

# THE BODY KEEPS THE SCORE

BRAIN, MIND, AND BODY  
IN THE HEALING OF TRAUMA



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THE **BODY**  
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## CHAPTER 4

# RUNNING FOR YOUR LIFE: THE ANATOMY OF SURVIVAL

Prior to the advent of brain, there was no color and no sound in the universe, nor was there any flavor or aroma and probably little sense and no feeling or emotion. Before brains the universe was also free of pain and anxiety.

—Roger Sperry<sup>1</sup>

**O**n September 11, 2001, five-year-old Noam Saul witnessed the first passenger plane slam into the World Trade Center from the windows of his first-grade classroom at PS 234, less than 1,500 feet away. He and his classmates ran with their teacher down the stairs to the lobby, where most of them were reunited with parents who had dropped them off at school just moments earlier. Noam, his older brother, and their dad were three of the tens of thousands of people who ran for their lives through the rubble, ash, and smoke of lower Manhattan that morning.

Ten days later I visited his family, who are friends of mine, and that evening his parents and I went for a walk in the eerie darkness through the still-smoking pit where Tower One once stood, making our way among the rescue crews who were working around the clock under the blazing klieg lights. When we returned home, Noam was still awake, and he showed me a picture that he had drawn at 9:00 a.m. on September 12. The drawing depicted what he had seen the day before: an airplane slamming into the tower, a ball of fire, firefighters, and people jumping from the tower's

windows. But at the bottom of the picture he had drawn something else: a black circle at the foot of the buildings. I had no idea what it was, so I asked him. “A trampoline,” he replied. What was a trampoline doing there? Noam explained, “So that the next time when people have to jump they will be safe.” I was stunned: This five-year-old boy, a witness to unspeakable mayhem and disaster just twenty-four hours before he made that drawing, had used his imagination to process what he had seen and begin to go on with his life.

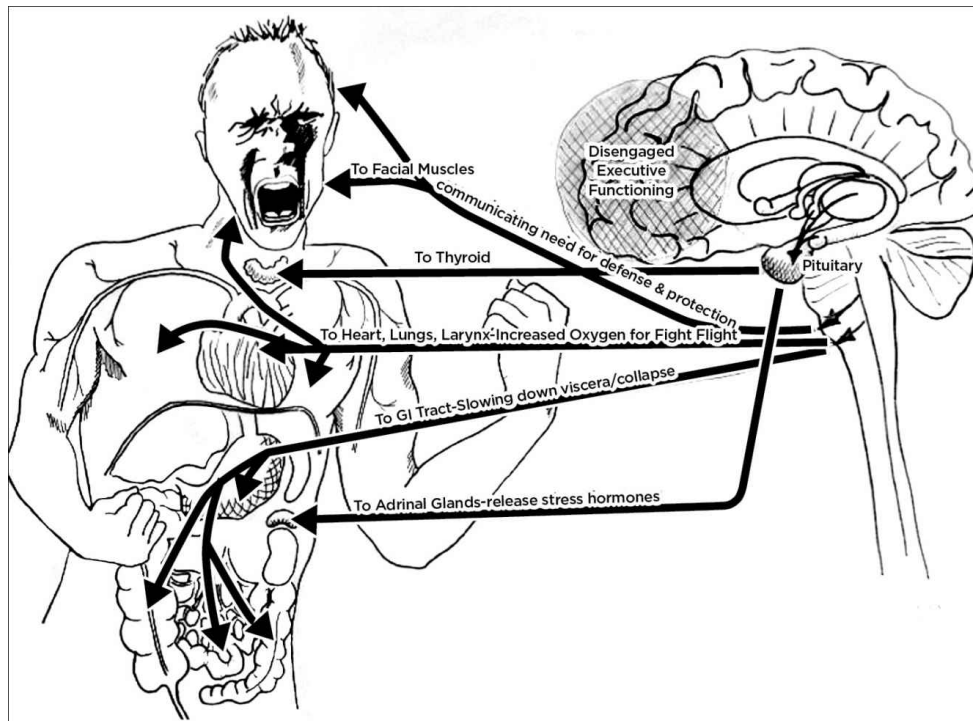
Noam was fortunate. His entire family was unharmed, he had grown up surrounded by love, and he was able to grasp that the tragedy they had witnessed had come to an end. During disasters young children usually take their cues from their parents. As long as their caregivers remain calm and responsive to their needs, they often survive terrible incidents without serious psychological scars.



**Five-year-old Noam’s drawing made after he witnessed the World Trade Center attack on 9/11.** He reproduced the image that haunted so many survivors—people jumping to escape from the inferno—but with a life-saving addition: a trampoline at the bottom of the collapsing building.

But Noam’s experience allows us to see in outline two critical aspects of the adaptive response to threat that is basic to human survival. At the time the disaster occurred, he was able to take an active role by running away from it, thus becoming an agent in his own rescue. And once he had reached the safety of home, the alarm bells in his brain and body quieted. This freed his mind to make some sense of what had happened and even to imagine a creative alternative to what he had seen—a lifesaving trampoline.

In contrast to Noam, traumatized people become stuck, stopped in their growth because they can’t integrate new experiences into their lives. I was very moved when the veterans of Patton’s army gave me a World War II army-issue watch for Christmas, but it was a sad memento of the year their lives had effectively stopped: 1944. Being traumatized means continuing to organize your life as if the trauma were still going on—unchanged and immutable—as every new encounter or event is contaminated by the past.



Trauma affects the entire human organism—body, mind, and brain. In PTSD the body continues to defend against a threat that belongs to the past. Healing from PTSD means being able to terminate this continued stress mobilization and restoring the entire organism to safety.

After trauma the world is experienced with a different nervous system. The survivor’s energy now becomes focused on suppressing inner chaos, at

the expense of spontaneous involvement in their lives. These attempts to maintain control over unbearable physiological reactions can result in a whole range of physical symptoms, including fibromyalgia, chronic fatigue, and other autoimmune diseases. This explains why it is critical for trauma treatment to engage the entire organism, body, mind, and brain.

## **ORGANIZED TO SURVIVE**

This illustration on page 53 shows the whole-body response to threat.

When the brain's alarm system is turned on, it automatically triggers preprogrammed physical escape plans in the oldest parts of the brain. As in other animals, the nerves and chemicals that make up our basic brain structure have a direct connection with our body. When the old brain takes over, it partially shuts down the higher brain, our conscious mind, and propels the body to run, hide, fight, or, on occasion, freeze. By the time we are fully aware of our situation, our body may already be on the move. If the fight/flight/freeze response is successful and we escape the danger, we recover our internal equilibrium and gradually "regain our senses."



AP PHOTO/PAUL HAWTHORNE





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**Effective action versus immobilization.** Effective action (the result of fight/flight) ends the threat. Immobilization keeps the body in a state of inescapable shock and learned helplessness. Faced with danger people automatically secrete stress hormones to fuel resistance and escape. Brain and body are programmed to run for home, where safety can be restored and stress hormones can come to rest. In these strapped-down men who are being evacuated far from home after Hurricane Katrina stress hormone levels remain elevated and are turned against the survivors, stimulating ongoing fear, depression, rage, and physical disease.

If for some reason the normal response is blocked—for example, when people are held down, trapped, or otherwise prevented from taking effective action, be it in a war zone, a car accident, domestic violence, or a rape—the brain keeps secreting stress chemicals, and the brain’s electrical circuits continue to fire in vain.<sup>2</sup> Long after the actual event has passed, the brain may keep sending signals to the body to escape a threat that no longer exists. Since at least 1889, when the French psychologist Pierre Janet published the first scientific account of traumatic stress,<sup>3</sup> it has been recognized that trauma survivors are prone to “continue the action, or rather the (futile) attempt at action, which began when the thing happened.” Being able to move and *do* something to protect oneself is a critical factor in determining whether or not a horrible experience will leave long-lasting scars.