

dimension; simplistic efforts to quantify trauma ultimately lead to meaningless comparisons of horror. Nevertheless, certain identifiable experiences increase the likelihood of harm. These include being taken by surprise, trapped, or exposed to the point of exhaustion.³ The likelihood of harm is also increased when the traumatic events include physical violation or injury, exposure to extreme violence, or witnessing grotesque death.⁴ In each instance, the salient characteristic of the traumatic event is its power to inspire helplessness and terror.

The ordinary human response to danger is a complex, integrated system of reactions, encompassing both body and mind. Threat initially arouses the sympathetic nervous system, causing the person in danger to feel an adrenalin rush and go into a state of alert. Threat also concentrates a person's attention on the immediate situation. In addition, threat may alter ordinary perceptions: people in danger are often able to disregard hunger, fatigue, or pain. Finally, threat evokes intense feelings of fear and anger. These changes in arousal, attention, perception, and emotion are normal, adaptive reactions. They mobilize the threatened person for strenuous action, either in battle or in flight.

Traumatic reactions occur when action is of no avail. When neither resistance nor escape is possible, the human system of self-defense becomes overwhelmed and disorganized. Each component of the ordinary response to danger, having lost its utility, tends to persist in an altered and exaggerated state long after the actual danger is over. Traumatic events produce profound and lasting changes in physiological arousal, emotion, cognition, and memory. Moreover, traumatic events may sever these normally integrated functions from one another. The traumatized person may experience intense emotion but without clear memory of the event, or may remember everything in detail but without emotion. She may find herself in a constant state of vigilance and irritability without knowing why. Traumatic symptoms have a tendency to become disconnected from their source and to take on a life of their own.

This kind of fragmentation, whereby trauma tears apart a complex system of self-protection that normally functions in an integrated fashion, is central to the historic observations on post-traumatic stress disorder. A century ago, Janet pinpointed the essential pathology in hysteria as "dissociation": people with hysteria had lost the capacity to integrate the memory of overwhelming life events. With careful investigative techniques, including hypnosis, Janet demonstrated that the traumatic memories were preserved in an abnormal state, set apart from ordinary consciousness. He believed that the severing of the normal connections of

memory, knowledge, and emotion resulted from intense emotional reactions to traumatic events. He wrote of the "dissolving" effects of intense emotion, which incapacitated the "synthesizing" function of the mind.⁵

Fifty years later Abram Kardiner described the essential pathology of the combat neurosis in similar terms. When a person is overwhelmed by terror and helplessness, "*the whole apparatus for concerted, coordinated and purposeful activity is smashed*. The perceptions become inaccurate and pervaded with terror, the coordinative functions of judgment and discrimination fail . . . the sense organs may even cease to function. . . . The aggressive impulses become disorganized and unrelated to the situation in hand. . . . The functions of the autonomic nervous system may also become disassociated with the rest of the organism."⁶

Traumatized people feel and act as though their nervous systems have been disconnected from the present. The poet Robert Graves recounts how in civilian life he continued to react as though he were back in the trenches of the First World War: "I was still mentally and nervously organized for War. Shells used to come bursting on my bed at midnight, even though Nancy shared it with me; strangers in the daytime would assume the faces of friends who had been killed. When strong enough to climb the hill behind Harlech and visit my favorite country, I could not help seeing it as a prospective battlefield."⁷

The many symptoms of post-traumatic stress disorder fall into three main categories. These are called "hyperarousal," "intrusion," and "constriction." Hyperarousal reflects the persistent expectation of danger; intrusion reflects the indelible imprint of the traumatic moment; constriction reflects the numbing response of surrender.

HYPERAROUSAL

After a traumatic experience, the human system of self-preservation seems to go onto permanent alert, as if the danger might return at any moment. Physiological arousal continues unabated. In this state of hyperarousal, which is the first cardinal symptom of post-traumatic stress disorder, the traumatized person startles easily, reacts irritably to small provocations, and sleeps poorly. Kardiner proposed that "the nucleus of the [traumatic] neurosis is a *physioneurosis*."⁸ He believed that many of the symptoms observed in combat veterans of the First World War—startle reactions, hyperalertness, vigilance for the return of danger, nightmares, and psychosomatic complaints—could be understood as resulting from