

Homayoun Shahri

Rewriting Traumatic Memories during the Reconsolidation Phase

**Abstract**

In this paper, I will discuss a short review of traumatic memories based on neuroscience. I will present a new technique, which is based on neuroscience, that may rewrite the traumatic memories during reconsolidation. The presented technique is based on addition of new information at the time of recall of the traumatic memories which may result in re-encoding of these memories during the reconsolidation phase. The resultant rewritten memories seem to last for a very long time.

**Introduction - A neuroscience perspective**

Memory, in its most general sense, can be defined as what we consciously recall from past events. But memory is more than what we consciously recall from the past (Siegel, 1999).

The human memory formation is associative, which means that new information is remembered better if it is associated with previously encoded events or memories. Because of the associative nature of memory, encoding can be improved when new information is associated with other information already encoded in long term memory.

LeDoux (1996, 2002) argues that the only memories that are unchanged are the memories that have never been recalled. When a memory is recalled it will go through changes (associativity). LeDoux (1996, 2002) further argues that this gives us the opportunity to modify memories during the recall and reconsolidation.

In a recent study, researchers in LeDoux's laboratory, Daniela Schiller, et al (2009) indicated that during reconsolidation, memories go through a period of instability after being recalled. They provide evidence that traumatic memories can be associated with benign information provided during the reconsolidation window. They show evidence that, as a consequence of this association, fear responses to traumatic memories are no longer expressed.

**Re-encoding of traumatic memories during reconsolidation**

My approach for potential rewriting of traumatic memories is based on adding new information at the time of the recall of the traumatic memory which can then result in its re-encoding during reconsolidation.

### **Application of the technique**

In working with clients' traumatic memories, I sit across from them (Figure 1-a). When they discuss their presenting issue, I usually ask them about their earliest memories of a time that they felt this same way. Due to associativity of memory, the old traumatic memories are primed for recall and have a high probability of being remembered compared to irrelevant ones. I will then instruct the clients to imagine the feelings states and posture of themselves at the time of the recalled memory and place their imagined self slightly to their left (to activate their right hemisphere) and in between themselves and I (Figure 1-b). Activation of the right brain is important in keeping the clients in their feelings. It can be readily observed that if we look to the right, while not moving our head, it is easier to think about logical matters, but not emotional; while if we look to the left, we can think of emotional matters but it is difficult to think of logical ones.

I will then ask clients to take in and stay in contact with me and be fully aware of their connection with me. If clients don't fully understand how to stay in contact with me, I ask them to look into my eyes and be aware of the distance between us. I will then instruct the clients to quickly look at their imagined self on their left for a fraction of a second (depending on the trauma, this period may be adjusted) and then come back to their connection with me. I also ask them to not think at all (to keep them more in their limbic system), and to simply stay in contact with me and periodically look at their imagined self. I ask clients after a couple of minutes whether their imagined self has changed in any way. We will continue the exercise until a positive change occurs (usually a few to several minutes). When the change has occurred, I can

usually observe it on their face. When these early memories, which are the blueprint for many future behaviors, are re-encoded and rewritten, clients generally feel more free and do not function from their early traumas as often.



*Figure 1. (a) Staying with the therapist and (b) imagining the traumatized self to their left*

### References

LeDoux, J. (1996). *The emotional brain*. New York, NY: Simon & Schuster.

LeDoux, J. (2002). *Synaptic self*. New York, NY: Penguin Books.

Schiller D., Monfils M.H., Raio C.M., Johnson D.C., LeDoux J.E. & Phelps E.A. (2009). Preventing the return of fear in humans using reconsolidation update mechanisms. *Nature* 463: 49-53.

Siegel, D. (1999). *The developing mind*. New York, NY: Guilford Press.

## **BIOGRAPHY**

Homayoun Shahri, Ph.D., M.A., CBT, LMFT, received his PhD in electrical engineering from Lehigh University in 1990, and his MA in clinical and somatic psychology from Santa Barbara Graduate Institute in 2012. He is a licensed marriage and family therapist, and has a private practice in Irvine, CA, USA. Homayoun is a Certified Bioenergetic Therapist (CBT), and is a member of the International Institute of Bioenergetic Analysis (IIBA). Homayoun is a member of the United States Association of Body Psychotherapy (USABP), and is on the peer review board of the IBPJ.