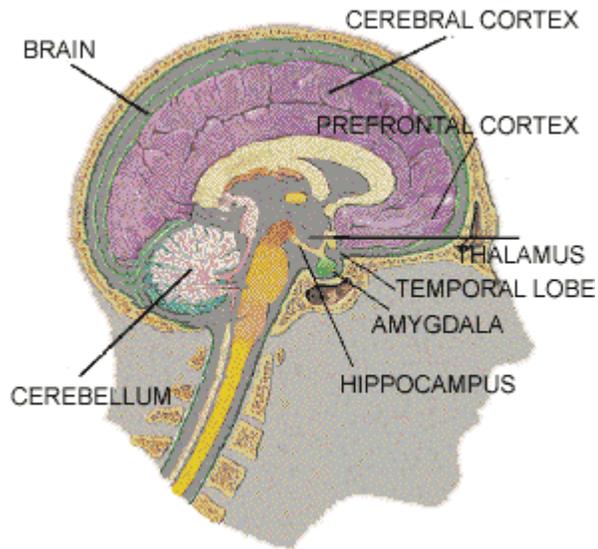


Trauma and the Brain

H. Norman Wright

The brain. Unique in its design, purposeful in its creation and wonderfully made (Ps. 139).

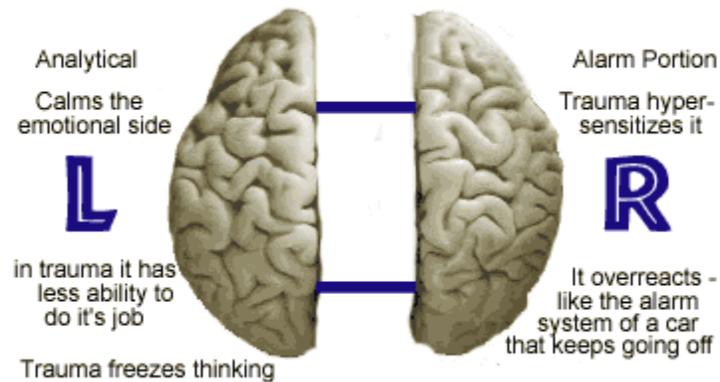


This is what we know at the present time about our brain:

The left side has its own unique functions as does the right side. The thinking pattern of the left side of the brain is analytical, linear, explicit, sequential, verbal, rational, and goal-oriented. It holds your beliefs, values and expectations. This hemisphere controls language and reading skills. It will gather information and process it logically in a step-by-step fashion. (Some individuals are extremely left brained in their approach to life. And some seem to go through life reflecting just the right side. Others have a mixed dominance).

The right side is spontaneous, intuitive, emotional, non-verbal, visual, artistic, and spatial. It's a picture album. The left does the thinking and the right side has the pictures. It stores memories as pictures. Many are imbedded with energy and power and so just talking about the pictures doesn't remove it. The language here is not words but a

picture. This is where Post Traumatic Stress Disorder (PTSD) pictures come from. And traumatic memory is like a series of still snapshots or a silent movie. There is no music or words.¹ This side processes patterns of information. It's the host of our emotions.



Another part of the brain (hippocampus) is analytical and *calms* down the emotional part of the brain: It analyzes things and puts things in perspective – “No, a large person doesn’t mean he’ll hurt me. He’s just large and eats a lot.” And it remembers where you are and what you are doing when fear comes.

Left brain and right brain have to pull together, otherwise just one side is in charge.

Trauma freezes thinking

It’s as though the left side (the cognitive) and the right side (the emotional) are disconnected from one another. Usually our body and emotions and thoughts are all connected. Trauma separates these from one another. It splits them up. You may have vivid graphic thoughts about what happened but no emotion. Or you could experience intense emotions but without the thoughts or actual memories. As one man said, “I feel like my brain was disrupted and one part is transmitting the AM and the other the FM. Sometimes there are holes in my memory like a slice was taken out. Other times I can’t get those intrusive unwanted memories to stop. I want them evicted! I can’t remember what I want to remember and I can’t forget what I want erased.” This struggle is shared by many.⁷

This is disassociation, a separation of the elements of the trauma experience which reduces the impact of the experience.⁸

Trauma can be intrusive. It interprets your current life. It can also constrict and limit your life as well. Sometimes you alternate between the two. You find yourself caught between amnesia or reliving the trauma, between floods of intense, overwhelming feeling or arid states of no feeling whatsoever, between irritable, impulsive action and complete inhibition of action.⁹

Traumatized people have alterations in their brain. The hippocampus is reduced in size. Memory is affected—lapses, deficits in verbal recall, short-term deficits.

The frontal cortex ability is decreased. *Less ability* to do left brain functions – It can't distinguish a real threat from a false threat. It also limits people from putting into words what they feel. *They may think there is danger when there isn't danger.* Because the section of the brain that is supposed to analyze this isn't working.

The right section, the alarm section, reacts *too much. It's activated to danger when there isn't any.* It's like an alarm system of a car that keeps going off and staying on when there's no danger. And the owner with the key isn't around to turn it off. With a brain scan there is a lot of lighting up on the right side and very little on the left.¹⁰ So if they don't remember or their stories don't line up... Everyone is a bit ADD after a trauma.

Intense stress or trauma is accompanied with the release of hormones. A nerve running out of the brain to the adrenal glands triggers adrenaline and noradrenaline secretions. Adrenaline and noradrenaline surge through the blood stream causing the heart to beat faster and prime the body for an emergency. Then these hormones activate receptors on the vagus nerve running back to the brain. This causes the heart to continue to beat faster, but also signals various parts of the brain to supercharge that intense emotional memory. These hormones assist the individual to mobilize in the event of emergency. They also sweep through the body, return to the brain, and trigger the release of more equally powerful hormones (cortisol, epinephrine and norepinephrine,

oxytocin, vasopressin and endogenous opioids). This flood of hormones produces the “fight-flight” response in most people. When a trauma hits up to 70% of your brain-bound oxygen is diverted into your muscles to propel you somewhere else.¹¹ But for a few individuals, it produces a “freeze” mode. In this instance, all those hormones are rushing through the body and have no appropriate physical response. The stressor has paralyzed the victim. The problem comes when the next emergency arises. The physical, biological body remembers, and responds, the same way it did before, without any decision making process from the lessons learned by the intellectual brain in the last emergency.¹² And traumatic events are remembered differently than non-traumatic events. They’re free-floating in time. It’s experienced as “now” and not just a past event.¹³

¹ Judith Herman, M.D., *Trauma and Recovery* (Grand Rapids, MI: Baker Books, 1992), p. 175.

² Taken from a presentation by Jerry Mungadze, Ph.D. AACC World Conference, Aug. 2001.

³ Judith K. Acosta and Richard L. Levenson, Jr., “Observations from Ground Zero at The World Trade Center in New York City, Part II: Theoretical and Clinical Considerations, *International Journal of Emergency Mental Health*, Volume 4, Number 2, Spring 2002, adapted, pp. 120, 121.

⁴ Katy Butler, “The Biology of Fears,” *Networker Magazine*, July/Aug 1996, pp. 40-46.

⁵ Francine Shapiro and Margot Forest, *EMDR* (New York: Basic Books, 1997), p. 49.

⁶ Sheldon Kopp ** Need more information

⁷ Herman, p. 47. adapted.

⁸ Babette Rothschild, *The Body Remembers—The Psychophysiology of Trauma and Trauma Treatment* (New York: WM Norton & Co, 2000), p. 65, adapted.

⁹ Herman, p. 47.

¹⁰ Diane Langberg, “Coping with Traumatic Memory,” from a presentation at the TRIP conference.

¹¹ Paula Smith, Ph.D., International Board Certified Trauma Specialist, “Secondary Survivors”, future article in *Marriage and Family—A Christian Journal*. Published by the American Association of Christian Counselors.

¹² Paula P. Smith, Ph.D, International Board Certified Trauma Specialist, unpublished paper.

¹³ Rothschild, p. 66, adapted.

**Be sure to see the article “Roots of Violence May Lie in Damaged Brain Cells,” by Judy Foreman, *Los Angeles Times*, Monday April 29, 2002: Health Section. Changes in the brain similar to the effect of trauma may prompt violence.