controlled circumstances and by choice, traumatic trance states occur in an uncontrolled manner, usually without conscious choice.

The biological factors underlying these altered states, both hypnotic trance and traumatic dissociation, remain an enigma. The psychologist Ernest Hilgard speculates that hypnosis "may be acting in a manner parallel to morphine."[44] The use of hypnosis as a substitute for opiates to produce analgesia has long been known. Both hypnosis and morphine produce a dissociative state in which the perception of pain and the normal emotional responses to pain are severed. Both hypnosis and opiates diminish the distress of intractable pain without abolishing the sensation itself. The psychiatrists Roger Pitman and van der Kolk, who have demonstrated persistent alterations in pain perception in combat veterans with post-traumatic stress disorder, suggest that trauma may produce long-lasting alterations in the regulation of endogenous opioids, which are natural substances having the same effects as opiates within the central nervous system.[45]

Traumatized people who cannot spontaneously dissociate may attempt to produce similar numbing effects by using alcohol or narcotics. Observing the behavior of soldiers in wartime, Grinker and Spiegel found that uncontrolled drinking increased proportionately to the combat group's losses; the soldiers' use of alcohol appeared to be an attempt to obliterate their growing sense of helplessness and terror.[46] It seems clear that traumatized people run a high risk of compounding their difficulties by developing dependence on alcohol or other drugs. The psychologist Josefina Card, in a study of Vietnam-era veterans and their civilian peers, demonstrated that men who developed post-traumatic stress disorder were far more likely to have engaged in heavy consumption of narcotics and street drugs, and to have received treatment for problems with alcohol or drug abuse after their return from the war.[47] In another study of 100 combat veterans with severe post-traumatic stress disorder, Herbert Hendin and Ann Haas noted that 85 percent developed serious drug and alcohol problems after their return to civilian life. Only 7 percent had used alcohol heavily before they went to war. The men used alcohol and narcotics to try to control their hyperarousal and intrusive symptoms—insomnia, nightmares, irritability, and rage outbursts. Their drug abuse, however, ultimately compounded their difficulties and further alienated them from others.[48] The largest and most comprehensive investigation of all, the National Vietnam Veterans Readjustment Study, reported almost identical findings: 75 percent of men with the disorder developed problems with alcohol abuse or dependence.[49]

Although dissociative alterations in consciousness, or even intoxication, may be adaptive at the moment of total helplessness, they become maladaptive once the danger is past. Because these altered states keep the traumatic experience walled off from ordinary consciousness, they prevent the integration necessary for healing. Unfortunately, the constrictive or dissociative states, like other symptoms of the post-traumatic syndrome, prove to be remarkably tenacious. Lifton likened "psychic numbing," which he found to be universal in survivors of disaster and war, to a "paralysis of the mind."[50]

Constrictive symptoms, like intrusive symptoms, were first described in the domain of memory. Janet noted that post-traumatic amnesia was due to a "constriction of the field of consciousness" which kept painful memories split off from ordinary awareness. When his hysterical patients were in a hypnotic trance state, they were able to replicate the dissociated events in exquisite detail. His patient Irene, for example, reported a dense amnesia for a two-month time period surrounding her mother's death. In trance, she was able to reproduce all the harrowing events of those two months, including the death scene, as though they were occurring in the present.[51]

Kardiner also recognized that a constrictive process kept traumatic memories out of normal consciousness, allowing only a fragment of the memory to emerge as an intrusive symptom. He cited the case of a navy veteran who complained of a persistent sensation of numbness, pain, and cold from the waist down. This patient denied any traumatic experiences during the war. On persistent questioning, without formal use of hypnosis, he recalled the sinking of his ship and the many hours he had spent awaiting rescue in the icy water, but he denied having any emotional reaction to the event. However, as Kardiner pressed on, the patient became agitated, angry, and frightened:

> The similarities between the symptoms of which he complained . . . and his being submerged in cold water from his waist down, were pointed out to him. He admitted that when he closed his eyes and *allowed himself to think* of his present sensations, he still imagined himself clinging to the raft, half submerged in the sea. He then said that while he was clinging to the raft, his sensations were extremely painful and that he thought of nothing else during the time. He also recalled the fact that several of the men had lost consciousness and had drowned. To a large extent, the patient obviously owed his life to his concentration of the painful sensations occasioned by the cold water. Hence the symptom represented a . . . reproduction of the original sensations of being submerged in the water.[52]