Chapter 2
Exploring the Trauma Membrane Concept

Erin Martz and Jacob Lindy

Abstract As part of the healing process in the aftermath of catastrophic stress, the *trauma membrane* forms as a temporary psychosocial structure to promote adaptation and healing. The trauma membrane acts as an intrapsychic and interpersonal mediator, interfacing between the person and the traumatic memories and everyday reminders of the traumatic event from the external world. Therapists work at the boundary of this psychological buffer zone. The multidimensional concept of a trauma membrane reflects intrapsychic, interpersonal, and communal processes that protect individuals and communities, such that a survivor network or individual survivor will invite or block access to mental-health intervention. The intrapsychic mechanism protects traumatized individuals from being subsequently overwhelmed by intrusive memories by cordoning off those memories until they can be handled by the individual's adaptive psychic processes.

This chapter will explore the definition and history of the trauma membrane concept, the similarities and differences between the stimulus barrier and trauma membrane, its value as a metaphor, and how the recovery environment can facilitate its formation in the aftermath of a trauma. As a flexible analogy, the multi-level trauma membrane can help researchers and clinicians explain trauma-related processes and their clinical applications.

Definition

The *trauma membrane* is a temporary psychosocial structure, a buffer zone or covering that protects traumatized people as part of the healing process in the aftermath of catastrophic stress. This term reflects intrapsychic, interpersonal, and communal processes that protect individuals and communities, such that a survivor network or individual survivor may invite or block access to mental-health intervention. The trauma membrane phrase calls attention to a potential healing space – both social

E. Martz (✉)
Rehability, Portland, OR, USA
e-mail: martzerin@gmail.com

and psychological – that permits naturally occurring healing processes over time. Yet, if these processes are not functioning over time (e.g., individuals are unable to process the traumatic event), the trauma membrane, like the surface of any wound that is not properly attended to, may complicate recovery (e.g., the wound festers and becomes infected). The trauma membrane conveys the idea of healing processes within this space or buffer zone and of governing principles with structures with which it interfaces. It follows a natural course and has long-term consequences for survivors and their communities.

Domains of Application

In this book, the concept of trauma membrane will be used to refer to three levels: the community, the interpersonal, and the intrapsychic. War and social conflicts (in addition to man-made disasters, which will not be covered in this book) are traumatic to entire communities, leaving them torn, displaced, dependent, and dysfunctional. On the interpersonal level, wars and armed conflicts create animosity between groups or individuals as a consequence of personal loss or injury, witnessing or experiencing interpersonal horrors, and the stress of living with an existential threat to life.

On an individual or intrapsychic level, an individually experienced traumatic event can be experienced as a sharp, sudden, deep wound to the psyche, leaving a tear in the tissue of the holistic self. On all three levels, trauma disrupts ordinary defensive patterns and systems, leaving only emergency ones; if these remain after their initial use, they are often non-adaptive (e.g., dissociation long after the traumatic events end). After major psychological upheavals, the psychic continuity of the self over time can be severed. Thus, trauma, to both the community and to the self, requires time and the presence of therapeutic elements for repair.

The concept of trauma membrane will be applied in this book to a wide variety of post-conflict situations with implications both for traumatized communities and for individuals. As applied in these broad contexts, the term suggests that individuals and communities can re-invest themselves with new, healthy energy to repair the wounds of trauma. The medium of a healthy trauma membrane offers hope for healing and thus is a way to facilitate recovery after a major traumatic event disrupts individuals and communities. We will first review the context in which the phrase itself originated, in order to better understand the concept.

The Concept of the Trauma Membrane

The concept of a traumatic membrane was first used to depict an external, psychosocial protection barrier that individuals (e.g., family, friends, or even mental-health professionals) provided to traumatized individuals (Lindy, Grace, & Green, 1981; Lindy, 1985). Individuals, such as family members or other individuals who experienced the same trauma (e.g., a survivor network), formed an interpersonal

trauma membrane around survivors of trauma. Thus, the trauma membrane was first viewed as a post-trauma buffer zone in the environment, which shielded an individual from unnecessary exposure to further psychological stress.

The formation of a trauma membrane can be understood as "multi-cellular," in that it forms around groups of people, as well as around individual survivors (Lindy, 1985). As such, the trauma membrane might be open or closed to professionals attempting to gain access to traumatized individuals; this access depended on specific interpersonal and community dynamics (Lindy, Grace, & Green, 1981). The trauma membrane can be considered as interfacing closely with the recovery environment – the latter includes factors related to the "extent of devastation, disruption of social networks, and cultural factors" (Lindy, 1985, p. 154) and the cause of the disaster (i.e., natural vs. man-made).

In addition to representing an interpersonal protective barrier, the trauma membrane can also be viewed as an intrapsychic phenomenon, in which an individual's psyche forms a membrane around traumatic memories, in order to facilitate the healing from trauma. This concept and its distinction from the "stimulus barrier" (Freud, 1920/1955) will be explored later in this chapter.

The above paragraphs describe the concept of a trauma membrane from both intrapsychic and interpersonal perspectives. This suggests that both personal (i.e., intrapsychic) and environmental (i.e., interpersonal and social) factors influence the traumatic response. Other traumatic stress researchers have emphasized the importance of taking a multidimensional viewpoint when examining trauma and its effects. For example, Harvey (1996) proposed a person × event × environment model for understanding trauma. Terr (1991) suggested there were several types of traumatic stress responses, based upon the type of trauma: (1) traumatic responses after unanticipated, one-time events (e.g., hurricanes, rapes); (2) traumatic reactions after long-term, repeated, traumatic exposure (e.g., childhood sexual abuse, political torture); and (3) trauma responses to "crossover" traumas, which she defined as sudden events that cause a disability. This book will focus on the second and third types of trauma – those involving repeated, long-term exposure (e.g., war zones) and those that cause permanent consequences (e.g., disability).

In summary, the ripple effects of war and armed conflicts can cause trauma on many levels (e.g., injury was incurred, a family member was harmed, a house was destroyed, and one's employment setting was ruined after a traumatic event). Hence, a multidimensional approach to the trauma membrane concept is needed, in view of the fact that an event may contain multi-leveled aspects that are traumatizing.

Unpacking a Metaphor

Like a newly developing outer-surface of an injured cell, the trauma membrane forms to guard the inner reparative processes of the organism to protect it from noxious stimuli. Work at the surface of the membrane keeps out any foreign matter, which would further disturb the injured cell and selectively permits entrance to those agents which will facilitate healing (Lindy, 1985, p. 155).

The "trauma membrane" as a term is, of course, a metaphor. Like any metaphor, it has entailments or overlapping, multi-layered, implicit meanings (Lakoff & Johnson, 1980). Trauma implies wound. In order for a wound to have a membrane form on its surface, it implies a natural event like coagulation forming a scab on a cut. Thus, the membrane covers a wound and forms its new outer edge. As a living biological membrane, the term also calls to mind the microscopic activity that occurs between a membrane and its outside surface. These meanings are consistent with the function of a semi-permeable membrane, which permits entrance of certain items and extrudes others, as well as the biological activity at the surface that permits and governs this activity. Each of these layers of meaning deserves some elaboration.

The trauma membrane, as a biological metaphor, describes a natural covering surface over the tear. As such, it arises spontaneously. It serves dual functions: as protective barrier keeping noxious substances away from contaminating or exacerbating the wound; and as a conserving edge, covering that keeps healing materials inside. The membrane is thin, hardly visible, and, at least initially, easily broken. A membrane as a biological metaphor implies organic, natural functions that mark the body's edge, not artificial constructs inserted from the outside. When intact and well-functioning, the membrane serves as a biological pump, carrying out a transport function in which noxious materials are expelled and healing elements introduced.

As a psychological metaphor, the trauma membrane concept at an intrapsychic level reflects that individuals may disavow, dissociate, or split off the traumatic memories until they are ready to face their traumatic memories. In the process of integrating the traumatic memories, individuals may respond to present-day, neutral events with affect that does not match the stimuli. In such circumstances, the neutral events "function as if they were enzymes with a special molecular configuration. Such configurations tend to draw to them and fix traumatic memories and precipitate their being 'metabolized'" (Lindy, 1985, p. 154).

The trauma membrane metaphor allows us to imagine first a single layer of cells covering the injury, but expanding over time to include multiple layers – including the social, the interpersonal, and the intrapsychic (Lindy, 1985). Like the covering on a physical wound at a cellular level, the psychological trauma membrane permits healing from the inside outward, such that psychological healing helps to prevent long-term, damaging ramifications for individuals. This psychological metaphor parallels the physical healing that occurs when a single layer becomes multiple layers of granulation tissue (e.g., coping abilities are discovered and strengthened); by this process, there is a decrease in the size of the wound (i.e., psychologically speaking) and ultimately, the wound (e.g., traumatic memory) is covered with a minimum of scar tissue (e.g., less rigid defense mechanisms).

A Brief History of the Concept

Between 1970 and 1980, changes occurred in the way mental-health professionals came to view trauma, its aftermath, and the roles they might play with individuals and communities. There was no diagnostic entity legitimizing the emotional effects

arising specifically from trauma exposure until 1980, when posttraumatic stress disorder (PTSD) was added to the *Diagnostic and Statistical Manual* (DSM; American Psychiatric Association [APA], 1980). Peterson, Prout, and Schwarz (1991, p. 3) observed that "there was not a single mention of any type of trauma-related disorder, not even traumatic neurosis or combat neurosis in the DSM-I (APA, 1952) or DSM-II (APA, 1968)." Certainly, there was no place in professional lexicon for the concept that posttraumatic states can create a chronic mental-health problem. There were a few innovative programs foreshadowing the future of the traumatic stress field's programs, which found ways for mental-health professionals to act as consultants to the volunteers, who were engaged in aftermath counseling (Hartsough, Zarle, & Ottinger, 1976). By the end of the 1980s, the assumptions about the reasonableness of a laissez-faire attitude about responses to traumatic events in communities on the part of mental-health professionals – a professional posture, which could be viewed as institutionalized trauma avoidance (Wilson & Lindy, 1994) – were changing.

While working with survivors of several disasters during the 1970s, Lindy and his colleagues at the University of Cincinnati Traumatic Stress Study Center began using the phrase "trauma membrane," first in terms of its environmentally oriented reference, namely to describe the newly forming surface over a traumatized community. As this group of clinicians and researchers assisted multiple traumatized communities, they became increasingly aware of the different ways that survivors subjectively viewed the investigators and clinicians. That is, in some post-disaster environments, mental-health assistance and research studies were welcomed, while in others, investigators and clinicians were overtly rejected. Hence, the trauma membrane term was created to explain some of the challenges faced in attempting to reach and help survivors with severe psychological reactions after a disaster (Lindy, 1985).

The reasons for these different reactions were not immediately self-evident. For example, at Buffalo Creek, investigators and clinicians from the Cincinnati group expected to be viewed as outsiders, as they were hardly mountaineers from West Virginia, yet they came to be accepted within the trauma membrane. The people of Buffalo Creek hollow in West Virginia had been overwhelmed when a slag dam burst at the head of the valley, dumping millions of gallons of black water on the homes below it (Erikson, 1976). As the wall of water careened from one side of the valley to the other, homes were randomly destroyed and spared. Hundreds were killed and thousands displaced; the community itself destroyed. The inhabitants were outraged when the governor pronounced the disaster as an "act of God"; not so, the victims argued, the disaster was the direct consequence of neglect by the coal companies: It was "an act of man" (Lindy & Titchener, 1983).

Two years later the owner of the local gas station began advocating for the trauma survivors. He engaged a Washington law firm who, in turn, asked 40 mental-health professionals from the University of Cincinnati to evaluate 200 survivors for the plaintiffs. At the same time, psychiatric evaluations for the defense were carried out on the inhabitants of the valley, who objected to the evaluations as being impersonal and blaming (Stern, 1976). Attorneys, together with local leaders (e.g., the gas station owner at Buffalo Creek and a leader of an informal survivor network),

had consolidated a well-functioning trauma membrane in the 2 years after the flood. The investigators and clinicians from the University of Cincinnati Traumatic Stress Study Center, as outsiders, expected a guarded reception at best, certainly suspicion or even rejection at worst. But that was not the case in Buffalo Creek. In trailer after trailer, survivors welcomed them almost like family. They showed the investigators and clinicians the fragments that remained of lost family members and the personal possessions that had defined their former life and told their stories freely to the investigators and clinicians. The investigators and clinicians observed a healing process or space that bound similarly traumatized individuals and families and felt fortunate that they had been invited beneath its surface.

Three years later, the same clinician/researcher team responded to survivors of the Beverly Hills Supper Club fire in Southgate, Kentucky, only minutes from downtown Cincinnati. Like Buffalo Creek, hundreds were killed (Titchener, Lindy, Grace, & Green, 1981). This time, they were expecting that their mental-health outreach efforts to survivors and their families would be welcomed – because they thought of themselves as part of the same community that experienced the trauma. Yet, while some small family units welcomed the efforts of professional investigators and clinicians, they discovered to their surprise that others were overtly rejecting. A gospel group was initially quite open to researchers meeting with them, but soon feared that the efforts to explore emotional reactions would lead to social hysteria, and hence, pushed the researchers outside the trauma membrane.

Another instance of being outside the trauma membrane related to the Kentucky fire was evident when the University of Cincinnati Traumatic Stress Study Center's telephone outreach team often received responses such as, "I think about it 24 hours a day; how can I afford to talk with you about it?" One way of interpreting this was that these survivors refused contact because they feared that even well-intentioned reminders of the trauma would lead to being out of control. Or, in clinical terms, contact from the team, for either therapeutic or research purposes, might activate traumatic memory leading to further regression. Survivors of trauma are often "eager for help yet frightened by the effect of any remembrance of the event" and that "from the survivor's vantage point, professionals interested in treating or studying posttraumatic stress threaten to disturb a fragile equilibrium. Fear of affect overload makes the survivor wary..." (Lindy, 1985, p. 154). As a result, the door of access that leads into the survivors' trauma membrane was shut, despite the clinicians and researchers reaching out to the survivors.

Even members of the faculty at University of Cincinnati, who had worked with next of kin at the temporary morgue and retained close contact with survivors after the fire, protected their own "families" from further injury by discouraging them from participating in psychological research activities, convinced that it would be intrusive and disruptive. Here, the researchers' own colleagues, who were working as it were on the edge of the trauma membrane, were part of a trauma membrane that kept others away, barring access to traumatized individuals. The University of Cincinnati Traumatic Stress Study Center researchers realized that having been invited to operate inside the trauma membrane at Buffalo Creek was a major asset and that operating outside that membrane, as in many of the sub-populations at the

fire in their local community, was a significant problem in outreach, which needed to be overcome in order to be able to conduct research work.

What were some of the differences in the two disasters that might contribute to the understanding of different reactions at the trauma membrane? First, the mental-health intervention at Buffalo Creek occurred 2 years after the catastrophe, whereas the response to survivors at Beverly Hills fire was immediate. Did it take time for a more effective and permeable trauma membrane to form at Buffalo Creek, one in which spontaneously identified leaders could act at its surface? Second, survivors at Buffalo Creek were surrounded by a community of fellowship in the disaster. There was no one immune from its effect. In contrast, survivors and their kin at Beverly Hills returned to a large city, where most had little or no connection with the disaster on a personal level. Had this distinction in the quality of fellowship of the survivors created a different type of trauma membrane? Third, the survivors at Buffalo Creek saw mental-health professionals as advocates for their cause in a lawsuit; in contrast, survivors at Beverly Hills were suspicious of the research motives of mental-health professionals and felt the need to protect the injured from further harm that might be created by accessing unwanted traumatic memories. A fourth possibility might be found in differences in cultural norms for dealing with adversity in the two settings.

The trauma membrane, on a community level, seemed to be a generalized phenomenon that applied to *all* the traumatized populations with which the Cincinnati group worked, e.g., the Buffalo Creek dam break, Xenia tornado, Beverly Hills Supper Club fire, and American veterans of the Vietnam War. Two terms describing disasters may help in understanding the concept of trauma membrane. C*entrifugal* disasters (i.e., localized destruction, such as a fire in a nightclub or a bus crash, where people have convened temporarily at the site of disaster but would eventually return home to diverse areas) seemed to contribute to a weaker and less effective trauma membrane. In contrast, c*entripetal* disasters (i.e., more extensive destruction in larger areas, such as tornados and hurricanes, where survivors must recover in a damaged community, but one that contains neighbors who are fellow survivors, and thus who understand the trauma) tended to form a stronger and more effective trauma membrane (Lindy, Grace, & Green, 1981).

In centrifugal disasters, survivors are more isolated. They are surrounded by a community of non-survivors, who may not understand their post-trauma reactions. In such circumstances, mental-health professionals are also likely to be perceived as outsiders and thus, are not invited into the multiple levels of the trauma membrane. In contrast, after centripetal disasters, survivors are more united, such that the boundaries of the trauma membrane, in time, become stronger and also more functional, allowing competent professionals inside to help survivors. In such a situation, "trauma membranes around individual survivors may fuse together to form an inclusive community-wide trauma membrane" (Lindy, Grace, & Green, 1981, p. 475).

Early work with the trauma membrane on a community level suggested that the time, nature, and duration of catastrophe, damage to community structures, attitudes toward the event, communication among survivors, emergent survivor

leadership, and the culture of recovery are factors that influence the functionality of the trauma membrane. This book allows further exploration of these and other variables that make a difference in establishing the quality and effectiveness of a given trauma membrane. The next sections will explore various dimensions of the trauma membrane.

The Trauma Membrane at the Level of the Intrapsychic Structure

> A trauma is broken into bits to be integrated, digested, or repressed. (Krueger, 1984)

> The psychic organism is capable in its own time of breaking down the impact of traumatic stressors and their associated affect states into manageable amounts that permit gradual intrapsychic processing (Lindy, 1986, p. 198).

Typically, an individual cannot process the traumatic memory related to a trauma or disability immediately and fully, because the event is incomprehensible to the individual and because the information about its present and future implications may overwhelm an individual's psychological capacity if it were faced all at once. Hence, the trauma memories are titrated by means of a trauma membrane, which protects the person's psyche from being overloaded and allows time for processing the trauma.

The intrapsychic application of the trauma membrane originated when Lindy and his colleagues realized a second use of the trauma membrane term while reviewing the individual reports of psychotherapy with former American combat veterans of the Vietnam War, who were being treated by psychoanalysts from the Cincinnati Psychoanalytic Institute. This second perspective of the concept was defined as an intrapsychic structure, namely a temporary, posttraumatic, psychological layer that covered a damaged perceptual apparatus of the survivor.

From this perspective, the trauma membrane is an internal mechanism, developing within an individual's psyche after trauma (Lindy, 1985). It is "a semi-permeable membrane which covers the space left in the repression barrier by the trauma experiences" (Lindy & Wilson, 2001, p. 436). The trauma membrane is semi-permeable in the sense that the traumatized individual decides who to let under the membrane and into their "phenomenal reality," but at the same time, the individual also chooses who to deny access and thus, "use[s] ego defenses to protect their perceived and experienced sense of vulnerability" (Lindy & Wilson, 2001, p. 436). Hence, the traumatic membrane permits selective access to the traumatic memories – both in the intrapsychic and in the interpersonal sense.

The Formation of an Intrapsychic Trauma Membrane

> When one encounters memories of events that still cannot be accepted lovingly, peacefully, and comfortably, one may be driven to continue to promote the painful affective responses

and renew the struggle against objects from the past that now patently reside nowhere but in one's own mind. Unmastered memories represent unhealed "wounds," which keep generating painful affects. Memories that cannot be accepted may have to be reinterpreted or modified in a kind of self-detoxification (Krystal, 1985, p. 156).

We could summarize the development of the trauma membrane: After a traumatic event, a psychological membrane enfolds the traumatic memories. The purpose of this intrapsychic membrane is to cordon off the internally or externally generated components that would interfere with the naturally occurring psychological healing related to the trauma. This psychic separation of the traumatic memories from a person's normal psychological processing may permit the individual to function despite the traumatic event. In an internal process, the individual titrates access to his or her own traumatic memories, in order to be able to gradually absorb and process the traumatic memories. At the same time, the individual decides to whom to grant access to the traumatic memories, as a way of mediating who or what elements would facilitate healing (i.e., maintaining the interpersonal trauma membrane). Thus, because traumatic memories can be stress provoking, the trauma membrane acts as an ego defense against re-traumatization by titrating exposure to traumatic memories that may originate from internal or external sources. Some trauma therapies use imaginal exposure to trigger a titrated recall of traumatic events; the individual permits the therapist to breach the trauma membrane in controlled circumstances (i.e., a therapy session) if the trauma membrane appears faulty (i.e., if intrusive memories are occurring at a distressing rate).

Intrusive memories can be understood as when traumatic memories leak across this membrane without the individual's volitional, conscious control. The trauma membrane is not rigid and thus, trauma memories cross the trauma membrane, which is part of the intrapsychic processing traumatic events. When the trauma membrane is fragile, individuals may experience a flooding of traumatic memories into their consciousness, which can include flashbacks or intrusive, non-verbal memories (e.g., smells, sights, sounds). Because intrusive memories are a repetition of the trauma and hence traumatizing, an individual will work to protect against such occurrences by internal defense mechanisms (e.g., using denial; Livneh, 2009), as well as external defense mechanisms (e.g., avoiding stimuli that may trigger reminders of the trauma). Internal defenses, which the individual can quickly use when a "tear" occurs in the individual's trauma membrane, include denial, disbelief, dissociation, and disavowal.

Using the trauma membrane concept in this intrapsychic manner draws attention to the perceptive apparatus as the site of psychological injury in trauma and offers clinical opportunities for new foci in the treatment. When not encapsulated by a trauma membrane, reminders pierce the injured surface, producing acute physiologic hyperarousal and dysphoric states that recapitulate the traumatic experience. The resulting abreaction is disorganizing to the survivor and does not lead to healing; abreaction per se does not help, as it does not occur in a healing context. Kardiner (1941) explained that abreaction has no curative value for treating traumatic neurosis because "the whole ego structure has been altered in these chronic cases" (p. 216, emphasis added), making abreaction "irrelevant" for curing traumatic

neurosis. Kardiner's quote reflects an understanding of the power of trauma to cause changes in an individual's intrapsychic functioning.

To facilitate psychological functioning after a traumatic event, the intrapsychic trauma membrane encapsulates a traumatic memory that consists of verbal and non-verbal memories, which range from narratives of the event to affective reactions to sights, sounds, smells, and physical sensations of a trauma. The containment of the trauma memories is supported by ego defenses until the individual is ready and able to psychologically process or "work through" the trauma (Horowitz, 1976; Lindy, 1986). Working through the trauma is a naturally occurring process, according to many researchers, including Freud and Horowitz (see the followings sections).

As the two quotes at the beginning of this section reflected, memories of a traumatic event need to be assimilated gradually, because they are often highly distressing and intellectually incomprehensible. The following sections will present an overview of various theorists' perspectives on how this integration of traumatic memories occurs. The concept of the trauma membrane owes much to these investigators. We begin with a brief section on trauma neurosis and Freud's idea of the stimulus barrier.

Freud's Ideas on Trauma Neurosis

According to Freud (1935), an event could be defined as traumatic if

> [W]ithin a very short space of time [the event] subjects the mind to such a very high increase of stimulation that assimilation or elaboration of it can no longer be effected by normal means, so that lasting disturbances must result in the distribution of the available energy in the mind (p. 243).

A person's stimulus barrier acts as a protective filter for physiological and psychological stimuli, according to Freud (1920/1955). This stimulus barrier can be penetrated by traumatic events:

> We describe as "traumatic" any excitations from outside, which are powerful enough to break through the protective shield. It seems to me that the concept of trauma necessarily implies a connection of this kind with a breach in an otherwise efficacious barrier against stimuli. Such an event as an external trauma is bound to provoke a disturbance on a large scale in the functioning of the organism's energy and to set in motion every possible defensive measure. At the same time, the pleasure principle is for the moment put out of action. There is no longer any possibility of preventing the mental apparatus from being flooded with large amounts of stimulus, and another problem arises instead – the problem of mastering the amounts of stimulus which have broken in and of binding them, in the psychical sense, so that they can then be disposed of (pp. 33–34).

The intrapsychic structure of the stimulus barrier, when functioning, keeps away the images and experiences (i.e., trauma-related) that would otherwise might overwhelm it. Freud (1920/1955) depicted the stimulus barrier as functioning by protecting against stimuli and receiving stimuli. It can also be used to deal with stimuli originating from within, the stimuli that are treated as originating from the outside (i.e., the defense mechanism of projection), and externally generated stimuli.

Freud (1920/1955) thought that the piercing and the collapse of the ordinarily protective stimulus barrier were responsible for feeling overwhelmed in traumatic states. In the aftermath of trauma, the stimulus barrier becomes broken and non-functional. Freud viewed the disorder of traumatic neurosis as originating from a stimulus barrier that was overwhelmed or extensively ruptured by environmental forces, due to the intensity of the traumatic event. The roots of the construct of post-traumatic stress disorder (PTSD) in the concept of trauma neurosis may be traced to the psychoanalytic theories of Freud, in addition to several of his contemporaries, which will be explored in the following section.

In his eighteenth lecture, Freud (1935) analyzed the traumatic neurosis of individuals, who were veterans of war and who fixated on their traumatic experiences. He stated that not all fixations will lead to a neurosis, but that all neuroses have fixations. Freud asserted that these individuals reproduced the trauma in their dreams because they have not been able to sufficiently deal with the situation (i.e., traumatic memories). Freud (1920/1959) noted that individuals with traumatic neurosis may experience intrusive dreams that are repetitive and that return to the time of the accident/trauma. He explained that even in view of his theory of the pleasure principle (i.e., that individuals seek pleasure and avoid pain), the repetition of unpleasant matter may occur in the mind, in order to allow traumatic events to be recollected and faced. This process of repeating trauma, noted Freud, works independently of and is more primitive than the pleasure principle, yet can operate simultaneously with the pleasure principle. Freud described that the compulsion to repeat certain traumatic material in the present does not bring pleasure, just as the event was not pleasurable when it occurred in the past. Freud also noted the phenomenon that the repetition of repressed material occurs as if the event was occurring in the present period of time, instead of a memory of the trauma as a past event. Freud (1920/1955) wrote

> [The patient] is obliged to repeat the repressed material as a contemporary experience instead of, as the physician would prefer to see, remembering it as something belonging to the past… [the physician] must see to it, on the other hand, that the patient retains some degree of aloofness, which will enable him, in spite of everything, to recognize that what appears to be reality is in fact only a reflection of a forgotten past (p. 19).

According to Gediman (1971), Freud proposed as early as 1895 that the existence of a *stimulus barrier* was a requirement for the survival of an individual in the world, due to the many forces impinging upon the individual. Gediman depicted Freud's concept of a stimulus barrier as a primitive defense mechanism that served as a precursor to the more sophisticated ego defense mechanisms. In Gediman's analysis, Freud described the stimulus barrier as having a dual function of protection and reception of stimuli. Yet, it was not clear, over the course of decades of his writing, whether Freud viewed the barrier as solely a neurological one or as a psychological one (or both), according to Gediman.

Gediman (1971) proposed that the concept of stimulus barrier should be defined as a complex ego function with multiple factors. She argued that the stimulus barrier is not a simple concept, because of the evidence that the stimulus threshold

can be lowered (i.e., sensitization) or raised (i.e., adaptation) with traumatic stimuli. Further, several researchers have proposed that the stimulus barrier can be both passive and active by the receptive and protective functions respectively. For example, Brett (1993) depicted Freud's explanation of "repetition compulsion" as an active defense mechanism that allows individuals to develop mastery over trauma, in contrast to the passivity and helplessness that may have been experienced during the occurrence of a trauma. Gediman (1971) noted that "agitated or chaotic motor behavior and sleep disturbances are among the most reliable indicators we have that the stimulus barrier tends towards the maladaptive" (p. 254). According to the present-day diagnostic criteria of PTSD (APA, 2000), these symptoms of non-adaptive motor discharge reflect the hyperarousal cluster of the PTSD cluster.

Later theorists (Gediman, 1971; Krystal, 1985) reasoned that the stimulus barrier is active and integrative. Gediman noted that the protective function involved active accommodation to stimuli with the passive receptive function (e.g., thresholds) and concluded that the stimulus barrier was both a sensory/perceptual threshold, as well as an adaptive ego function. This contrasts with Freud's view that the stimulus barrier was a *precursor* to the ego. Gediman's summary definition of the stimulus barrier is that it "may be reformulated as a complex ego function measurable along a dimension of adaptiveness–maladaptiveness. It refers to the structures and functions which enable a person to regulate amounts of inner and outer stimulation so as to maintain optimal homeostasis and adaptation" (Gediman, 1971, p. 254).

In their discussion on war neurosis, Ferenczi, Abraham, Simmel, and Jones (1921) defended Freud's perspective that war (and peacetime) traumatic neurosis had sexual origins. Yet, the understanding of war neurosis gradually evolved, with Kardiner writing extensively on the concept two decades later (see the next section). Kardiner (1941) noted that the most important idea that Freud advanced regarding the traumatic neurosis is that "the normal defense against stimuli (Reizschutz) had been broken through, and that the neurosis consisted of the consequences of this rupture, and the subsequent efforts at mastering the vast quantity of stimuli that overwhelm the subject" (p. 137).

With the work of Freud, Gediman, and Brett in mind, we understand the trauma membrane to represent a dynamic, temporary, complex, protective structure that bridges a broken stimulus barrier, protecting the psyche as it moves from trauma toward healing and homeostasis. Thus, the wound in the stimulus barrier is healed by means of the trauma membrane, which temporarily bridges the gap in the stimulus barrier as it is structurally repaired.

Kardiner and Traumatic Neurosis

Kardiner's monograph (1941) on traumatic neurosis included 24 case studies on the topic. He commented that Freud did not elucidate how the stimulus barrier was constructed, how it was manifested in individuals, nor how it fit with the Freudian idea on instincts (the "yet undefined ego instincts, 'Eros' or life instincts";

p. 136). Instead of using the Freudian viewpoint on traumatic neurosis and sexual instincts, Kardiner wrote that traumatic neurosis involved an instinct (or drive) for self-preservation and that traumatic neurosis was a syndrome that consisted of both drive and action. He noted that in traumatic neurosis, a contraction of the ego occurred along with a cognitive disorganization.

Kardiner (1941) defined *trauma* as involving inhibition (or the ceasing of specific functions), which was a primary symptom:

> [A] trauma is an external influence necessitating an abrupt change in adaptation, which the organism fails to meet, either being destroyed entirely by the external agency or in part, and that this destruction may involved not tissues but adaptation types. The predominant alteration of adaptation found in the stabilized forms of the traumatic neurosis are inhibitory processes which can destroy the utility value of an organ or its functions (p. 81).

In addition to Kardiner's definition of trauma as requiring a change in an individual's adaptation, he defined *traumatic neurosis* as "[A] type of adaptation in which no complete restitution takes place but in which the individual continues with a reduction of resources or a contraction of the ego" (p. 79). Further, he defined *adaptation* in the following manner:

> Adaptation is a series of maneuvers in response to changes in the external environment, or to changes within the organism, which compel some activity in the outer world to the end of continuing existence, to remaining intact or free from harm, and to maintain controlled contact with it (p. 141).

While Kardiner noted that "the psychological fabric of the neurosis remains very thin" (p. 87), he stated that individuals with traumatic neuroses are able to respond in an organized, adaptive manner, but also may experience continued symptoms as a consequence of the trauma:

> [T]he adaptation of the individual shows an organized effort at restitution by continuing the protective devices used on the original occasion of the trauma. However, that is not all. This evidence points very strongly to the fact that the individual is really in a continuous state of heightened vigilance and that his conception of the outer world and himself have undergone considerable change (1941, p. 84).

Elaborating on traumatic neurosis, Kardiner claimed that a person with such a neurosis can be explained from dual perspectives: "from the physiological point of view, there exists a lowering of the threshold of stimulation; and, from the psychological point of view, a state of readiness for fright reactions" (1941, p. 95). Individuals with traumatic neurosis may experience the perception that "he has lost command of the more highly integrated forms of defense against [the trauma], and what remains is nothing but two primitive modes – violent and disorganized aggression, or abject helplessness" (p. 95). The aggression is that "he annihilates or is annihilated" (p. 94). Further consequences from experiencing trauma include "…that portion of the ego which normally helps the individual to carry out automatically certain organized aggressive functions of perception and activity on the basis of innumerable successes in the past is *either destroyed or inhibited*" (pp. 116–117; emphasis added). Hence, experiencing trauma may cause some alteration in functioning, and sometimes it can be psychologically paralyzing.

Brett (1993) summarized Kardiner's two stages or mechanisms that explained the five main symptoms found in stress disorders (i.e., nightmares, trauma fixation, startle response, aggression, and a decrease in general functioning): (a) a failure or destruction of adaptive functioning, including a withdrawal of the processes that govern the individual's interaction with the environment and a "massive" psychological and physiological constriction; (b) a reorganization of an individual's capabilities, in order to regain adaptive capacities. Brett described Kardiner's theory as containing the activating principle of "primary adaptive failure" (p. 67), causing withdrawal, constriction, and eventually an effort at restitution.

Keeping Kardiner's ideas in mind, we see damage to the trauma membrane during the potential recovery period as interrupting adaptation, and as re-initiating non-adaptive emergency defenses that are brought into play in the service of survival at the time of the original trauma.

Integrating Traumatic Memories

Pierre Janet, in his *L. automatisme psychologique* in 1889, proposed that a failure in information processing was a key to the development of non-adaptive reactions to trauma (Powers, Cruse, Daniels, & Stevens, 1994; Van der Kolk, Brown, & Van der Hart, 1989). That is, the key issue underlying posttraumatic syndromes, according to Janet, is the inability to integrate traumatic memories (Van der Hart, Brown, & Van der Kolk, 1995). According to Pierre Janet, there may be a "phobia" or avoidance of the traumatic memories, resulting in a resistance for integrating the traumatic memories and in a continuance of those memories as isolated fragments that are split off from ordinary consciousness (Van der Kolk et al., 1989).

Janet's clinical observations of traumatized individuals provided evidence that the human consciousness can develop into two or more "separate, dissociated streams of consciousness, each with a spectrum of mental contents such as memories, sensations, volitions, and affects" (Van der Kolk et al., 1996, p. 84, citing Nemiah). Thus, Janet asserted that PTSD was a result of psychological insufficiency and the decreased ability for synthesis and integration of the trauma, not a result of an anxiety reaction (Van der Kolk et al., 1989). The intrapsychic trauma membrane, as presented in this chapter, can be viewed as a psychological barrier that moderates the integration of traumatic memories. In order to integrate traumatic memories and stimuli, the psychological membrane would need to be permeable, allowing for the dosing of psychological trauma fragments into one's primary stream of consciousness.

According to Janet, there were two memory systems, which work somewhat independently from each other and in which intense emotional experiences were stored: (a) the autobiographical, verbal memory and (b) implicit memory that contains the sensory and emotional imprints of events (Van der Kolk, 2004). While the autobiographical memory may be altered over time, the implicit memory

preserves traumatic memories without much alteration, such that individuals may re-experience those emotions and sensory experiences in a manner that closely resembles the original trauma. This distinction between the two memory systems is one reason why therapeutic techniques, which depend highly on the cognitive ability to revisit and reframe past events, may not be very effective for dealing with trauma, due to not addressing the implicit memory (Van der Kolk). Janet viewed the core problem related to trauma as helplessness from failing to take appropriate action against threats. This lack of action at the time of trauma requires that traumatized individuals create a verbal representation of the trauma, in order become active and transform trauma into a memory that is tolerable (Van der Kolk et al., 1989).

Brown, Macmillan, Meares, and Van der Hart (1996) explained the divergence of the theories of trauma as proposed by Freud and Janet: Janet viewed non-conscious processes as divided laterally, while Freud depicted non-conscious processes as divided vertically, or in terms of depth or layers of consciousness. According to Janet, there existed a central core of active consciousness that may have peripheral, passive states of subconscious awareness. There can be times when these peripheral, subconscious states can become conscious and active, such as after the occurrence of a trauma. Janet proposed that these subconscious states may operate independently from the central core of active consciousness.

Further, Janet proposed a three-stage process of "posttraumatic hysteria" (Brown et al., 1996). The first stage involves an acute stage of high emotions in which the trauma is not yet assimilated. This is followed by a second stage in which traumatic memories are dissociated from consciousness and operate as "fixed ideas." This stage involves a narrowing of consciousness and the intrusion of trauma-related images and experiences, which alternates with avoidance of the stimuli that trigger intrusions. The third stage consists of emotional exhaustion, in which non-specific psychological states, such as depression, may occur. According to Janet, "posttraumatic hysteria" was a process in which there was an increasing lack of integration, creating even a broader range of problems in personality functioning and synthesis. This refers to one of the primary differences in viewpoints between Freud and Janet: Janet's perspective focused upon psychological integration and dissociation, while Freud's concepts centered upon the activity of the ego and its defenses. Thus, Freud's views were more "illness-oriented," whereas Janet's perspectives were more oriented toward health, growth, and integration of the self (Brown et al., 1996 p. 487). In addition, according to Brown et al., Freud's viewpoints generally did not include factors from the environment because of his focus upon the deterministic, internal states of mind, while Janet's theories tended to be more multidimensional, including biological (i.e., sensory), psychological, and social factors.

Information Processing Views on PTSD

Rivers (1918) described the development of a traumatic neurosis, suggesting that repression, or the process by which some part of an individual's mental content

is pushed out of one's memory, leads to a state of inaccessibility of part of one's memory to manifest consciousness (often called "dissociation" or splitting of consciousness). Fairbanks and Nicholson (1987) noted that psychoanalytic conceptualizations of trauma were based on the idea that traumatic neurosis arose from energy overload and that the individual's ego attempted to release this energy by binding or abreacting. These concepts, and concepts such as Janet's explanations on the failure to integrate traumatic memories, eventually evolved into the concept of trauma as an information overload, which required that the individual integrated the trauma and its meaning into the individual's self-concept and worldview. The information processing perspective on traumatic neurosis is typically represented by Horowitz's theories.

Horowitz and Kaltreider (1979) wrote that adaptation to loss is the ideal goal after trauma, but that there is a difficult interval that follows recognition of loss, in which individuals may waver among certain cognitive perspectives as new views of the world are formed and new information is processed. Horowitz proposed that responses to trauma often trigger a cycle of reactive phases that involve grieving for and facing losses, which may entail a "dosed" response to the trauma that is moderated by control mechanisms. If an individual is able to balance these modulations of phases, it may lead to new states that are adaptive.

Horowitz (1997) asserted that responses to trauma are "known, phasic, and recognizable" (p. 2). Horowitz (1986) proposed six reactive phases to a traumatic event, which may overlap: event and immediate coping, outcry, denial, intrusion, working through, and completion; he also detailed their pathological intensifications (see p. 27). Horowitz (1997) stated that clinical and experimental studies reported a set of polar responses to trauma, which included the following: (1) intrusive and repetitive emotions, thoughts, and behaviors and (2) avoidance, denial, numbing, and behavioral constriction.

Horowitz (1986) depicted the process of adaptation to trauma as occurring in phases, in which an individual may experience thoughts and feelings with various themes related to the trauma – some of which may be contemplated and processed, while others that are too threatening will be denied. The themes that are denied or warded off may appear later in intrusive-type episodes. When themes are warded off, they become part of a dynamic unconsciousness, in which they are "preserved in active memory, [thus] they tend toward repeated representation and processing" (Horowitz, 1986, p. 97). Horowitz also noted that both psychological and biological factors interact when an individual attempts to integrate the traumatic event. Yet, he emphasized that personality and trauma history will always play a role in whether an individual reacts non-adaptively to trauma, because "previous concerns and conflicts will always be caught up in an associative matrix with the meaning of events" (1986, p. 166).

Fairbanks and Nicholson (1987) depicted Horowitz's theory of PTSD as an alternation between defensive under-control (i.e., intrusive images) and over-control (i.e., avoidance, numbness). They noted that integration of traumatic experiences is the ultimate goal of any psychodynamic treatment of PTSD, though the techniques by which this is achieved will vary according to clients and the phases of

PTSD. Brett (1993) depicted Horowitz's theory as composed of a principle of a "completion tendency of cognitive processing" (p. 67).

Keeping Horowitz's contributions in mind, we believe that part of what enables the re-working of trauma, in measured doses rather than repeated abreactions, is the presence of a well-functioning trauma membrane, including a positive relationship with a therapist or other nurturing guides. A robust trauma membrane will lead to perceptions that are limited and focused, and affect that is dosed and regulated.

Other Models of Processing Traumatic Memories

Brett (1993) proposed a distinction between two types of PTSD theoretical models. The first type of model, such as Freud's and Horowitz's, consisted of two alternating states that were immediate reactions to trauma. These states involved the tendency to repeat the trauma and the tendency to avoid or defend against the trauma. According to Brett, the explanatory scheme of Freud's model involved memories that led to painful affect and thus, to a defense against this affect. The explanatory scheme of Horowitz's model consisted of information leading to painful affect and then controlling against this affect, which oscillates until the cognitive processing of the trauma is completed.

In contrast to a PTSD model of alternating states, a second type of PTSD was a "progressive unfolding of one process" (Brett, 1993, p. 67). According to Brett, this progressive unfolding type of PTSD model was used in other scientists' theories, such as Kardiner's. This kind of PTSD model proposed that trauma triggered a comprehensive failure in a person's adaptive system. Resulting from the "crippling" or failure of adaptation, the intrusions of the trauma were secondary processes and stemmed from the lack of defensive ability against traumatic memories (Brett, 1993).

Models of cognitive processing depict individuals as maintaining a certain mental framework that contains past experiences, beliefs, and expectancies (Creamer, Burgess, & Pattison, 1992). When traumatic events occur, individuals have to integrate these experiences into their inner schema. Until the trauma can be assimilated mentally, the trauma and information related to it will be stored in active memory and will continue to intrude. In order to empirically examine a cognitive-processing model of traumatic events, Creamer and colleagues conducted a longitudinal study among 158 individuals at 4, 8, and 14 months after witnessing an incidence of workplace violence, in which 8 people died. These researchers argued that intrusion precedes avoidance symptoms, because intrusion occurs when a trauma or fear network is formed. This fear network includes stimuli cues about the trauma, cognitive, affective, physiological, and behavioral responses, and interpretive information about the trauma. These researchers found that scores on the intrusion and avoidance subscales (as measured by the Impact of Event scale) mediated the severity of exposure to trauma (measured as a dichotomous score) and the resulting symptom levels (as measured by the Global Severity Index), which they interpreted as a

possible indicator that individuals were processing their trauma cognitively. Further, intrusion was negatively related to and a good predictor of GSI scores on all three assessments, which Creamer, Burgess, and Pattison interpreted as support that the fear network was activated and that intrusive thoughts resulted in more global dysfunction, rather than vice versa. The relationship between levels of avoidance and symptom levels dropped over time, such that avoidance predicted GSI levels at 4 months, but did not at 14 months. The researchers interpreted this as an indication that avoidance, as a short-term mechanism, interferes with processing and therefore causes higher symptom levels, yet in the long term, avoidance may be a useful coping strategy for some people.

In terms of the relation of processing traumatic memories and the traumatic membrane, the process of working through traumatic experiences within the context of a well-functioning trauma membrane, according to Lindy (1986), involved three tasks: (a) pinpointing affect-laden memories of the trauma, (b) ascribing meaning to the traumatic memories, and (c) recreating a psychological connection with one's past. Yet, such a process requires a level of ego strength and cohesion, which may have been disrupted by the psychological traumatization. If an individual's ego strength is diminished, then reminders of the traumatic event may pose as a psychological threat and thus, be avoided instead of being integrated. Hence, the processing of traumatic membranes in the intrapsychic trauma membrane may need to be facilitated at the level of the interpersonal trauma membrane, i.e., with the help of therapists or other individuals who are providing psychosocial support.

Processing Traumatic Memories and the Trauma Membrane Concept

Most researchers and clinicians would agree that the first step in integrating a trauma experience consists of processing the psychological shock of the trauma. If this shock is overwhelming, then individuals will attempt to cordon off the memories of the trauma; this process of creating an intrapsychic membrane around traumatic memories is exemplified by a case report, in which a survivor – in order to deal with the guilt, sadness, and anger – "organized herself to ward off, wall off, and encapsulate the feelings and the conflicts about them" (Lindy & Titchener, 1983. p. 91).

Krystal (1971, 1985) noted that while the mastery of the traumatic event may have to do with working through the ideational implications of the event (i.e., the psychic reality of it, the meaning of it, the unconscious fantasy mobilized by it), the crucial issue at the time of the onset of the traumatic experience is *affect tolerance*. In order to prevent the initiation of the traumatic syndrome, the individual has to be able to tolerate the affective responses to trauma. Krystal noted that these responses are developed at the time with intensity high enough to lend the experience the feeling of reality, but not so high that it overwhelms a person and drives him or her to use primitive defenses. If the individual's affect tolerance is exceeded, the person

may have to ward off the affect by becoming depersonalized, i.e., by developing a massive "numbing" through isolation of the affect (p. 17). In terms of the trauma membrane, the affect tolerance is a psychological threshold value that determines whether the trauma membrane will be permeable, as far as the exchange of traumatic memories past the trauma barrier.

Krystal (1971) depicted the function of traumatic neurosis or posttraumatic stress symptoms as serving a purpose. One purpose for the trauma membrane is its continuing to ward off the traumatic memories, because those memories have not been integrated into a person's psyche:

> [T]he need, when the affect had been so frightening, [is] to repeat the experience in word and deed, and in dreams and daydreams, and then gradually to increase the tolerance of the affect, thus overcoming the fear of it. Sometimes, however, this effort is not successful, and there remains a lifelong compulsion to repeat the experience and relive the affect, especially in dreams (p. 18).

Rachman (2001) wrote about emotional processing and its cognitive processes, especially in reference to PTSD. He described PTSD as a long-term reverberation (i.e., re-experiencing) of emotional experiences. The flashbacks "are a vivid example of...unexpected fragmentary returns of emotional experiences" (p. 165). Further, the neutralization of emotion-provoking stimuli involves "cognitive changes and these promote the breaking-down of incoming stimulation into manageable proportions, which can then be absorbed over time" (Rachman, 2001, p. 170). He lists the following as a direct indication of incomplete emotional processing of traumatic memories:

> [T]he persistence or return of intrusive signs of emotional activity, such as obsessions, flashbacks, nightmares, pressure of talk, inappropriate expressions or experiences of emotions that are out of context or out of proportion, maladaptive avoidance. The indirect signs include an inability to concentrate on the task at hand, restlessness, irritability and other indicators of the heightened arousal that is characteristic of PTSD (p. 165).

Further, Rachman (2001) noted that successful processing (i.e., traumatic memories moving across the trauma membrane) is reflected by adaptation, for which individuals are able to converse about, see, listen to, or experience reminders of trauma-related stimuli, while experiencing a decline in distress, disturbed behavior, or non-adaptive cognitions, and a return of customary behavior. Rachman noted that four groups of factors can lead to problems in emotional processing: state factors (e.g., illness, perceived threat), non-adaptive cognitions (e.g., negative appraisals, inflated sense of responsibility, "sense of permanent disability," p. 169), personality factors (e.g., extreme introversion, neuroticism), and stimulus-related (i.e., trauma-related) factors (e.g., large stimulus inputs).

In summary, the trauma membrane can be viewed as a temporary psychological structure that forms on the surface of a damaged perceptual apparatus (i.e., stimulus barrier), covering and protecting this primary site of psychological injury in its aftermath. The semi-permeable nature allows traumatic memories to cross the trauma membrane and enter into an individual's consciousness, in order to be ascribed new meaning and to be gradually assimilated or integrated. The theories about how this

processing occurs are distinct, yet can be viewed as useful for understanding how an individual processes traumatic memories so that they do not become or remain psychologically paralyzing.

Interpersonal Facilitation of the Trauma Membrane

As outlined earlier, at the level of intrapsychic structure, the trauma membrane replaces a damaged perceptual apparatus or stimulus barrier and interfaces the damaged psyche of the survivor with potential reminders of the trauma. This interface mediates between everyday reminders of the traumatic event in the external world and the internally held traumatic memories. The survivor tends to react to these external stimuli in the present as though the trauma were recurring, without processing the difference in degree of danger. Therapists work at the boundary of this trauma-membrane interface:

> . . .[T]herapy is an effort to remove the blocks to an essentially spontaneous healing process. In order to this, he must be invited to the boundary of the trauma membrane, be permitted entry, and maintain that as healing space, dosing or titrating traumatic memory and its processing. . .[Entering beneath a client's trauma membrane] is an extremely tentative and gradual process, but once complete, is remarkably enduring (Lindy, 1986, pp. 200–201).

The concept of the trauma membrane is useful to therapists, as they balance their client's need for processing trauma while having a fear of loss of control, which is stirred by approaching stimuli that might trigger a traumatic reaction. In such clinical situations, the trauma membrane forms slowly like a single layer of epithelium along the surface of the open wound, implying, at best, a limited vocabulary of defensive operations, such as dissociation. The resumption of a more complex, rich, adaptive vocabulary of defenses (i.e., multi-cellular) in the aftermath of trauma can replace that thin, all-or-nothing defensive response (i.e., only one cell deep); this may occur only after appreciable psychological work has been accomplished. Hence, the reactive, rigid defense mechanisms can be eventually replaced by higher-order defense mechanisms as the traumatic memories are processed.

Empathy in the form of natural supports or in the person of the therapist reinforces this thin layer around the traumatic memories, until a sturdier granulation tissue (on a psychological level) has formed and the survivor can re-establish a more adaptive defensive repertoire. Therapists have noted that "some patients with PTSD fear that treatment itself will overwhelm a fragile barrier protecting the patient from his traumatic memories. Such patients will flee lest continuing contact with the therapist make this an unmanageable psycho-economic state" (Lindy, Green, Grace, & Titchener, 1983, p. 600). The flip side of having too rigid of a trauma membrane is that the client will be resistant to therapy and the interpersonal process that therapy entails (Lindy et al., 1983).

So long as defenses are in the service of reinforcing disavowal, the therapist does not have permission to make links to the trauma situation. If the therapist aggressively tries to penetrate the trauma membrane, harm may occur. If the therapist is

guided by a strategy of digging out the trauma content, he or she is at risk of plunging past these fragile defenses and exacerbating not a dosed trauma segment, but an overwhelming traumatic reenactment and a potential fracture of the therapeutic alliance – in short, of causing harm (Lindy & Wilson, 2001, p. 439):

> [Therapists'] fingers are metaphorically on the window to the trauma, opening it only so far as the patient is ready to tolerate. And we measure this readiness, as does he in the relative strength and flexibility of those defenses. This is the central message of "do no harm" (Lindy & Wilson, 2001, p. 440).

The theoretical structure of the trauma membrane allows the client the opportunity to place the therapist in such a healing position as the treatment proceeds. A therapist's attention to the forming of the trauma membrane requires a special emphasis on the clinician's use of pacing and the dosage of exposure. This titration of exposure to traumatic memories should be based on the readiness of the trauma membrane to absorb and process stimuli more adaptively. By this process, the therapist, working as though within the trauma membrane, finds a useful position to move the treatment in the direction of mastery. To illustrate this process, during a post-treatment interview of a traumatized Vietnam veteran, a former client was asked to describe the impact his therapist had on him (Lindy, Spitz, Macleod, Green, & Grace, 1988, p. 315):

> Vince thought for a moment and then described the following experience. "Before the treatment, certain sounds, like a helicopter, or weather conditions such as a sultry day, or an image along a tree line, set me off. I would get agitated and knew I might get out of control and do something violent. Now," he said, "I ask myself, what would Dr. S (my therapist) say about this? Dr. S would remind me that I am in Cincinnati not in Vietnam and the year was 1982 and not 1968. Then I would begin to relax and no longer feared I would lose control."

This vignette illustrates how the client, Vince, had placed his doctor as an auxiliary presence at the periphery of his sensory apparatus, which helped the client discriminate between dangerous and indifferent stimuli. That is, the client had placed Dr. S at the very site of an internal, intrapsychic, trauma membrane, which had permitted the therapist to function as auxiliary discriminator between dangerous and neutral input. Although this is an interpersonal process between the client and the therapist, the psychological work was conducted at the intrapsychic level of the client's trauma membrane.

It is challenging for therapists to work with survivors of traumatic events; they have to face the existential despair of their clients and the multi-faceted nature of their questions. An example of the multitude of profound questions that a client may ask is as follows:

> In the overwhelming nature of the experience, the survivor asks "Where is order?" In the grotesqueness that continues to invade his or her mind, he or she asks "Where is peace?" In the helplessness of being unable to prevent the catastrophic events, he or she asks, "What did I do?" In the complex emotions surrounding impossible choices, he or she asks, "What else should I have done?" In the pain of loss amidst fire explosion and death, the grieving relative asks, "How did he die?" In the anguish of an altered world, the survivor asks, "How can I ever understand myself in relation to this new world?" (Lindy & Lindy, 2004, p. 576)

In the pressure to have answers to the above questions, the therapist may over-react by fulfilling the client's wish for an all-knowing, all-comforting guide, may distance him/herself from the client by refusing to respond, or may become over-whelmed by the client's existential despair (Lindy & Lindy, 2004). Therapists may make such choices, instead of quietly bearing witness to the survivor's testimony (Felman & Laub, 1992).

The concept of an interpersonal trauma membrane may also apply to the coun-selor/therapist. That is, when traumatic stories of unimaginable pain and abuse break through the stimulus barrier of the therapist, he or she may create a trauma mem-brane to regulate the impact of these client narratives, in order to protect against absorbing the un-metabolized trauma and consequently experiencing secondary vic-timization. The therapist may also use distancing or avoidance of the client's pain, colluding with the client so as to block hearing more trauma-related details; these may be forms of counter-transference resistance/defenses. On the other hand, some mental-health professionals, who work at disaster sites and who have more action-oriented personalities, may respond to helping survivors of traumatic events in a different manner: As such, they may become overly involved and find themselves identifying too much with the survivors. The middle ground of therapeutic response contains a "wish to preserve the healthy denial all people need to dare to get out of bed every morning" (Lindy & Lindy, 2004, p. 574).

In summary, the creation of an interpersonal trauma membrane, which is offered by an individual (e.g., a therapist) or individuals (e.g., family, friends, other sur-vivors, or helping professionals in the recovery environment), is distinct from the intrapsychic trauma membrane because it is, in a sense, a psychological "human shield" that is offered to the survivor of trauma. Yet, the interpersonal trauma membrane contains parallels with the intrapsychic trauma membrane, because each represents a cordoning off of traumatic memories that occurs, in order to protect an individual's mind from being overwhelmed from the horror of and psychological harm caused by the traumatic event.

The Recovery Environment Facilitating a Trauma Membrane

Implicit in the metaphor is that a trauma membrane must exist at the interface between two entities, whether it is between the part of the individual that contains the traumatic memory and the part of the normally functioning person, or between the client and the therapist. At the community level, the trauma membrane interfaces a potential network of traumatized survivors with the recovery environment. The fundamental purpose of the trauma membrane is to protect individuals from further psychic tension and/or overload: This may be accomplished in different ways – by means of the individual's own defenses, by the assistance of therapists or counselors, or by means of community-based support systems, such as other survivors.

The recovery environment (Lindy & Grace, 1985; Luchterland, 1971) consists of the overall psychological climate of the community of non-victims, their attitudes

toward the catastrophic events and those victimized by it, the status of pre-existing or emergent community structures that care for the survivors, and the caring or non-caring behaviors to which survivors are exposed. Ideally, these two structures – the trauma membrane and recovery environment – work in concert with each other facilitating healing of the survivor and the community. However, following particular disasters, tension at the interface between these two structures can be considerable. For example, the welcoming environments, which were sympathetic with the cause and the sacrifice of American veterans at the end of World War II, contrasted sharply with the blaming environment that greeted returning veterans from Vietnam, in which warriors were confused with an unpopular war. In other types of traumatic events, differences in the character of recovery environments between centrifugal and centripetal disasters may exist, which were previously discussed.

The Cincinnati trauma group continued to observe tensions at the interface between survivor networks and recovery environments at a number of sites where they were invited to work. Following a tornado in Lubbock, Texas, when immediate relief efforts were at the disposal of socially more advantaged Caucasian individuals, their experience was that of a smooth interface between the survivors and the recovery environment. However, for Hispanics in the same city, who experienced relief efforts as delayed on the basis of prejudice, theirs was an experience of tension at the interface.

In other communities, where residents and workers connected with nuclear power plants were informed that they had been exposed to radioactive contamination, as outside Sacramento, California and Fernald, Ohio, researchers noted that affected inhabitants split into two groups: Some feared that information about contamination might be true but preferred to remain in denial, while others were convinced they were at risk for health hazards (Green, Lindy, & Grace, 1994). It was as though two separate trauma membranes had formed dividing survivors from each other. However, in either case, there were those outside the radius of potential contamination, who sadistically joked about those inside the dangerous circumference, claiming they "glowed in the dark." It was as though neighbors, who could have been part of a recovery environment, feared being contaminated by the survivors, and thus isolated them; this was reminiscent of the shunning of survivors at Hiroshima and Nagasaki. At the Beverly Hills Supper Club fire, non-victims from the same churches as the survivors blamed victims for breaking God's commandments regarding alcohol and dance. Both of these examples reflect a recovery environment that is non-supportive, even toxic, for helping the trauma survivors to heal and for the development of a trauma membrane.

In contrast, sometimes sub-populations within a disaster formed a stronger trauma membrane when a strongly held belief or myth emerged regarding a special reason for their being spared. For example, the African-American population at Buffalo Creek experienced a particularly rapid recovery. One factor, according to some of the survivors, was the way the tragedy came to be understood as a modern-day "passover" event, in that no African-Americans were killed in the random careening of the water from the slag-dam collapse. This was viewed as a positive message from God, unifying these survivors within a strengthened trauma

membrane. In this context, shared beliefs in the cosmic forces at work in the disaster created a sequestered and supportive recovery environment.

In summary, recovery environments are complex, with positive and negative forces at work at the surface of the trauma membrane. Looked at from the point of view of the survivors, the larger recovery environment might be toxic or it might be helpful. It is up to those leaders functioning at the surface of the trauma membrane to determine whether a given outside force should or should not be let inside and to remove those interpersonal "toxins" already present.

Reaching Across the Trauma Membrane

Those who guard the trauma membrane are wary of permitting interactions between survivors and stimuli from the outside world, which might exacerbate their symptoms, including mental-health professionals. They fear the contact may reactivate the trauma and counter the effort to ward off memories of the trauma. The result, at times, reinforces a survivor's avoidance of professional help. Hence, keeping the trauma membrane concept in mind informs us, as researchers and clinicians, as to how and when to proceed. Such sensitivity to the trauma membrane permits us, to the best of our abilities, help create a climate in which we could be invited within that boundary – rather than be rejected because we are outside it, or because there is a threat that we may pierce it with negative results.

Efforts to help traumatized individuals may be threatening, due to the possibility of disturbing the "fragile equilibrium" (Lindy, 1985, p. 154). Hence, if clinicians and/or researchers are perceived as facilitative of the healing process, then they will be invited to cross the trauma membrane. The flip side of this process is that if individuals view the clinicians and/or researchers, who are focusing on the trauma, as a threat to psychological stability after the trauma, then understandably, these professionals will be avoided or not invited to enter the trauma membrane.

The idea of mental-health professionals as functioning at this interface between the trauma membrane and the recovery environment leads to interesting possibilities in the aftermath of trauma. For example, when young people died in a crowd crush at the Coliseum, preparing to see a rock concert by "the Who" in Cincinnati, members of the University of Cincinnati Traumatic Stress Study Center's team wrote editorials and went on national television to counter a view that the deaths were the work of "young barbarians" (as they were being portrayed in earlier media exploitation, because some had stampeded the more vulnerable among them). Instead, it was emphasized that there were many contributing factors in the disaster such as closed doors, false-start announcements, theater seating, and insufficient number of police. These advocates emphasized heroic stories of youngsters who acted to save lives, and called the theater-goers "our own children"; they encouraged community empathy by constructing a narrative that connected the recovery environment with the experience of the grieving families.

Attending to potential discrepancies – between the interpersonal trauma membrane on the one hand and the recovery environment on the other – provides a rational guide for discovering new roles for mental-health professionals in post-disaster environments. There are a number of roles that could help facilitate an interface between a negative recovery environment and the trauma membrane. One example of this would be participating in the media coverage of the event, so as to minimize the distance between a harmfully judging public and an empathic understanding of the survivors' experience.

Traumatized individuals, who were contacted for outreach and research, were best able to utilize communication by printed matter such as newspaper articles, rather than media, such as television or radio, or unsolicited human contact (Lindy et al., 1981). This trend appeared to reflect the survivor's ability to control the exposure to the traumatic memory when the message was printed, whereas the electronic media could be a form of unwanted intrusion.

Finally, it was clear that when mental-health professionals joined all those who were offering assistance to the survivors, such as may be found in a "one-stop center," then the recovery environment was helped. Working with other types of helping professionals at the site of the traumatic event added a psychological component to the necessary, acute interventions, such as those related to food, housing, and medical needs. The innovation of combining mental-health efforts with emerging, trauma-specific care settings and one-stop centers was part of this effort, which served to create an even stronger recovery environment than what would be provided by individuals working by themselves, rather than helping to holistically address multiple levels and aspects of life that were affected by traumatic events.

Conclusions

The trauma membrane can be viewed as a multidimensional concept. First, it can be understood as a protective, interpersonal shield that is formed around trauma survivors in several ways – on a community level or on an interpersonal level (e.g., therapist–client). Second, it can be viewed as intrapsychic mechanism that protects traumatized individuals from being subsequently overwhelmed by traumatic memories that have broken through the person's stimulus barrier. The trauma membrane cordons off those memories until they can be handled by the individual's adaptive psychic processes.

The content of this chapter explored the definition and history of the trauma membrane concept, the similarities and differences between the stimulus barrier and trauma membrane, its value as a metaphor, and how the recovery environment can facilitate its formation in the aftermath of a trauma. As a flexible analogy, the multi-level trauma membrane can help researchers and clinicians explain trauma-related processes and their clinical applications.

References

American Psychiatric Association (1952). *Diagnostic and statistical manual of mental disorders* (1st ed.). Washington, DC: Author.

American Psychiatric Association (1968). *Diagnostic and statistical manual of mental disorders* (2nd ed.). Washington, DC: Author.

American Psychiatric Association (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: Author.

American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders: Text revision* (4th ed., text revision). Washington, DC: Author.

Brett, E. A. (1993). Psychoanalytic contributions to a theory of traumatic stress. In J. P. Wilson & B. Raphael (Eds.), *International handbook of traumatic stress syndromes* (pp. 61–68). New York: Plenum Press.

Brown, P., Macmillan, M. B., Meares, R., & Van der Hart, O. (1996). Janet and Freud: Revealing the roots of dynamic psychiatry. *Australian and New Zealand Journal of Psychiatry, 30*, 480–491.

Creamer, M., Burgess, P., & Pattison, P. (1992). Reaction to trauma: A cognitive processing model. *Journal of Abnormal Psychology, 101* (3), 452–459.

Erikson, K. T. (1976). *Everything in its path.* New York: Simon and Schuster.

Fairbanks, J. A., & Nicholson, R. A. (1987). Theoretical and empirical issues in the treatment of posttraumatic stress disorder in Vietnam veterans. *Journal of Clinical Psychology, 43* (1), 44–55.

Felman, D., & Laub, S. (1992). *Testimony: Crises of witnessing in literature, psychoanalysis, and history.* New York/London: Routledge.

Ferenczi, S., Abraham, K., Simmel, E., & Jones, E. (1921). *Psycho-analysis and the war neurosis.* London: The International Psycho-analytic Press.

Freud, S. (1920/1955). Beyond the pleasure principle. In T. J. Strachey (Ed.), *Freud's completed works* (Vol. 18, standard edition).. London: Hogarth Press.

Freud, S. (1920/1959). *Beyond the pleasure principle.* In T.J. Strachey (Ed.). New York: Bantam Books.

Freud, S. (1935). *A general introduction to psychoanalysis: A course of twenty-eight lectures delivered at the University of Vienna.* In T. J. Riviere (Ed.). New York: Liveright Publishing Corporation.

Gediman, H. K. (1971). The concept of stimulus barrier: Its review and reformulation as an adaptive ego function. *Journal of Psychoanalysis, 52, 243*–257.

Green, B. L., Lindy, J. D., & Grace, M. (1994). Psychological effects of toxic contamination: Informed of radioactive contamination syndrome. In R. Ursano, B. McCaughey, & C. Fullerton (Eds.), *Individual and community responses to trauma and disaster: The structure of human chaos* (pp. 154–178). United Kingdom: Cambridge.

Hartsough, D., Zarle, T., & Ottinger, D. (1976). Rapid response to disaster: the Monticello tornado. In H. Parad, H. Resnik, & L. Parad (Eds.), *Emergency and disaster management* (pp. 363–394). Bowie, MD: Charles Press.

Harvey, M. (1996). An ecological view of psychological trauma and trauma recovery. *Journal of Traumatic Stress*, *9* (1), 3–23.

Horowitz, M. J. (1976). *Stress response syndromes.* New York: Jason Aronson.

Horowitz, M. J. (1986). *Stress response syndromes* (2nd ed.). New York: Jason Aronson.

Horowitz, M. J. (1997). *Stress response syndromes: PTSD, grief, and adjustment disorders* (3rd ed.). New York: Jason Aronson.

Horowitz, M. J., & Kaltreider, N. B. (1979). Brief therapy of the stress response syndrome. *Psychiatric Clinics of North America*, *2*, 365–377.

Janet, P. (1889/1989). L'automatisme psychologique: Essai de psychologie expérimentale sur les formes inférieures de l'activité humaine. Unknown place: Masson Publishers.

Kardiner, A. (1941). *The traumatic neuroses of war.* New York: Paul B. Hoeber Inc.

Krueger, D. W. (1984). Emotional rehabilitation: An overview. In D. W. Krueger (Ed.), *Emotional rehabilitation of physical trauma and disability* (pp. 3–12). New York: Spectrum Publications.

Krystal, H. (1971). Trauma: Considerations of its intensity and chronicity. In H. Krystal & W. G. Niederland (Eds.), *Psychic traumatization: Aftereffects in individuals and communities* (pp. 11–28). Boston: Little, Brown, and Co.

Krystal, H. (1985). Trauma and the stimulus barrier. *Psychoanalytic Inquiry, 5,* 131–161.

Lakoff, G., & Johnson, M. (1980). *Metaphors we live by.* Chicago and London: University of Chicago Press.

Lindy, J. D. (1985). The trauma membrane and other clinical concepts derived from psychotherapeutic work with survivors of natural disasters. *Psychiatric Annals, 15* (3), 153–155, 159–160.

Lindy, J. D. (1986). An outline for the psychoanalytic psychotherapy of posttraumatic stress disorder. In C. R. Figley (Ed.), *Trauma and its wake* : *Traumatic stress theory, research, and intervention* (Vol. 2). New York: Brunner/Mazel.

Lindy, J. D., & Grace, M. (1985). The recovery environment: Continuing stressor versus a healing psychosocial space. In B. Sowder (Ed.), *Disasters and mental health: Selected contemporary perspectives* (pp. 137–149), NIMH monograph, DHHA Publication No. (ADM) 85–1421. Washington, DC: US Government Printing Office.

Lindy, J. D., Grace, M. C., & Green, B. L. (1981). Survivors: Outreach to a reluctant population. *American Journal of Orthopsychiatry, 51* (3), 468–478.

Lindy, J. D., Green, B. L., Grace, M., & Titchener, J. (1983). Psychotherapy with survivors of the Beverly Hills supper club fire. *American Journal of Psychotherapy, 37* (4), 593–610.

Lindy, J. D., & Lindy, D. C. (2004). Countertransference and disaster psychiatry: From Buffalo Creek to 9/11. *Psychiatric Clinics of North America, 27*, 571–587.

Lindy, J. D., Spitz, L., Macleod, J., Green, B., & Grace, M. (1988). *Vietnam: A casebook.* New York: Brunner/Mazel.

Lindy, J. D., & Titchener, J. (1983). Acts of God and man: Long-term character change following disaster. *Behavioral Science and the Law, 1,* 85–96.

Lindy, J. D., & Wilson, J. P. (2001). Respecting the trauma membrane: Above all, do no harm. In J. P. Wilson, M. J. Friedman, & J. D. Lindy (Eds.), *Treating psychological trauma and PTSD* (pp. 423–445). New York: Guildford Press.

Livneh, H. (2009). Denial of chronic illness and disability. Part I: Theoretical, functional, and dynamic perspectives. *Rehabilitation Counseling Bulletin, 52* (4), 225–236.

Luchterland, E. (1971). Sociological approaches to massive stress in natural and man-made disasters. In H. Krystal & W. Niedeerland (Eds.), *Psychic traumatization: After-effects in individuals and communities* (pp. 217–229). Boston: Little, Brown.

Peterson, K. C., Prout, M. F., & Schwarz, R. A. (1991). *Post-traumatic stress disorder: A clinician's guide*. New York: Plenum Press.

Powers, P. S., Cruse, C. W., Daniels, S., & Stevens, B. (1994). Posttraumatic stress disorder in patients with burns. *Journal of Burn Care and Rehabilitation, 15*, 147–153.

Rachman, S. (2001). Emotional processing, with special reference to post-traumatic stress disorder. *International Review of Psychiatry, 13*, 164–171.

Rivers, W. H. R. (1918, February 2). The repression of war experience. *The Lancet*, *1* (2), 173–177.

Stern, G. M. (1976). *The Buffalo Creek Disaster: Story of the survivors' unprecedented lawsuit.* New York: Random House.

Terr, L. C. (1991). Childhood traumas: An outline and overview. *American Journal of Psychiatry, 148* (1), 10–20.

Titchener, J. L., Lindy J. D., Grace, M. C., & Green, B. L. (1981). *Disaster in the crucial year after: The Beverly Hills fire final report.* Cincinnati: Ohio Department of Mental Health.

Van der Hart, O., Brown, P., & Van der Kolk, B. A. (1995). Pierre Janet's treatment of post-traumatic stress. In G. S. Everly (Ed.), *Psychotraumatology: Key papers and core concepts in post-traumatic stress* (pp. 195–210). New York: Plenum Press.

Van der Kolk, B. A. (2004). Psychobiology of posttraumatic stress disorder. In J. Panksepp (Ed.), *Textbook of biological psychiatry* (pp. 335–344). Hoboken, NJ: Wiley-Liss.

Van der Kolk, B. A., Brown, P., & Van der Hart, O. (1989). Pierre Janet on post-traumatic stress. *Journal of Traumatic Stress, 2* (4), 365–378.

Van der Kolk, B. A., McFarlane, A. C., & Van der Hart, O. (1996). A general approach to treatment of posttraumatic stress disorder. In B. A. Van der Kolk, A. C. McFarlane, & L. Weisaeth (Eds.), *Traumatic stress: The effects of overwhelming experience on mind, body, and society* (pp. 417–440). New York: Guilford Press.

Wilson, J. P., & Lindy, J. D. (1994). *Countertransference with the treatment of posttraumatic stress disorders.* New York: Guildford Press.