

# Decoding Traumatic Memory Patterns at the Cellular Level

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## INTRODUCTION

Virtually every behavioral pattern exhibited during routine activities of daily living results from learned data which is stored, or encoded, as cellular memory. Most of those behavioral patterns are benign, in that they do not contribute significantly to cellular destruction (i.e., disease). Some of those patterns, however, are expressed as significant reflections of traumatically encoded cellular information. In a condition such as Post Traumatic Stress Disorder, it must be kept in mind that the “problem” is an expression of traumatically encoded information at the cellular level. In order for therapy to have lasting effect, it is imperative that a primary focus of intervention involves isolation and decoding of the causative traumatic cellular memory pattern.

## HISTORICAL BACKGROUND

In 1904 the Russian physiologist Ivan Petrovich Pavlov won the Nobel Prize for his research on the digestive process. For the next 30 years, Pavlov devoted intense study to brain function. He would later become most well known for what he described as the “conditioned reflex.” Pavlov’s research led him to conclude that all acquired habits, and even higher mental activity, depend on chains of conditioned reflexes. The conditioned reflex works by association. Rather than a simple stimulus-response mechanism, the conditioned reflex is associated with memory. For example, during the shock and stress of an event that is perceived as a physical or emotional threat, a special complex of hormonal messenger molecules are released by the limbichypothalamic- pituitary-adrenal system. These substances encode all the external and internal sensory impressions of the perceived threat as cellular memory. This initial stimulus, or memory, can later act as a catalyst for the same reflex response that was initiated by the perceived threat. The reflex or response can then become conditioned to produce the same basic reaction each time the memory of the initial threat is activated, regardless of the stimulus. This process is known as stimulus generalization, and it becomes a key element in understanding, and treating, victims of trauma.

## CASE EXAMPLE

For a typical case history that can help us understand the process of conditioned reflexes, and the importance of decoding those reflex patterns at the cellular level, consider the following example. A 42 year old female presents with complaints of frequent nightmares about being raped. She has recently moved into a neighborhood where a serial rapist has been active. Prior to moving to this area, she had experienced occasional nightmares of a sexual nature, but none so graphic as to lead her to therapy. Her background reveals two failed marriages and several unsuccessful relationships. The reason given by the client for the poor relationships and failed marriages is sexual incompatibility, which she explains as being the result of her fear of being harmed during the act of sexual intercourse. Physically the client complains of frequent urinary tract infections, low back pain, and headaches. All of her physical symptoms manifest in conjunction to interpersonal relationships, and more recently, to the increasing nightmares.

The client’s family history is significant in that she remembers her step-father as being very abusive. When probed regarding her relationship with her step-father, the client reveals that for years she has had an increasing fear that she may have been sexually abused by him. She states that this fear began shortly after her first marriage, which was of short duration due to her first husband’s abusive nature. Her second marriage, and intervening relationships are also described as being abusive in nature, and accompanied by increasing fear that her problems may stem from her thoughts about being sexually abused by her step-father.

## **MECHANISM OF ACTION**

In the scenario described above, the initial stimulus can be understood to be the client's fear regarding possible sexual abuse by her step-father. Understanding that fear, and subsequent symptoms, as the initial reflex mechanism, we can see how that reflex could easily become "conditioned" when subjected to other stimuli that served to trigger the traumatic memory patterns associated with the perception of having been abused as a child. In this, and many cases with similar histories, the trigger which initiated the trauma response is a thought about a perceived event. While the actual event may or may not have occurred, the client's thoughts about the events are the stimulus that ultimately result in the physical/emotional reflex action as expressed through the mind-body complex. The reflex/response mechanism then becomes "conditioned" via stimulus generalization. That is, any subsequent event that is perceived by the mind-body complex as being similar to the initial sensitizing event, activates the same, or similar response through the mind-body complex.

## **TREATMENT-RELATED ISSUES**

In dealing with survivors of trauma, the "conditioned reflex" takes on tremendous significance when we consider that all of the information associated with the trauma is encoded at the cellular level. While it is true that each individual will respond to trauma differently depending upon the degree to which the traumatic situation is acknowledged and reviewed within oneself, the fact remains that all of the "memory" associated with the trauma is encoded cellularly, and unless decoded, that cellular memory can serve as the nucleus for psychological and/or psychosomatic illness via the "conditioned reflex." The more frequently the memory is activated via stimulus generalization, the greater is the effect on the mind-body complex, and the more likely the individual is to express the various imbalances seen in Post Traumatic Stress Disorders.

With the expanding view of mind-body therapies over the past decade or two, a number of therapeutic tools have come to light that appear to serve as methods for decoding, or perceptually reframing, traumatically encoded cellular memory patterns. Various types of meditation, guided imagery, hypnosis and other mind-body techniques are showing tremendous promise in helping individuals create effective coping mechanisms relative to perceived, or actual, traumatic memories. By reestablishing the ability to cope with the traumatic memories, the conditioned reflex mechanisms apparently become decoded at the cellular level thus discharging the stimulus generalization effect on cellular function. How this actually occurs is not completely understood, but it is theorized that reviewing the various circumstances of a traumatic event during hypnosis, meditation etc. may reactivate the stress-released hormonal substances that originally encoded that event at the cellular level. The cellular memory is then brought into contact with normal cognitive function thus allowing the traumatic memory to be therapeutically reframed.

## **CONCLUSION**

While our understanding of the mind-body complex may be in its infancy from a scientific perspective, it is becoming increasingly clear that the neurochemistry of emotion is a key factor that must be considered if any therapeutic intervention is to have lasting effect. All memory is encoded at the cellular level. Any mind-body procedure that beneficially alters destructive cellular memory patterns should be carefully evaluated as to its value in management of Post Traumatic Stress Disorders and other psychosomatic and/or psychological conditions.