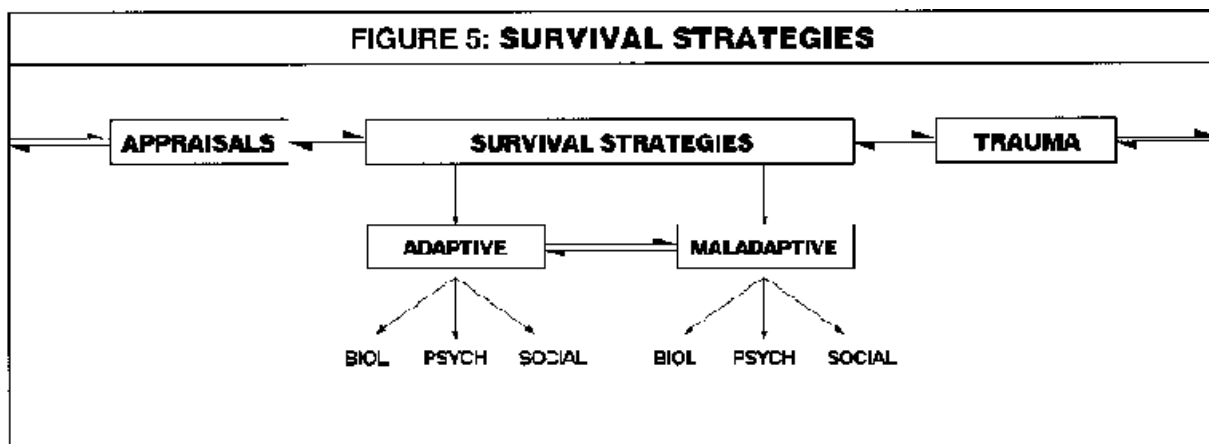
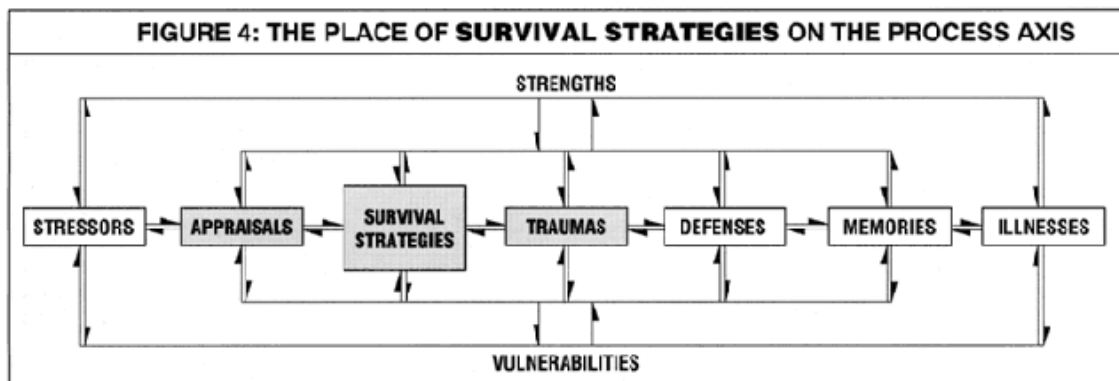
SURVIVAL STRATEGIES

Survival strategies were previously suggested to explain diverse and often opposite stress responses described in a bushfire

(Valent, 1984). Ss were previously applied to Secondary Traumatic Stress Disorder or Compassion Fatigue (Valent, 1995).

Definition and Description of Survival Strategies

The following is a brief generic definition of Ss: *Survival Strategies are specific stress responses which include specific adaptive and maladaptive, biological, psychological and social constituents.*



Characteristics of Survival Strategies.

The following are suggested characteristics of Ss.

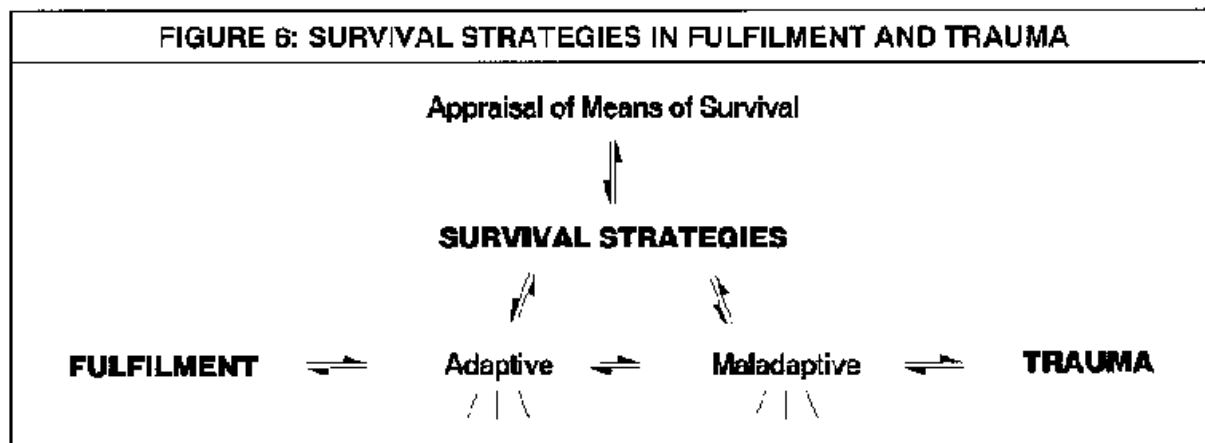
Evolutionary adaptedness. Ss are evolutionary templates whose function is to enhance survival of evolutionary social units.

Finite number with multitude potential combinations. There is a small number (eight) of discrete SS templates. They may function individually or in a wide range of combinations.

Level of operation. Ss function on a level between reflexes and instincts, and abstract functioning, having rich two way connections with both. Like stress responses, anatomically they are intimately associated with MacLean's (1973) "old mammalian" brain, that is the midbrain, limbic system and primitive cortex, whose role is to "...guide behavior with respect to the two basic life principles of self-preservation and preservation of the species."

Biopsychosocial Nature. Each SS has integrated biological, psychological and social aspects which act as functional units.

Adaptiveness and maladaptiveness. Ss may be adaptive or maladaptive according to circumstances. Adaptive Ss contribute to fulfillment, while maladaptive Ss contribute to strain, traumas, symptoms and illnesses (Figures 5, 6). The adaptive and maladaptive aspects of Ss may be compared to amino acid codes on a double DNA helix, with manifestations being the result of both the adaptive and maladaptive helices.



Modulation. Complex biological, psychological and social feedbacks modulate SSs from each axis of the triaxial framework.

The Eight Survival Strategies and Appraisals Which Evoke Them

The eight suggested SSs and the appraisals of means of survival which evoke them are shown in Table 1.

TABLE 1

Survival Strategies and the Appraisals Which Evoke Them

APPRAISALS	SURVIVAL STRATEGIES
1. Must rescue others	1. Rescuing
2. Must be rescued by others	2. Attaching
3. Must achieve goals	3. Asserting
4. Must surrender goals	4. Adapting
5. Must remove danger	5. Fighting
6. Must move from danger	6. Fleeing
7. Must obtain scarce essentials	7. Competing
8. Must create scarce essentials	8. Cooperating

It is suggested that these eight SSs include the survival biobehaviors described above. Inconsistencies with others' nomenclature is sometimes semantic, but at other times because it was considered that the suggested biobehavior was not specific enough, or it was subsumed at a lower function level within one of the SSs. The SSs examined here will be seen to reflect survival biobehaviors consistent with the literature from a number of disciplines.

Specifics of the Survival Strategies

The specifics of Figure 5 and Table 1 are brought together in more detail in Table 2. This shows the specific appraisals of means of survival, the SSs they evoke, and their adaptive and maladaptive biological, psychological and social constituents. Two judgment columns denoting worth are added to give a sense of where SSs may lead when used in higher human evolutionary functions. In the following chapters hierarchical morality and justice are also detailed. (For their categorizations see chapter 16.) Table 2 is centrally important to the coming chapters in which SSs are examined in detail.

TABLE 2: SURVIVAL STRATEGY COMPONENTS

APPRAISAL OF MEANS OF SURVIVAL	SURVIVAL STRATEGIES	SUCCESSFUL / ADAPTIVE RESPONSES				UNSUCCESSFUL / MALADAPTIVE RESPONSES				TRAUMA RESPONSES
		BIOLOGICAL	PSYCHOLOGICAL	SOCIAL	JUDGEMENTS	BIOLOGICAL	PSYCHOLOGICAL	SOCIAL	JUDGEMENTS	
MUST SAVE OTHERS	RESCUING PROTECT PROVIDE	↑ ESTROGEN ↑ OXYTOCIN ↑ OPIOIDS	CARE EMPATHY DEVOTION	RESPONSIBILITY NURTURE PRESERVATION	RESPONSIBLE GIVING ALTRUISTIC	SYMPATHETIC & PARASYMP AROUSAL	BURDEN DEPLETION SELF-CONCERN	RESENTMENT NEGLECT REJECTION	IRRESPONSIBLE NEGLECTFUL EGOTISTIC	ANGUISH COMPASS FATIGUE CAUSED DEATH
MUST BE SAVED BY OTHERS	ATTACHING PROTECTED PROVIDED	? ↑ OPIOIDS	HELD, CARED FOR NURTURED LOOKED AFTER	CLOSE SECURE CONTENT UNION	WORTHY DESERVING LOVABLE	↓ OPIOIDS	YEARNING NEED CRAVE ABANDONMENT	CRY INSECURE DEPRIVED SEPARATION	UNWORTHY ENCUMBRANCE REJECTABLE	HELPLESSNESS CAST OUT LEFT TO DIE
MUST ACHIEVE GOAL	ASSERTING COMBAT WORK	↑ E, NE ↓ CORTISOL ↑ IMMUNOCOMP	STRENGTH CONTROL POTENCY	WILL HIGH MORALE SUCCESS	STRONG CAPABLE SUCCESSFUL	↑↑ E, NE DEPLETION E, NE ↑ BP, ↑ CHD	FRUSTRATION LOSS OF CONTROL IMPOTENCE	WILLFULNESS LOW MORALE FAILURE	INADEQUATE INCOMPETENT FAILURE	EXHAUSTION "BURN-OUT" POWERLESSNESS
MUST SURRENDER GOAL	ADAPTING ACCEPT GRIEVE	PARASYMP AROUSAL ↑ CORTISOL	ACCEPTANCE SADNESS GRIEF HOPE	YIELDING MOURNING TURN TO NEW	PITIFUL SYMPATHY TRIBUTE	↑ CORTISOL ↓ IMMUNOCOMP ↑ INFECTION, ↑ CA	OVERWHELMED DEPRESSION DESPAIR	COLLAPSED WITHDRAWAL GIVING UP	WEAK PATHETIC DESPICABLE	DAMAGED GIVEN IN SUCCUMING
MUST REMOVE DANGER	FIGHTING DEFEND RID	SYMP AROUSAL ↑ E, NE ↑ BP	THREAT REVENGE FRIGHTEN	DETERRENCE WOUNDING RIDDANCE	BRAVE NOBLE HEROIC	↑↑ SYMP AROUSAL ↓ CORTISOL	HATRED PERSECUTION KILLING	ATTACK ERADICATION DESTRUCTION	VIOLENT WICKED MURDERER	HORROR EVIL MURDER
MUST REMOVE ONESELF FROM DANGER	FLEEING RUN, HIDE SAVE ONESELF	SYMPATHETIC & PARASYMP AROUSAL	FEAR TERROR DELIVERANCE	RETREAT FLIGHT ESCAPE	PITIFUL VULNERABLE REFUGEE	NE DEPLETION ↑ E & CORTISOL	PHOBIA PARANOIA ENGULFMENT	AVOIDANCE PANIC ANNIHILATION	TIMID PANICKY COWARD	"INESCAPABLE SHOCK", BEING HUNTED, KILLED
MUST OBTAIN SCARCE ESSENTIALS	COMPETING POWER ACQUISITION	↑ TESTOSTERONE SYMP AROUSAL	WINNING STATUS DOMINANCE	CONTEST HIERARCHY POSSESSION	SUPERIOR RESPECTED HONORED	↓ TESTOSTERONE ↓ FEMALE HORMS ↑ CORTISOL	DEFEAT GREED, ENVY EXPLOITATION	OPPRESSION STRUGGLE PLUNDER	INFERIOR CONTEMPTIBLE HUMILIATED	TERRORIZATION MARGINALIZATION ELIMINATION
MUST CREATE MORE ESSENTIALS	COOPERATING TRUST MUTUAL GAIN	↑ OPIATES ↓ BP, E, NE	MUTUALITY GENEROSITY LOVE	INTEGRATION RECIPROCITY CREATIVITY	TENDER POIGNANT BEAUTIFUL	↓ OPIATES ↑↑ PARASYMP AROUSAL	BETRAYAL SELFSHNESS ABUSE	DISCONNECTION CHEATING DISINTEGRATION	DECEIVER ROBBER PERVERSE, UGLY	FRAGMENTATION ALIENATION DECAY

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It may be noticed that the first line under each SS in the second column refers to physical or bodily survival, while the next line refers to resources. The first two lines in the psychological and social boxes of each adaptive and maladaptive SS also reflect body and resources aspects respectively. The third line in bold print and underlined in each box combines both body and resource aspects.

Many lines in the table are in a way artificial, in that they separate concepts rather than objective functions. For instance the lines separating biological, psychological and social responses belie their unitary biopsychosocial functions. The double line between adaptive and maladaptive SSs should also not be seen to strictly separate the two, as SSs may alternate or straddle the two. In fact it should be remembered that the table is a part of a dynamic system (Figures 4-6).

Horizontal double lines separate opposing or complementary pairs of SSs, such as Fight and Flight, and Competition and Cooperation. There may be frequent prevarication or switching within SS pairs. Alternately, pairs of SSs may subserve complementary roles among interacting people. For instance, one may rescue while the other attaches to the rescuer, or one may attack (Fight) while the other flees (Flight). The first of each pair of SSs tends to be more active, the latter being relatively passive. However, SSs may be used very flexibly outside of pairs, in various combinations.

It may be noted that there are semantic ambiguities in the descriptions of SS components. For instance the word care may be used as protecting and shielding someone (Rescue), or loving someone (Cooperation). Perhaps our language is not yet honed to distinguish SSs. On the other hand, SSs may contribute to a "wholistic language" (Valent, 1999), in which SSs throughout the triaxial framework have innate words at intersecting points, which may or may not have specific words in ordinary language to describe them. This is akin to having potential notes which may or may not be sounded.

APPLICATIONS OF SURVIVAL STRATEGIES

Applications of SSs include recognition and naming of the wide variety of traumatic stress phenomena, and tracing and elucidating their origins and sense to specific SS responses at the time of traumatic events. Alternately, SS responses, manifestations, symptoms and illnesses may be traced both prospectively and retrospectively as they spread along the three dimensions of traumatic stress. But also, as a counterpoint, adaptive, life enhancing manifestations can also be located and traced in a similar manner.

Further, SSs can for the first time also help to categorize classes of such manifestations, such as adaptive and maladaptive emotions, physiological responses, traumas, moral judgments (such as guilts, angers, shames), moralities, meanings, values, and principles (chapter 16). For instance, vertical columns in Table 2 categorize adaptive and maladaptive biological, psychological

and social acute stress responses, and traumas, and judgments of worth. Finally, in trauma and fulfillment therapy (Valent, 1999), SSs form a base for diagnosis and treatment of traumatic stress effects.

In other words, SSs help to provide a rationale for stress and traumatic as well as for fulfillment responses, in a very wide field of life experience. This in fact is behind the term life-trauma dialectic.

Summary

SSs are discrete phylogenetic templates which have evolved as specific stress responses to aid survival. The eight suggested SSs are Rescuing, Attaching, Asserting, Adapting, Fighting, Fleeing, Competing and Cooperating. All act as specific biopsychosocial functional units and may be adaptive or maladaptive. They provide the framework for characterization and categorization of traumatic stress, as well as fulfillment phenomena. It is they which are relived and avoided in PTSD.

The next eight chapters examine each SS across the triaxial framework.

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