Mental Mobilization Processes in Critical Incident Stress Situations

Atle Dyregrov, Ph.D., Roger Solomon, Ph.D., and Carl Fredrik Bassøe, Ph.D.

ABSTRACT: In this article, the psychological emergency mobilization process that takes place in threat situations is postulated. Mental mobilization is the increased mental capability of the mind in critical situations to process incoming and stored information to enable adaptive survival responses.

The processes that are mobilized in the service of survival are enhanced sensory awareness, focused attention, rapid processing of incoming data, and use of previous experience, enhanced memory, altered time perception, and temporary deactivation of emotional reactions. From a clinical standpoint, it is important that the survival value of these processes is understood, as survivors can be helped to feel a sense of accomplishment and empowerment when they are taken through a critical situation in a detailed way and discover that they have been able to function well and survive by use of their stored "experience," rapid processing of information or other aspects of their mental mobilization [International Journal of Emergency Mental Health, 2000, 2(2), 73-81].

KEY WORDS: Critical events; adaptation; dissociation; management

Through evolution man has developed mechanisms of bodily arousal that are automatically activated when a threat is encountered. These mechanisms mobilize physical strength that augment fight or flight from the threat. Adrenaline flow and other chemical changes rapidly mobilize the body for action. There is a parallel activation of brain norepinephrine and the Corticotropin-Releasing Factor - Hypothalamic-Pituitary Adrenal (CRF-HPA) axis system that works in concert to effect a variety of behavioral and physiological responses that promote survival in the face of threat (Bremner, Davis, Southwick, Krystal, & Charney, 1993). A complex set of cellular and molecular processes are set in motion to rapidly mobilize the body for action.

Drawing on our clinical experience from dealing with people who have survived and dealt with various critical situations, we postulate that there is a similar system of mental mobilization that is activated in critical stress situations, enabling us to deal with danger in an optimal way. These adaptive cognitive mechanisms are believed to have evolved Atle Dyregrov, Ph.D., Center for Crisis Psychology, Bergen, Norway; Roger Solomon, Ph.D., Critical Incident Recovery Resources, Williamsville, NY; Carl Fredrik Bassøe, Ph.D., The PROMED Institute, Bergen, Norway. Address correspondence concerning this article to: Dr. Atle Dyregrov, Fabrikkgaten 5, 5059 Bergen, Norway

to adapt to our evolutionary environment. Our perspective draws on other people's theoretical papers; it is not based on hard, coherent empirical data, but presented for heuristic purposes to spur additional research.

The activation of the brain norepinephrine systems and the CRF-HPA axis also activate attentional and memory systems that are part of the mental mobilization systems. As Perry and Pollard (1998) state: "Although exquisitely complex, the core framework of the human brain is designed to sense and respond to the changing environment to promote survival" (p. 36). These researches also indicate that:

Sensing and perceiving threat must be paired with response to threat if the organism is to survive. At each level of the central nervous system, just as the afferent input is interpreted and matched against previous similar patterns of activation an efferent arm is initiated. Each level and area of the brain has some role in the efferent response to the threat. The brainstem regulates the autonomic and hypothalamic output, alters arousal, and tunes out distracting sensory information; the midbrain regulates elements of motor activity (e.g., startle response); the limbic system modulates emotional

reactivity and signaling (e.g., facial expression); and the cortex interprets the threat and develops a complex plan. Under ideal circumstances, these multiple responses are integrated and orchestrated to mobilize a host of actions that, hopefully, will be adaptive, reduce risk, and enhance survival. (p.39).

Unfortunately, much more is known about the psychological consequences of trauma than about the mental processes occurring during the situations that pose a threat to our own or our loved one's survival. In the following, such situations may alternatively be called traumatic or critical incidents or events believed to involve peak stress episodes. Mental mobilization processes are not only vital for survival, but also impact the emotional aftermath of the incident and have important implications for training and stress inoculation. Below we will outline some of the mechanisms involved and discuss them in light of dissociation and trauma.

Psychological Processes of Mental Mobilizations

Mental mobilization is the increased mental capability of the mind in critical situations to process incoming and stored information to enable adaptive survival responses. When an individual faces a critical or traumatic event, a number of mental processes are mobilized in the service of survival. Table 1 outlines important aspects of this mental mobilization.

Table 1: Mechanisms of Mental Mobilization

- * Enhanced sensory awareness
- * Focused attention
- * Rapid processing of incoming data
- * Enhanced memory
- * Altered time perception
- * Use of relevant past knowledge
- * Temporary deactivation of emotional reactions

Enhanced Sensory Awareness

Many individuals involved in stressful, traumatic situations report a sharpening of senses, such as more sensitivity and acuity in vision, hearing, tactile discrimination, and the olfactory system. Increased sensory awareness enhances one's ability to perceive danger. These responses are neurobiologic responses that protect the organism from impending danger (Southwick, Bremner, Krystal, & Charney, 1994). To illustrate, people who have experienced being home alone at night hearing a strange and unexpected sound fear facing an intruder. The person then becomes aware of every sound in the house, however small, in assessing the danger.

People in emergency situations report being able to see or hear visual details with more clarity than in normal circumstances (Solomon & Horn, 1986). This heightened perception of incoming sensory stimuli is important for survival, enabling the determination and assessment of danger.

Focused Attention

Following the sharpening of senses, there is a narrowing of attention to enable a better focus on the aspects of the situation deemed most important for survival. Victims of trauma often report an intense focused concentration on what is perceived as most threatening. Selective attention is beneficial in life-threatening situations. Cognitive psychologists see selective attention as a highly flexible, goal-based system consisting of facilitory and inhibitory processes that operate in concert to produce efficient thought and action (Brewin & Andrews, 1998). Police officers involved in line-of-duty shootings report tunneling in on those aspects of the situation that are most threatening to the exclusion of peripheral details (Solomon & Horn, 1986). "I will never forget those eyes" is a common statement from robbery or assault victims, and police officers involved in violent encounters. Weapons present in such situations are also commonly the center of attention. The eyes reflect the perpetrator's intention and give cues about their behavior, while the weapon naturally determines the threat and potential injury involved in the situation. Both elements are critical for survival.

Attention can be focused on one sensory channel to the exclusion of others. During a traumatic event with the intense focus on survival, loud sounds may not be heard. For example, it is quite common for police officers to report gunshots sounding like little "pops" or that gunshots were not heard at all. On the other hand, sound may be intensified

and gunshots may sound like cannons. It is as if the mind screens in and amplifies sounds deemed important for survival and screens out sounds that may disrupt attention and concentration.

Narrowed attention can lead to a memory loss for aspects of the situation that are outside of the focus of attention. Sometimes people are not aware of other events taking place around them because their attention is narrowly focused. As a result, in the courtroom situation, those who have experienced narrowing of attention may be looked upon as an unreliable witnesses. This discontinuity of experience may be distressful for the witness who does not understand that narrowing of attention is normal under peak stress conditions.

Rapid Processing of Incoming Data and Use of Previous Experience

Parallel with focused attention on the outside threat is a rapid processing and evaluation of incoming stimuli, along with the use of previous experience relevant to the incident. This is consistent with Le Doux's (1992) postulate that people can evaluate and start reacting to sensory information before making a conscious appraisal of what they are reacting to. In an emergency, this may enable faster, more efficient mobilization and implementation of survival strategies. Faster processing of information (including implicit and explicit memories) takes place enabling faster search, selection, and implementation of survival strategies. People report racing thoughts and the ability to think rapidly about a multitude of topics (Solomon, 1991). Many police officers involved in high risk encounters have described how their training came to fore automatically:

A police officer was surprised by a gunman who pointed a gun to his head and ordered him to give him his car keys. Immediately, the officer pictured his academy instructor telling him what tactic to use in this situation and then pictured himself using the tactic on the gunman. After distracting the gunman with his key, the officer used the tactic and successfully disarmed the gunman.

One of the facets of mental mobilization is the ability to think, plan faster, and make rapid decisions based on available information and previous experience. We propose this results from the brain's rapid processing of previously stored information (experience) that is used in combination with the incoming information from the environment. During moments of peak stress, skills, training, and survival patterns

residing in memory quickly become available without having to enter consciousness. The above example of the police officer using a tactic he had not thought about in years illustrates this example. A further example illustrates how the brain is able to search for relevant information in response to the situational demand to promote coping:

During the psychological debriefing following an emergency sea landing of a helicopter enroute from an oil field an hour and a half out in the Northern Sea, the passengers were asked if any of them had undergone helicopter evacuation training in water. Only one passenger answered affirmatively. Asked if the training was of any help he stated: "Well, the helicopter did not tilt, but it was a curious thing that happened during the two minutes it took from flying attitude until we landed on the sea: the whole ditching course passed in review, and I knew that if it tilted I would know how to survive."

Denholm (1995) gives a vivid description of how an 11-year-old girl was able to maintain control by accessing her previous learning, keeping calm, and focusing on survival while being attacked and seriously injured by a wild animal, indicating that such mechanisms operate at an early age. However, younger children often lack previous experience that can be used in critical situations.

Many people in emergency situations have described thinking through a multitude of strategies and outcomes in the flash of a second. For example, following car crashes people have described how, in the moments before the crash, different strategies for steering the car quickly and automatically came to mind. In addition to this, police officers finding themselves suddenly involved in threatening encounters have described how several courses of action are quickly chosen and implemented. Furthermore, it is not uncommon to hear reports of "my whole life passed in review." Stevenson and Cook (1995) reported that 27% of a sample of 78 subjects mentioned having had a life review during a near-death experience (NDE). The interpretations of such experiences vary from "seeking the safety of the timeless moment" to physiological conditions restricting mental functioning. We propose a different interpretation, that the life-review is part of an adaptive informationprocessing mechanism where the brain accesses previous experience and useful information to master the critical situation. For most people, these accessing mechanisms function outside of conscious awareness, but some become observers of the process. While cognitive processes in consciousness are believed to be in serial mode, limiting the number of other serial processes that can occur simultaneously, processing outside of consciousness can occur in parallel processes. Parallel processes are thought to have almost unlimited capacity and can handle huge amounts of data (Siegel, 1995). Based on the reports from people exposed to life-threatening situations, it seems reasonable to propose that in critical situations the brain processes incoming and stored material in the parallel mode to secure optimum handling of the situation, allowing for rapid intuitive decision making. Such rapid decision making is in line with what Klein and co-workers (Klein, Calderwood, & MacGregor, 1989; Zsambok & Klein, 1997) have proposed. Enhanced Memory

It is critical for survival that people can react quickly to survival-threatening stimuli. We propose that when human beings experience critical situations, memory is enhanced in order for us to quickly respond to similar threats in the future. Although much debated, new memory research suggests that such memory enhancement mechanisms are activated (van der Kolk & Fisler, 1995). We have previously called this "supermemory" (Dyregrov, 1992) to emphasize the intense, vivid memory following critical incidents. Increased release of norepinephrine in the hippocampus and amygdala with modulation of long-term potentiation, which is held to represent the neurochemical substrate of memories, can account for this enhanced memory (Bremner et al., 1993). Vivid memories from previous critical encounters can be quickly triggered, with consequent survival behaviors mobilized. The memories opt for rapid identification of new threats, as the brain does not like to be surprised. The next encounter with a similar threat is matched against the cues and associations stored in memory. Such "supermemories" often form the basis of intrusive recollections, nightmares, and flashbacks in the posttraumatic period, and become a major symptom group in Posttraumatic Stress Disorder (PTSD) if the traumatic experience is not appropriately integrated. If a person develops PTSD symptoms, to some degree, they become at risk for having their attention focused on personally salient, highly threatening stimuli in the environment (Litz et al., 1996). However, dissociative amnesia may result if the event overwhelms the capacity for handling the situation (Bryant & Harvey, 1997). Altered Time Perception

The rapid processing of information gives rise to the experience of "slow motion" or altered time sense. This is illustrated as follows.

As part of an evaluation study of so called free fall lifeboats used in the oil industry to evacuate oil platforms in the case of emergency, participants in a course to familiarize themselves with this emergency tool were interviewed about their experience. They had to make four falls with this boat from a height of 12.5 and 28 meters (two from each height). In less than three seconds, they accelerated from 0 to 100 km/h. When interviewed they gave very similar accounts of the experience of time: "They were the longest seconds of my life."

It was as if time stood still for many of them. The brain registered this critical situation automatically and by speeding up processing, the participants felt that they had much time to think while falling down. Terr (1983) also reported that trauma victims, both children and adults, mentally extended time. However, she also found that subjects exposed to prolonged trauma subjectively tried to shorten time. In a similar manner, police often report altered time sense during shooting situations where they experience drawing their weapon and responding in slow motion (Solomon & Horn, 1986).

A robber shot at a police officer. As the police officer dropped to the ground for cover, everything went into slow motion. He described the experience as "having all the time in world to draw my weapon, take aim, and fire."

From many accounts described by people that have been in life-death situations, we know that they feel they were given extra time to deal with the threat. As time is perceived to slow down, they are allowed more time to think and react. Noyes and Kletti (1977) reported that 72% of survivors of life-threatening danger experienced distorted reality and altered passage of time. Solomon and Horn (1986) found that 83% of police officers experienced time distortion in a shooting situation, with 67% experiencing slow motion and 15% fast motion. Klein, Calderwood, and MacGregor (1989) have outlined how rapid decision making, based on cues from the situation, is used in situations that would not allow for the more well-known decision making strategies outlined by Janis (1982). These findings are in accordance with the proposed processes of mental mobilization.

Unfortunately, following the event the altered time sense

can be interpreted in a manner that can make the survivor feel more vulnerable, "I reacted so slowly that I could have been killed" has been said by more than one survivor of police shootings where the slow motion was interpreted as slow reactions. People involved in critical situations need to be educated about the normalcy of such reactions and the survival value they have.

Temporary Deactivation of Emotional Reactions

An integral part of mental mobilization is the temporary deactivation of emotional reactions. It is important for the person in danger to focus all attention on the danger and expend mental energy on processing of incoming and stored information to enable rapid decision-making. If a person were filled with emotions of fear, anger, or sadness at moments of danger and threat, it would seriously hamper concentration, decision-making ability, and survival behavior. The brain seems to be equipped with mechanisms that block emotions for short or long periods of time in order to allow the information processing and survival behaviors to work without being emotionally overwhelmed. An extreme, but not uncommon form of detachment, is the out-of-body experiences in which the person involved in a critical incident reports watching themselves:

A police officer involved in a gun battle described watching himself in slow motion shoot the perpetrator. He described how he felt devoid of emotions, yet well able to function. Another police officer that was shot described watching himself fall to the ground. He reported little pain and an ability to focus on keeping calm and surviving the incident.

Commonly, people describe feeling detached and emotionally numb during and shortly after a critical incident. The changes in sensory capacity, the rapid information processing and accompanying experience of altered time sense, slow motion, and focused attention result in a different experience of reality than ordinary (Dyregrov, 1992). This can explain the feelings of unreality or dream or movie-like experience so many describe. People may be intrigued by the lack of reactions in themselves and may start questioning their capacity as human beings. From a crisis intervention viewpoint, it becomes important to inform people about the normalcy of such a reaction (Dyregrov, 1992). The shock reactions postpone the emotional reactions to allow the organism to handle the event as it unfolds, and thus also allow us to take in the emotional ramifications a little at a

time.

Relationship of Deactivation of Emotional Reactions and Dissociation

During the last decade researchers, particularly David Spiegel and colleagues (Spiegel & Cardena, 1991; Cardena & Spiegel, 1993; Freinkel, Koopman, & Spiegel, 1994; Koopman, Classen, Cardena, & Spiegel, 1995), have documented the relationship between dissociation and trauma. Dissociation has been described as "a structured separation of mental processes (e.g., thought, emotions, connotation, memory, and identity) that are ordinarily integrated: (1) a subjective sense of numbing, detachment, or absence of emotional responsiveness; (2) a reduction in awareness of one's surroundings (e.g., "being in a daze"); (3) derealization; (4) depersonalization; (5) dissociative amnesia, i.e., inability to recall an important aspect of the trauma" (Koopman et al. 1995, p.32).

Viewed in light of the previous examples, we see that most of what has been termed dissociative symptoms by Spiegel and colleagues can be seen as integral parts of the mental survival strategies listed above. Although the research group mentions the useful function that dissociative reactions serve "in helping trauma survivors to cope with temporarily overwhelming feelings concerning the event" (Koopman et al., 1995, p.39), the life-saving qualities of dissociative reactions as part of a total survival mechanism consisting of both physical and mental reactions are not adequately understood. In fact, several of these reactions are called symptoms and are seen as pathological even when they appear during a distressing event (Koopman et al., 1995, p.32). Koopman, Classen, and Spiegel (1996) noted that dissociation "in the lower range" helps people cope adaptively with the immediate situation and its aftermath. More severe dissociation during an event can interfere with functioning during a crisis (Koopman et al., 1996). Hence, the relationship between dissociation and adaptive coping may be curvilinear.

From a clinical standpoint it is very important that the survival value of these reactions are understood, as survivors can be helped to feel a sense of accomplishment and empowerment when they are taken through the critical situation step by step and discover that they have been able to function well and survive by use of their stored "experience" and rapid processing of information. The following example illustrates dissociation in the service of survival.

An officer was shot in the leg (shattering his femur) and the face at a traffic stop. He fell to the ground. Feeling numb and detached from the situation and experiencing tunnel vision, he focused in on the gunman. Finding his own gun in hand, the officer started firing. Though he knew he fired the gun, he had no recollection of how many shots he fired. After the suspect fell to the ground, the officer was able to get up, remove the suspect's weapon, handcuff him, and call for backup. He still felt detached, like "I was on automatic pilot just going through the motions," as he secured the situation. After backup officers arrived, the officer collapsed in great pain.

The above example illustrates how dissociation serves as a defense against experiencing overwhelming fear or helplessness, or even physical pain during and after a traumatic event. Physical sensations of pain were dissociated and detached from consciousness. He did not experience pain until the situation was over and help had arrived. *Stress-induced analgesia* protects organisms against feeling pain and is assumed to be caused by the release of endogenous opiods (van der Kolk, 1994). The detachment and numbness, a temporary blocking of emotions that protects a person from being emotionally overwhelmed may operate parallel to the blocking of pain. This officer's actions were also dissociated, as he was only aware of his keen focus on the gunman with no recollection of drawing his weapon or how many times he fired.

Dissociation, although interfering with a coherent recollection, protected the officer from being overwhelmed by fear and pain, enabling survival. Although dissociation has adaptive value, such phenomena may be confusing, and contribute further to the fragmentation and disorganization of the memory of the incident (Foa & Riggs, 1995). Many officers question their sanity after out-of-body experiences. Officers need to know such phenomena are not uncommon and play an important role in survival.

Spiegel and colleagues (i.e., Spiegel, Koopman, & Classen, 1994) have shown that the dissociative mechanisms for some people continue to function after the event possibly preventing an integration of feelings temporarily put on hold and leading to an increased risk of PTSD. The cost of life-saving mental mobilization can be the delay of necessary working through and putting the event into perspective (Spiegel et al. 1994). It is also speculated that the effectiveness

of dissociative reactions may prevent people from seeking appropriate help in coping with the traumatic experience (Koopman et al., 1995). Other studies also indicate that dissociation at the time of a traumatic event may be a predictor of subsequent severity and chronicity of PTSD (Marmar, Weiss, Metzler, Ronfeldt, & Foreman, 1996; Foa & Riggs, 1995). A survival perspective on reactions in critical situations may be broadened to some of the posttraumatic aftereffects as well. Carlson and Rosser-Hogan (1994) suggested that hypervigilance and the ability to sleep might be behaviors aimed at survival, ensuring that the individual is always prepared to face a threat. Guilt feelings may reflect our ability to cognitively view all our decisions and activities critically to learn from our faults and repeat our successes.

Though initial dissociation is associated with subsequent PTSD, research has not clearly defined at what time the dissociative reactions occurred. (Bryant & Harvey, 1997). As transient dissociative responses are common it may be that it is not these responses taking part as the event evolves, but rather dissociative reactions lasting over the first days or weeks that predict later problems. Bryant and Harvey (1997) states that in terms of a cognitive model of PTSD, dissociative symptoms that are transient need not necessarily impede emotional processing of a traumatic experience. They state: "To differentiate normal and pathological reactions, there is a need to delineate the degrees to which dissociative symptoms that occur at the time of the trauma and those that occur in the days following the trauma predict subsequent PTSD" (p. 761-762).

Further research needs to investigate what aspects and what degree of the dissociative experiences may be related to a negative outcome or dysfunction over time, what characterizes individuals who may have highly functional survival mechanisms at the time of the event but fail to build a bridge to the emotions that are put on hold, and what effective routines should be put in place to help them make that connection and more efficiently integrate the experience. *Appropriate Responses*

Moments of peak stress can lead to a strong emotional state that fuels the response to danger (Solomon, 1991). During moments of peak stress, a person may perceive the external danger but be internally focused on one's vulnerability. Shock, startle, disbelief, feelings of weakness, and lack of control often accompany the moment of vulnerability awareness. If one stays focused on his or her vulnerability, panic may ensue. However, as a person rapidly

processes the incoming and stored information, he or she may quickly be able to refocus on the danger in terms of the ability to respond. Especially among trained personnel, the mental state accompanying the response is described as focused, strong, controlled, and clear (Solomon, 1991). In other words, fear, when one is focused on one's ability to respond, leads to controlled strength and clarity of mind. When people face situations that they are well trained for, their rehearsed tactics (reflexive actions) may be stored in nondeclarative memory, enabling nonconscious implementation. Even without rehearsed tactics, the brain can use stored information (experience) for rapid decision making (intuitive decisions).

This view of the mental processes in crisis is in line with research that has shown people to react in an orderly and constructive manner in dangerous situations, not with panic or other maladaptive behavior (Quarantelli, 1954). Indeed, many trained personnel (e.g., police, fire, emergency medical, military, etc.) have described how quickly and automatically their trained responses and tactics came to them (Klein, 1989).

However, a minority of people fails to respond adequately in crisis and disaster situations, displaying either over- or under-reactions. This can happen if the mental apparatus is overburdened with intense stimulation or excessive information from the environment, when there is no information stored in the brain that can be used for deciding how to handle the situation, or when the mechanism of emotional blockage is not functioning. Then the potential for maladaptive reactions is great. Without any previous experience, training, or knowledge that can be used in handling the situation, the risk of breakdown in response systems are increased. Given this situation, the person may focus more on internal reactions to the situation (fear, feeling helpless or overwhelmed) than on dealing with the external threat.

One integrative dimension is to look at the interaction of mental mobilization and dissociation on an active-passive continuum. When a person actively approaches (or avoids) a threatening situation, dissociation perhaps acts in the service of the ego to enhance mental mobilization and survival responses. Dissociation goes hand in hand with focused strength and increased perceptual and processing abilities, etc., to enhance response to the threat. PTSD does not necessarily result from such active participation in the event. However, when a person is overwhelmed with no

perceived way to respond (the passive end of the continuum), dissociation serves to detach the person from the experience. In such circumstances dissociation enables the person to avoid experiencing overwhelming emotions at a conscious level, but PTSD is a likely consequence. Individual differences in handling of information, i.e., sensitizers versus blunters of information, differences in other aspects of personality, in experience or training, and in perception and appraisal regarding critical situations, etc., will probably be very important in determining appropriate versus inadequate handling of a critical situation, as well as who develops PTSD. The response pattern in a situation will also depend on aspects related to the nature, duration, and severity of the threat and history of exposure to similar threats.

Conclusion and Possible Future Clinical Implications

It is mandatory for survival that mankind has been able to develop mechanisms to rapidly recognize, handle, and memorize threat. The mechanisms that have been described help explain reactions observed both among trained personnel responding to critical situations and the survivors of the same situations. In addition we believe that these mechanisms are activated in situations that do not pose a direct life-threat, but all the same represents a traumatic or critical event for the persons involved (i.e., sudden death of a loved one). Following the sudden death of a loved one, the bereaved often describe reactions of unreality, as if in a dream, etc. (Raphael, 1984). Overwhelming emotional reactions can also be triggered. However, for the bereaved there are rituals (e.g., the wake, funeral, other cultural traditions) that help make the unreal real and facilitate integration. Following other types of life-threatening situations, rituals put in place during crisis intervention (e.g., psychological debriefing) may facilitate the integration of thoughts, sensory impressions, and emotions following the event.

Although research is needed to understand the interrelationship between the different processes contributing to mental mobilization, and other factors contributing to the actual response to a critical situation (such as situational factors, social aspects of the situation, personality, etc.), it is possible to outline or speculate on some clinical or practical consequences of the mechanisms that have been described. As stated in the introduction, however, the proposed processes are not based on hard, empirical data, and this should be kept in mind when reading

our suggestions for clinical work.

During crisis intervention more emphasis can be placed on having "survivors" describe these aspects of their experience to reinforce a sense of achievement and coping and a belief in their own accomplishments in the situation. Although actively probed for, aspects of mental mobilization may easily be overlooked or "missed" with the survivor only focusing on the most negative moments. It can be therapeutic to provide more information about mental mobilization processes to help survivors focus on how these mechanisms operated during an incident. This may help them to revise their existing frame of reference or develop a new one that enables them to interpret, understand, and accept their own reactions in a way that increases self-efficacy. In addition, information about these mechanisms may increase understanding among social network members and others (police, investigation committees, judicial system, etc.), as they can often misinterpret survivors' account of what happened. An example would be the survivor witness who focused all her attention on the eyes or the weapon of the perpetrator and can only give a limited description of other aspects of his appearance.

For emergency personnel, it is important to ensure that Critical Incident Stress Management procedures, including psychological debriefing (CISD, Mitchell, 1983; Dyregrov, 1989), are implemented when personnel are ready, allowing some time for the temporary deactivation of emotional reactions to lift on its own. However, having a Critical Incident Stress Management system that prevents such "dissociation" from continuing is crucial to prevent long-term problems. During CISD it is important to incorporate a thorough review of the thought and decision processes that were part of the helping efforts. Providing written and verbal information about the processes of mental mobilization may prevent misunderstandings and misinterpretations. These debriefings need to be conducted by trained personnel to secure good leadership and reduce the chance of negative results (cf. recent discussions of the beneficial value of debriefing, i.e., Bisson, Jenkins, Alexander, & Bannister, 1997; Dyregrov, 1998; Mitchell & Hopkins, 1998).

Survivors and helpers alike struggle to understand the past, the present, and the future. Often the present is filled with memories and thoughts about the past. While moving into the future, the present is lost trying to make sense of the past. Critical incidents and the series of critical moments that make up such situations are often at the core of the problems that survivors are struggling to make sense of. It is our hope that the mechanisms we have described and termed mental mobilization can be a helpful perspective into making sense of their experience and reestablishing a sense of control.

References

Bisson, J.I., Jenkins, P.L., Alexander, J., & Bannister, C. (1997). Randomized controlled trial of psychological debriefing for victims of acute burn trauma. *British Journal of Psychiatry*, *171*, 78-81.

Bremner, J.D., Davis, M., Southwick, S.M., Krystal, J.H., & Charney, D.S. (1993). Neurobiology of Posttraumatic Stress Disorder. In J.M. Oldham, M.B. Riba, & A.Tasman (Eds.) *Review of Psychiatry, volume 12*. Washington, D.C.: American Psychiatric Press.

Brewin, C.R. & Andrews, B. (1998). Recovered memories of trauma: Phenomenology and cognitive mechanisms. *Clinical Psychology Review, 18*, 949–970.

Bryant, R.A. & Harvey, A.G. (1997). Acute stress disorder: A critical review of diagnostic issues. *Clinical Psychology Review*, 17, 757-773.

Carlson, E.B. & Rosser-Hogan, R. (1994). Cross-cultural response to trauma: A study of traumatic experiences and

posttraumatic symptoms in Cambodian refugees. *Journal of Traumatic Stress*, 7, 43-58.

Cardena, E. & Spiegel, D. (1993). Dissociative reactions to the San Fransisco Bay Area Earthquake of 1989. American Journal of Psychiatry, 150, 474-478.

Denholm, C.J. (1995). Survival from a wild animal attack: A case study analysis of adolescent coping. *Maternal-Child Nursing Journal*, *23*(1), 26-34.

Dyregrov, A. (1989). Caring for helpers in disaster situations: Psychological debriefing. *Disaster Management*, 2, 25-30.

Dyregrov, A. (1992). *Katastrofpsykologi*. Lund: Studentlitteratur.

Dyregrov, A. (1998). Psychological debriefing – An effective method? *Traumatology*, 4(2), Article 1. http://www.fsu.edu/^trauma/.

Foa, E.B. & Riggs, D.S. (1995). Posttraumatic Stress

Disorder following assault: Theoretical considerations and empirical findings. *Current Directions in Psychological Science*, *4*, 61-65.

Freinkel, A., Koopman, C., & Spiegel, D. (1994). Dissociative symptoms in media eyewitnesses of an execution. *American Journal of Psychiatry*, 151, 1335-1339.

Janis, I. (1982). *Groupthink*. Boston: Hougton Mifflin Company.

Klein, G.A. (1989). Strategies of decision making. *Military Review, 69* (May), 56 – 64.

Klein, G.A., Calderwood, R., & MacGregor, D. (1989). Critical decision method for eliciting knowledge. *IEEE Transactions on Systems, Man and Cybernetics*, 19, 462-472.

Koopman, C., Classen, C., Cardena, E., & Spiegel, D. (1995). When disaster strikes, acute stress disorder may follow. *Journal of Traumatic Stress*, 8, 29-46.

Koopman, C., Classen, C., & Spiegel, D. (1996). Dissociative responses in the immediate aftermath of the Oakland/Berkeley firestorm. *Journal of Traumatic Stress*, *9*, 521-540.

LeDoux, J.E. (1992). Emotion as memory: Anatomical systems underlying indelible neutral traces. In A. Christianson (Ed.). *Handbook of Emotion and Memory*, 269-288. Hillsdale, NJ: Erlbaum.

Litz, B.T., Weathers, F.W., Monaco, V., Herman, D.S., Wulfsohn, M., Marx, B., & Keane, T.M. (1996). Attention, arousal, and memory in Posttraumatic Stress Disorder. *Journal of Traumatic Stress*, *9*, 497-519.

Marmar, C.R., Weiss, D.S., Metzler, T.J., Ronfeldt, H.M., & Foreman, C. (1996). Stress responses of emergency services personnel to the Loma Prieta earthquake interstate 880 freeway collapse and control traumatic incidents. *Journal of Traumatic Stress*, *9*, 63-85.

Mitchell, J.T. (1983). When disaster strikes.... The Critical Incident Stress Debriefing. *Journal of Emergency Medical Services*, 8, 36-39.

Mitchell, J.T. & Hopkins, J. (1998). Critical Incident Stress Management: A new era in crisis intervention. *Traumatic Stress Points*, *12*, 6/7-10/11.

Noyes, R. & Kletti, R. (1977). Depersonalization in response to life-threatening danger. *Comprehensive Psychiatry*, 18, 375-384.

Perry, B.D. & Pollard, R. (1998). Homeostasis, stress,

trauma, and adaptation. *Child and Adolescent Psychiatric Clinics of North America*, 7, 33-51.

Quarantelli, E.L. (1954). The nature and conditions of panic. *The American Journal of Sociology, 60*, 267-275.

Raphael, B. (1984). *The anatomy of bereavement. A handbook for the caring professions*. London: Unwin Hyman

Siegel, D.J. (1995). Memory, trauma, and psychotherapy. *Journal of Psychotherapy Practice and Research*, 4, 93-122.

Solomon, R.M. (1991). The dynamics of fear in critical incidents: Implications for training and treatment. In J.T. Reese, J.M. Horn, & C. Dunning (Eds.). *Critical Incidents In Policing, Revised, 327-358*. Washington, DC: US Government Printing Office.

Solomon, R.M. & Horn, J.M. (1986). Post-shooting traumatic reactions: A pilot study. In J. Reese & H. Goldstein (Eds.) *Psychological Services In Law Enforcement* (pp. 383-393). Washington, DC: United States Government Printing Office.

Southwick, S.M., Bremner, D., Krystal, J.H., & Charney, D.S. (1994). Psychobiologic research in Post-Traumatic Stress Disorder. *Psychiatric Clinics of North America*, *17*, 251–264.

Spiegel, D. & Cardena, E. (1991). Disintegrated experience: The dissociative disorders revisited. *Journal of Abnormal Psychology*, 100, 366-378.

Spiegel, D., Koopman, C., & Classen, C., (1994). Acute stress disorder and dissociation. *Australian Journal of Clinical and Experimental Hypnosis*, 22, 11-23.

Stevenson, I. & Cook, E.W. (1995). Involuntary memories during severe physical illness or injury. *Journal of Nervous and Mental Disease*, 183, 452-458.

Terr, L.C. (1983). Time sense following psychic trauma: A clinical study of ten adults and twenty children. *American Journal of Orthopsychiatry*, *53*, 244-261.

van der Kolk, B.A. (1994). The body keeps the score: Memory and the evolving psychobiology of posttraumatic stress. *Harvard Review of Psychiatry*, *1*, 253-265.

van der Kolk, B.A. & Fisler, R. (1995). Dissociation and the fragmentary nature of traumatic memories: Overview and exploratory study. *Journal of Traumatic Stress*, 8,(4), 505-525.

Zsambok, C.E. & Klein, G. (1997). *Naturalistic decision making*. Hillsdale, NJ: Erlbaum.

International Critical Incident Stress Foundation (ICISF)

Providing Essential Training and Consultation in Crisis Intervention, Disaster Response, and Emergency Mental Health

- Comprehensive Critical Incident Stress Management (CISM)
- · Disaster Management
- · Emergency Services Stress and Trauma
- Violence Management in the Workplace
- · Crisis Intervention with Children



- Critical Incident Stress Debriefing (CISD)
- Psychotraumatology Update for Clinicians
- Violence Management in Schools and Communities
- · Suicide Prevention
- Crisis Intervention with Families

Contact the ICISF office for details and recurrent training schedules Telephone: 410-750-9600 • Fax: 410-750-9601

International Critical Incident Stress Foundation, Inc. 2000 Conference Calendar

(Calendar Subject to Change)

April 27 - 30, 2000 Kansas City, Missouri Co-Sponsor: Blue Springs Police Dept. PJ Petrillo (816) 228-0178	May 18 - 21, 2000 New York, New York Co-Sponsors: Staten Island CISM Team & Brooklyn CISM Team	June 8 - 11, 2000 Las Vegas, Nevada Co-Sponsor: So. NV CISM Network Brenda Donoho (702) 383-2888
June 22 - 25, 2000 Mason City, Dowa Co-Sponsor: Mercy Medical Center CISM Iowa Network Pat Wilson (515) 422-6474	July 13 - 16, 2000 Seattle ,W ashington Co-Sponsor: Washington CISM Network Dan Clark (360) 586-8492	July 27 - 30, 2000 Tupelo, Mississippi North Mississippi CISM Team Ron Richardson (662)841-3439
August 3 - 6, 2000 Columbia, Maryland Sponsor: ICISF, Irc. (410) 750-9600 www.icisf.org	September 7 - 10, 2000 Cleveland, Ohio September 21 - 24, 2000 Austin, Texas	October 5 – 8, 2000 W oroester, Massachusetts
October 26 - 29, 2000 Toronto, Ontario CANADA CCISF	November 2 - 5, 2000 Albuquerque, NM New Mexico Crisis Response Network Deb Boehme (505)476-7785	Nov.30 - Dec.3, 2000 San Diego, CA San Diego State University College of Extended Studies (619)594-6255

Visit our website for more details: www.icisf.org, or call ICISF at (410) 750-9600

ICISF's 6th World Congress on Stress, Trauma and Coping in the Emergency Services Professions Baltimore, Maryland April 18 - 22, 2001

> MID-AMERICA 2000 Southwest Ohio CISM Conference Cincinnati, Ohio June 12 - 18, 2000

General Information: 513-563-2172; fax 513-563-2132 www.queencity.com/swocism or email: team@pol.com

Stress, Trauma, and Coping in Emergency Services and Allied Professions
Melbourne, Australia August 9 - 13, 2000
CISMFA Contact Details: www.cismfa.org.au or phone 03 9347 9313 or fax 03 9347 9313