

ORIGIN, DIAGNOSIS AND  
TREATMENT OF CHRONIC PAIN  
AND SOMATIZATION DISORDERS

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## **PAIN AND SOMATOSENSORY SYMPTOMS**

Every doctor has seen patients with physical pain. We accept it as a consequence of the disease/trauma process and rarely give pain much thought except how to alleviate the suffering caused by it. We generally think of pain as peripheral receptors transmitting signals to the brain where it is experienced. Thus, for most of us, pain is end organ driven. That is, if you have back pain, the problem is considered to be in the back; distress in the pelvic area must originate in the pelvis and so on. Indeed, Western medicine names these problems by the end organ; thus, we have “lower back pain” and “pelvic floor dysfunction.” This model is called physicalism. If a patient experiences a physical problem, the problem must have a physical origin, generally at the location of the problem.

We know the pathways, the modulators and the receptors and neurons that cause us to experience pain

and yet we cannot effectively treat 40-60% of chronic pain and other symptoms. Why should this be? The answer is that we are often treating the wrong thing. This essay is about pain and other sensations that don't go away, what we call psychogenic pain and somatization. What are the criteria that we can use to define psychogenic pain and somatization?

## Criteria for Psychogenic Pain And Somatization

Absence of brain lesions  
No history of recent injury  
No evidence of a peripheral lesion  
Sensation non-anatomical in distribution  
Poorly responsive to traditional modalities  
An emotional event associated with symptoms

Individuals who suffer with this type of distress are routinely unaware of its origin since there are no obvious clues as to its cause. The symptoms often interfere with work and relationships, and lead to many visits to different health care providers. Stress often worsens the symptoms.

Some of the many symptoms that can occur with psychogenic symptoms include:

- Abdominal pain
- Amnesia
- Back Pain

- Bloating
- Chest pain
- Diarrhea
- Difficulty swallowing
- Dizziness
- Headaches
- Impotence
- Joint pain
- Nausea and sometimes vomiting
- Pain during intercourse
- Pain during urination
- Painful menstruation
- Pain in the legs or arms
- Palpitations
- Paralysis or muscle weakness
- Shortness of breath
- TMJ
- Vision changes

That chronic pain and somatosensory sensations can be psychogenic in origin is hard for most to comprehend. Indeed, telling someone that their symptoms are in their head can often make them angry. For them, as well as those treating their pain, it makes sense that the cause of pain or tenderness or other somatosensory experience must arise somewhere near the painful or tender area but this is not always true.

## Origin

The idea that pain/somatosensory sensations could be of psychogenic origin dates back to Charcot, Freud and Janet. In the late 19<sup>th</sup> century symptoms without organic cause were described as hysterical, that is psychological in nature (Tallis). These scientists/physicians believed that symptoms observed were manifestations of previous events, dissociated from conscious awareness.

## The Early Thinkers

- *Charcot*-Pain as a sign of 'hysteria' was described as pain in different parts of the body without cause
- *Freud*- Hysteria originates in the subconscious
- *Janet*- Hysteria has a traumatic origin

In short they were symptoms derived from a subconscious encoding. These brilliant observers of the human condition laid the ground work for Freud's most seminal and important contribution...that part of our experiences may be stored in areas where we are

unable to access them by conscious thought. Freud felt that somatic pain of psychogenic origin was not CREATED by the neurosis, but merely used, increased and maintained by it. From my experiences and that of others there is always a genuine organically founded pain present at the start. That is to say something happened during the traumatizing event that localized the pain. This should cause us to seek out the originating event.

In 1961 Walters presented a paper entitled Psychogenic Regional Pain Alias Hysterical Pain. He proposed the name psychogenic regional pain to describe the findings in his patients. He describes 430 patients that ranged in age from 20-60. The ratio of men to women was 3:7. Of the 430 patients, 185 had pain

## WALTERS 1961

Psychogenic Regional Pain, Alias Hysterical Pain  
He described Psychogenic Regional Pain (PRP)

430 cases

M:F 3:7

185 head and neck      112 lower back and limbs

133 chest and upper limbs

that involved the head and neck, 133 chest and upper limbs and 112 the back and upper limbs. Walters's description of the quality of the pain included squeezing and twisting. The site of the pain did not make anatomical sense to Walters, which is why he called it regional pain.

Walters also described physical somatosensory symptoms that included burning, aching and shooting pain, all non-anatomical distribution, as well as motor deficits, such tenderness and sensory deficits.

John Sarno in his books on back pain describes what he calls Tension Myositis Syndrome (TMS). He believes that this is a psychogenic psychosomatic disorder. Here, the pain serves a psychological purpose, hence the term psychosomatic. Chronic pain, according to Sarno, is to prevent emotions from rising to the surface. The emotion that Sarno is concerned about is rage. He feels that the pain serves a protective purpose since the repressed emotions, should we become aware of them would in some way be dangerous to normal existence or be too painful to deal with.

## Tension Myositis Syndrome

- DR. JOHN SARNO
- Pain is protective, prevents expression of negative emotions.
- Psychosomatic pain is due to physical changes in the body due to the unconscious mind.
- TMS is psychogenic psychosomatic

*My father was an angry man. Things, small things could set off his rage and I would be beaten. As a very young child, I remember him chopping wood with an axe and he had a look on his face (I thought he was thinking about something that mad him mad) that frightened me. I was afraid to express my anger toward him.*

*In 1979, at the age of 10, I went to have an operation on my left foot. A bone needed to be fused to prevent the development of arthritis. Two weeks before surgery, I fell out of a tree house, breaking my nose and knocking myself out. My brother, who thought I was dead, ran across the field to get my father. I came to and was evidently screaming and I remember my father telling me*



*that he stopped running one he heard my screams. I was taken to the hospital and just dropped off. I had two black eyes and a broken nose.*

*The day of the foot surgery I was given a pill that me very drowsy and I awoke alone in a dark recovery room full of pain. I'm not sure how long I spent there. I do know that they would not medicate me for the pain because of my age. This enraged me but I was helpless. After that week I was dropped off at boarding school with my foot in plaster.*

*Since that time, till today, 30 years later, I cannot touch the scar on my foot or even look at it. If someone talks about it, it begins to hurt and I feel nauseated. If I have bare feet, I have to roll up my pants leg so that the bottom of the pants won't rub on the scar. I have spent agonizing sessions in therapy trying to talk about the scar and why I feel this way. Trouble is, to talk about it is excruciatingly painful. I do not eat before a therapy session because I feel sick when talking about it. I have even vomited. Even to write about it is painful.*

Dr. Robert Scaer has described another process in detail in his book, *The Body Bears the Burden*. Dr. Scaer was a director of a private rehabilitation center. He struggled with the inconsistencies between physical injury and the resulting diffuse and disabling symptoms experienced by patients after a motor vehicle accident.

## The Body Bears the Burden

- FREEZE RESPONSE IS NECESSARY FOR ENCODING
- A SENSE OF HELPLESSNESS/HOPELESSNESS IS ESSENTIAL FOR ENCODING
- ALL ASPECTS OF THE ENCODED EVENT ARE STORED
- PAIN IS STORED BUT IS NOT EXPERIENCED BY CONSCIOUS REACTIVATION OF THE EVENT

How, he observed, could a professional race car driver be knocked unconscious and suffer minimal if any lasting effects while another, rear ended at 10 miles per hour, developing what is called whiplash, with damage only to his bumper be cognitively disabled three years later. For him something did not make sense. He goes on to explore what Peter Levine describes as a freeze response, the inability to move, to escape, after being activated by a frightening event that occurs during a traumatizing event. It is this inability to release the energy stored in the body that leads to symptoms. For Scaer, pain and other symptoms are co-encoded along with the traumatization.

Psychogenic pain (with and without somatosensory changes) is encoded during traumatization. Thus, we call all pain/somatosensory symptoms centrally encoded as psychogenic in origin. This piece describes how these are co-encoded with a traumatizing event, only to appear later, sometimes without apparent precipitating cause. This is followed by a discussion of how, by depotentiating the encoded trauma, the pain can be permanently removed.

## ENCODING A TRAUMA



**REQUIREMENTS FOR TRAUMATIZATION**

Traumatization occurs under certain conditions. They require an **event**. These events can be first hand second hand or even third hand accounts. As long as the mind can view it, the event has the potential to produce a traumatization.

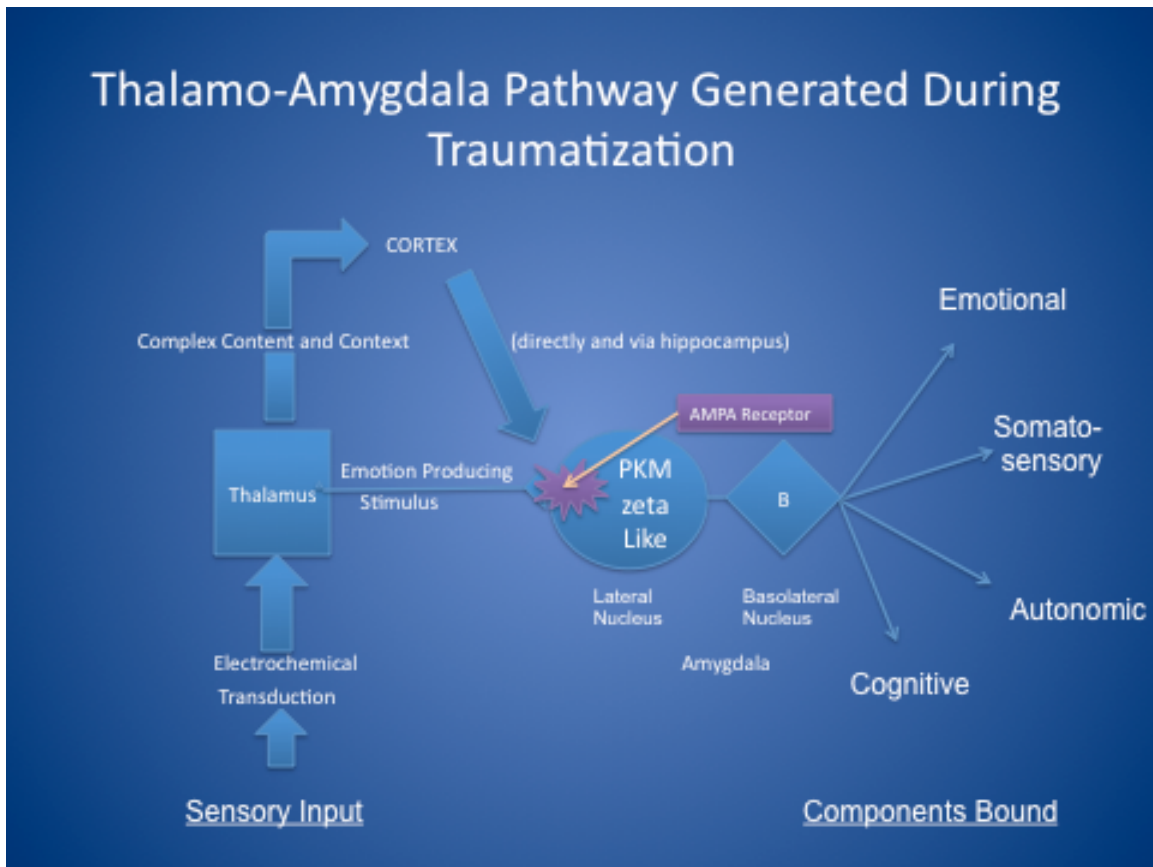
The event must have **meaning** for the individual. Thus, I had a patient who was molested as a child. Someone playfully patted her on the behind and she started screaming and broke down crying. This was because the event had meaning to her; it was already part of a trauma. An event must have meaning to produce intense emotions.

The **landscape** of the brain is the neurochemical state at the time of the event. It is reflected in one's resilience or vulnerability to traumatization.

Finally, there is perceived **inescapability**. The individual does not see a way out. This can be because they hear bad news, are in a car accident or any circumstance where nothing can be done at that moment. If an escape can be seen at that moment, traumatization does not occur.

Encoding of a trauma occurs as a result of potentiation of glutamate AMPA receptors in the lateral nucleus of the amygdala (See Figure 1). It arises from the post-synaptic neuron in the thalamo-amygdala pathway. It is here that AMPA receptors are potentiated and remain on the surface of the neuron, held there by an enzyme

like phosphokinase M zeta. It is this enzyme (yet to be described) produced at the moment of traumatic encoding that maintains the pathway from the amygdala to the rest of the brain so as to produces a traumatization.



## ENCODING PAIN

When a traumatic event is encoded it also encodes the other components of the event.

## **Components of a Traumatic Memory**

**Emotional**- the affective response to the event

**Autonomic**- the sensations generated by the body

**Somatosensory**- the sensation experienced by the body as in pain, tingling and numbness

**Cognitive**- both conscious and subconscious aspects

During a traumatizing event involving fear, rage or other strong emotion, pain perception can be inhibited by norepinephrine released from the locus coeruleus into the nociceptive (pain-perceiving) portion of the central nucleus (Ce) of the amygdala. It is here, during an emotion-generating event, that pain signals arriving from other parts of the brain are modulated. This is clearly seen under battle conditions where pain from wounds generated during battle are not felt until later. Several lines of evidence point to norepinephrine in the amygdala as the key player in pain perception.

### **Amygdala, Norepinephrine and Pain**

- Elevated levels of norepinephrine in the amygdala diminish pain.
- Gabapentin (a neuropathic pain medication) increases norepinephrine.

- Norepinephrine re-uptake inhibition (which increases norepinephrine) decreases pain.
- Recall of an emotionally arousing event increases norepinephrine in the amygdala.

Downstream of this AMPA receptor the components of the trauma are bound and associated with recall of the event, either by conscious recall or inadvertent subconscious reminders.

As mentioned above, during a traumatizing event, injuries may not be felt. Later, conscious recall of the traumatizing event activates the Ce of the amygdala causing the release of norepinephrine. Just as in the encoding moment, the somatic pain experience is not elicited due to the release of norepinephrine (NE). Thus, thinking about the event does not cause pain. This is what makes psychogenic pain so confusing.

## **Conscious Activation**

Recalled Event → Thalamus → ↑ NE → Amygdala → No Pain

Nonetheless, the somatic components (pain, burning, temperature alterations, and tenderness) occurring in conjunction with a traumatic are stored in the brain to be later experienced by exposure to subconscious stimuli. These subconscious stimuli do not produce an emotional response and the release of norepinephrine does not occur. This allows the co-encoded pain to be experienced.

## **Subconscious Activation**

Complex Content/Context → Cortex/Hippocampus →

No ↑ NE → Amygdala → Pain

*Pamela presented to my office with a three-month history of back of hand pain. On examination there were no wounds, nor was there a recent history of trauma. The hand was tender to touch. Most, if not all physicians would have referred her for an MRI and to a hand*



*specialist. However, on further questioning it was discovered that 15 years prior she had been in a taxi accident where the cab rolled over and her hand swung wildly hitting the side of the door. At the time of the accident she did not experience the pain until after it was over. The pain she report began when she decided to return to London to live.*

## **Treatment**

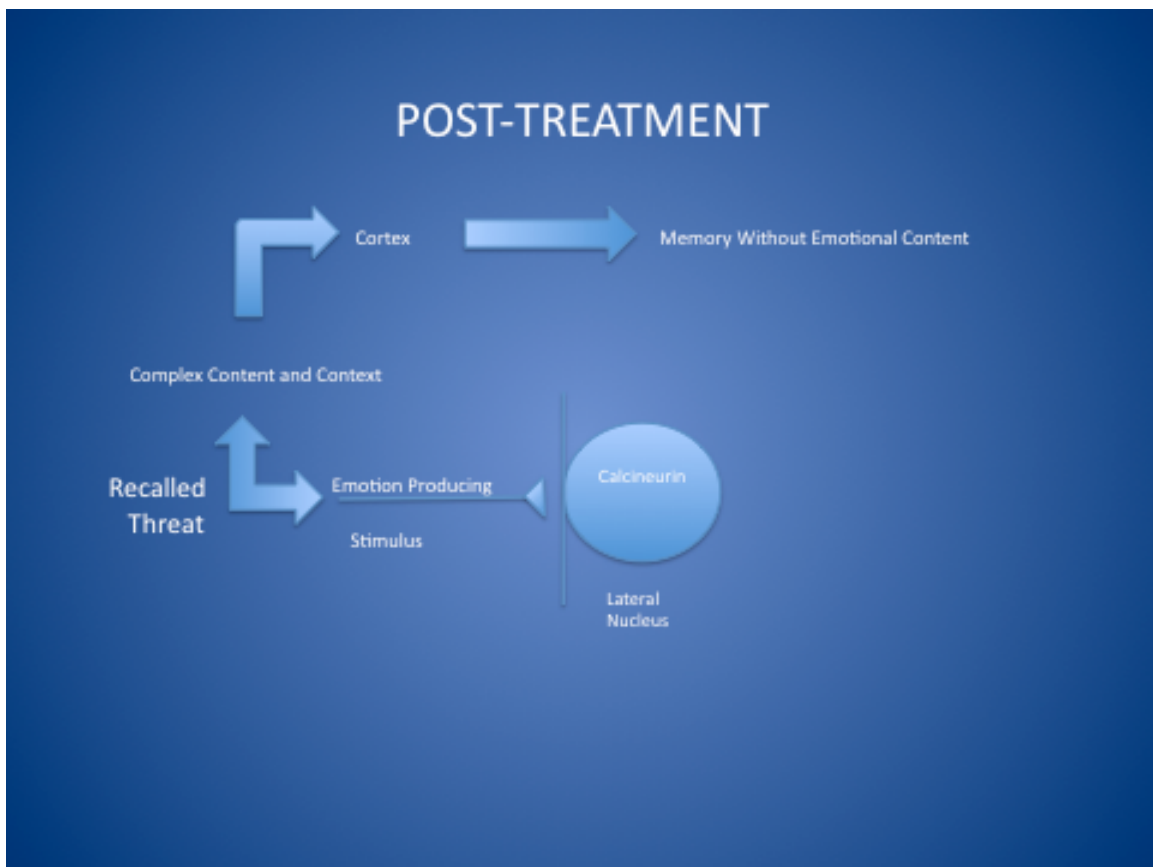
John Sarno states that people have been cured of painful conditions merely by reading his book. I completely agree with this assessment if the pain arises from encoded helpless anger. It is the sense of inescapability that causes the pain and recognizing an escape (that this pain is protecting me from feeling angry and if I find a way to allow the anger to escape, the pain is no longer needed) causes the pain to disappear. At the time of rage, neck, lower back, and jaw muscles are tense and this tension becomes encoded producing pain. For Sarno, recognizing that the pain is a symbolic representation often allows it to disappear. If not, then he proposes a psychotherapeutic approach to find its encoding moment.

The approach we use is an exposure therapy but with a different post-exposure process. Extinction therapy or systematic desensitization respectively involves the exposure to a stimulus that either predicts fear or is the feared object itself. By either non-reinforcement or habituation the stimulus loses its ability to produce a fear response. In short a new response is learned. However, the response can be recalled rapidly by a variety of means. This suggests that the old pathway that produced the fear response is intact.

In this therapy we activate the glutamate receptors by imaginal exposure. This is the art of havening, to find the encoding moment of the pain. Once found we immediately, apply a variety of sensory inputs, in particular, havening touch. This touch produces a hard-wired extrasensory response in the brain. An extrasensory response is one that arises unbidden from sensory input by the action of peripheral receptors. This response causes an electrochemical change in the brain. It causes a rise of serotonin, and a decrease in cortisol and causes the production of a 1-2Hz delta wave in the amygdala. This activates calcineurin, a phosphatase, in the post synaptic neuron that depotentiates the activated glutamate receptors and causes the lipid membrane bound glutamate receptor associated with the stimulus input to become internalized. The plug is pulled.

## Depotential of AMPA Receptors

Thalamus → Activation of AMPA Receptors in the Lateral Nucleus of Amygdala → Havening Touch → Generation of 1-2 Hz Delta wave → Release of Calcineurin in Lateral Amygdala → Depotential of AMPA Receptors → Pain Abolished.



Any associated stimulus now cannot propagate and the experience of pain along with the emotional, somatosensory and part or the entire event that had been encoded with the trauma is now inaccessible.

## Further Reading

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