

APPLYING THE BRAKES By Babette Rothschild

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Much as we don't like to admit it publicly, it's an open secret among therapists that the road to recovery from trauma can be fraught with clinical missteps. In the past few years, I've frequently been consulted by highly competent colleagues who were dumbfounded by the speedy decline of clients contending with traumatic memories.

Eight of these clients included a nurse, a businesswoman, a salesman, a therapist and other men and women who'd functioned relatively well prior to therapy. Yet after attempts to address their traumatic pasts (including rape, mugging, childhood abuse, and household fire), three were hospitalized, two went on disability, and the rest endured debilitating flashbacks, panic attacks, or other symptoms of dysfunction.

All the therapists involved were experienced and well trained. Each one favored a different, theoretically sound, therapeutic modality (psychodynamic psychotherapy, EMDR, body psychotherapy, and cognitive-behavioral). None was irresponsible. So what exactly went wrong?

In each instance, I eventually discovered, traumatic material was addressed before the client was equipped to manage it. These therapists were proceeding in a manner consistent with the usual aim of psychotherapy: helping a client open up. They knew very well how to call the genie of traumatic experience out of the bottle, but as is all too common, they didn't know how to get the genie back in.

My approach to trauma work, which is more cautious, is rooted in an experience I had in college. A friend asked me to teach her to drive - in a new car my father had just given me. Sitting in the passenger seat next to her as she prepared to turn on the ignition, I suddenly panicked. I quickly realized that before I taught her how to make that powerful machine go, I had to make sure that she knew how to put on the brakes.

I apply the same principle to therapy, especially trauma therapy. I never help clients call forth traumatic memories unless I and my clients are confident that the flow of their anxiety, emotion, memories, and body sensations can be contained at will. I never teach a client to hit the accelerator, in other words, before I know that he can find the brake.

Following this principle not only makes trauma therapy safer and easier to control, it also gives clients more courage as they approach this daunting material. Once they know they're in the driver's seat and can stop the flow of distress at any time, they can dare to go deeper. Developing "trauma brakes" makes it possible for clients, often for the first time, to have control over their traumatic memories, rather than feeling controlled by them.

My client Paula, for instance, first came to see me for problems in her marriage. She was in her mid-thirties and had three children under the age of 10. When she was a child, her mother had sometimes harshly beaten her. Paula still lived in fear of her mother's aggression, although now it took the form of yelling and criticism, rather than physical violence.

One morning, Paula came into her session pale, with her head bowed. Hardly looking up at me, she moved to her chair and crouched in it, shaking. I'd later learn that she'd just finished a searing telephone conversation with her mother.

Asking Paula about the source of her distress first thing would have let the genie of her

traumatic past out of the bottle, increasing her distress. First I needed to help her calm down, to put her in charge of her somatic and emotional responses.

"You're really shaking, aren't you?" I said, drawing her attention to her body sensations. Sometimes this type of intervention is enough to help a client calm down, though for Paula it wasn't. "Y-y-ye-s," she replied with difficulty. "I s-sometimes s-shake a lot." A few seconds later, she was no longer able to speak and could only show me how fast her heart was beating by a rapid movement of her hand.

Paula was exhibiting symptoms of what neuroscientists call Hyperarousal - a flood of adrenaline and other stress hormones that made her feel threatened and confused. The brain structures most involved in rational thought and memory were, practically speaking, out of commission. In neurophysiological terms, her sympathetic nervous system (which responds to situations of danger, threat, and stress) was in overdrive, giving her a pounding heart, a dry mouth, and muscle tremors.

To help a client when she comes as unglued as Paula was that day, it's useful to understand what's currently known about how the brain handles danger and emotion, especially in the limbic system and two of its major structures: the hippocampus and the amygdala.

The limbic system is survival central, the area of the mid-brain that initiates fight, flight, or freeze responses in the face of threat. (Paula was on the verge of freezing.) The amygdala and the hippocampus, part of the limbic system, are also deeply involved in responding to traumatic events.

The cortex, the more rational, outermost layer of the brain, is the seat of our thinking capacity and our ability to judge, deliberate, contrast, and compare. It's where most memory - traumatic and otherwise - is stored. The cool, rational cortex is in constant communication with the amygdala and the hippocampus.

The Early-Warning System

The amygdala is our early-warning system. It processes emotion before the cortex even gets the message that something has happened. When you smile at the sight or sound of someone you love even before you consciously recognize her, for instance, the amygdala is at work. Here's what happens: the sound of the loved one's voice is communicated to the amygdala via exteroceptive auditory nerves in the sensory nervous system. The amygdala then generates an emotional response to that information (pleasure or happiness, in this example) by releasing hormones that stimulate the visceral muscles of the autonomic nervous system and can be felt as pleasant sensations in the stomach and elsewhere. Lastly, the amygdala sets in motion an accompanying somatic nervous system (skeletal-muscle) response, in this case, tensing muscles at the sides of the mouth into a smile.

A similar process occurs with other types of stimuli, including trauma. When someone is threatened, the amygdala perceives danger through the exteroceptive senses (sight, hearing, touch, taste and/or smell) and sets in motion the series of hormone releases and other somatic reactions that quickly lead to the defensive responses of fight, flight, and freeze. Adrenaline stops digestive processes (hence the dry mouth) and increases heart rate and respiration to quickly increase oxygenation of the muscles necessary to meet the demands of self-defense.

The amygdala is immune to the effect of stress hormones and may even continue to sound an alarm inappropriately. In fact, that could be said to be the core of post-traumatic stress disorder (PTSD) - the amygdala's perpetuating alarms even after the actual danger has ceased. Unimpeded, the amygdala stimulates the same hormonal release as during actual threat, which leads to the same responses: preparation for fight,

flight, or - as with Paula - freeze. In PTSD, this happens regularly, despite outward evidence that these responses are no longer needed. In sum, PTSD could be said to be a healthy survival response gone amok.

Why does the amygdala continue to perceive danger? What makes it possible for the whole body to repeatedly respond as if there is danger, when in fact the danger is past?

The Rational System

The hippocampus helps to process information and lends time and spatial context to memories of events. How well it functions determines the difference between normal and dysfunctional responses to trauma and normal versus traumatic memory. An example will help to explain.

In his book *The Emotional Brain*, Joseph LeDoux explains the survival response involved when encountering an object that looks like a snake. Naturally, the amygdala signals an alarm message, which sets in motion a series of reactions that culminate in the footstep halting in mid-air. The amygdala's communication travels at lightening speed. There's a second communication pathway that takes longer, eventually getting the message around to the cortex, where rational thought takes place. When the information "It's a snake!" reaches the cortex, it's then possible to evaluate the accuracy of the amygdala's perception. If the message was accurate and it is a snake, the halted step will freeze until the danger is passed, i.e., the snake slithers away. If, however, there's a discrepancy and what was thought to be a snake is discerned by the cortex to be a bent piece of wood, the cortex sends a new message to the amygdala, "Hey, it's only a stick," to stop the alarm immediately.

The hippocampus assists the transfer of the initial information - the image of stick or snake - to the cortex, where it's then possible to make sense of the situation. This is the normal way information is communicated, as long as the hippocampus is able to function.

Trauma Trumps Rational Thought

The hippocampus, however, is highly vulnerable to stress hormones, particularly adrenaline and noradrenaline, released by the amygdala's alarm. When those hormones reach a high level, they suppress the activity of the hippocampus and it loses its ability to function. Information that could make it possible to determine the difference between a snake and a stick (or, as in Paula's case, past danger and current safety) never reaches the cortex, and a rational evaluation of the situation isn't possible. The hippocampus is also a key structure in facilitating resolution and integration of traumatic incidents and traumatic memory. It inscribes time context on events, giving each of them a beginning, middle, and - most important with regard to traumatic memory - an end. A well-functioning hippocampus makes it possible for the cortex to recognize when a trauma is over, perhaps even long past. Then it instructs the amygdala to stop sounding an alarm

This has critical implications for therapy. Safe, successful trauma therapy must maintain stress hormone levels low enough to keep the hippocampus functioning. That's why it's so crucial for both client and therapist to know how to "apply the brakes" in therapy - to keep the hippocampus in commission and return it to action as promptly as possible when the system goes on overload.

When and How to Apply the Brakes

Knowing when to apply the brakes is as important as knowing how. Therapists can know when by watching for physical signals of autonomic system arousal, transmitted by the client's body, tone of voice, and physical movements. When a client turns pale, breathes in fast, panting breaths, has dilated pupils, and shivers or feels cold, her sympathetic nervous system (activated in states of stress) is aroused. Stress hormones are pouring

into her body, threatening the hippocampus with shut-down. These symptoms mean it's time to calm the client down.

When, on the other hand, a client sighs, breathes more slowly, sobs deeply, or flushes, her parasympathetic nervous system (activated in states of rest and relaxation) has been activated, and her stress hormone levels are reducing. Recognizing these bodily signals is invaluable to the therapist. Likewise, a client who learns to recognize them often gains a greater sense of body awareness and self-control.

Paula's Brakes

After identifying Paula's hyperaroused state, I asked her a few specific questions to narrow her focus. For some clients, paying attention to body sensations helps put on the brakes, but that wasn't the case with Paula, as I quickly found out. Her continued hyperarousal told me that her amygdala persisted in assessing danger. I needed to find another way to help her evaluate this situation, in this room with me

I decided to see if I could directly engage her cortex using what I call dual awareness. If I could help her to accurately see where she was and whom she was with, she might be able to calm down. So I asked her, "Can you see me?" She replied with a nod of the head. "Clearly?" I could see her breathing slow a little and she managed to say, "Yes."

As Paula's arousal lessened, I asked for more information. "Tell me what you see. Describe me: What color are my eyes? What color is my hair? Am I having a good hair day or a bad hair day?"

Breathing slightly easier, Paula was now able to reply, "Your eyes and hair are brown. I think you're having a good hair day." We both laughed a little; laughter is great for calming the nervous system. I could see color returning to her face and she was shaking less.

To increase her body awareness and the connection between what we were doing and her emotional state, I asked, Paula to describe what happened to her shaking as she looked at and described me.

"It's less," she realized. But she was still shaking a bit, so we weren't through. On a hunch I asked if she felt threatened by me in any way.

"No," she said, "but don't come closer."

Her reply gave me a big clue. "Perhaps," I ventured, "I'm actually sitting too close to you. I'd like to try moving back a little. Would that be okay?" She wanted me to move back a foot. When I complied, she exhaled sharply. I drew her attention to that response as well as another.

"Something else changed. Do you know what?"

"I stopped shaking."

At this point Paula was much calmer, visibly to me and noticeably to her. Her cortex was beginning to discern that she was in a safe place, with a person who wouldn't harm her. It seemed that increasing the distance between us was useful for her, and I asked if she wanted to try increasing it more.

This time, she was more assertive, asking me to move back two feet. Then she was aware of physiological changes even before I asked. "I can breathe easier," she said. She

also told me that her heart rate was much slower, nearly normal. But she complained that her legs felt rather weak, which is a common consequence of fear - that feeling of being "weak in the knees."

Increasing strength in her legs could help her feel more secure, so I instructed her to put weight on her feet and press them into the floor. "Do it as if you're going to tip your chair back, but don't actually do that. The point is to increase the tone in your thighs. When they begin to get tired, release the tension very, very slowly." That would insure that some of the tone remained.

As her thighs became stronger, Paula felt even calmer, and was able to think clearly. Her hippocampus was functioning now that stress hormones were no longer being released. To facilitate integration I asked, "What have you learned in the last few minutes since you arrived?" I wanted her to know what had helped, so she'd be able to use some of these same tools to combat hyperarousal and anxiety in her daily life.

Paula easily identified that she felt calmer when I sat further away and that it was helpful when I asked her to describe me. "Looking at you, I stopped thinking about my mother. Just before I came, we had a big fight. It became obvious to both of us that in her hyperaroused state, Paula had entered the session expecting me to act like her mother. "Actually, I expect everybody to act like her." she said

That insight laid the groundwork for the rest of the session, in which we focused on helping Paula to differentiate who was a person to fear and who wasn't. That work wouldn't have been possible at the beginning of the session, when her hippocampus was overwhelmed.

Had I immediately begun questioning Paula on the causes of her distress instead of first attending to putting on the brakes, her overwhelmed hippocampus would have made it difficult for her to clearly separate me from her mother, and together we might have wandered into one of those anguished quagmires well known to trauma therapists. Putting on the brakes helped to avoid a potential transference disaster.

There's a common misconception among many trauma survivors and trauma therapists that working in states of high distress, including flashbacks, is the way to resolve traumatic memories. But being in the throes of hyperarousal and flashback indicates that the hippocampus isn't available to distinguish past from present, danger from safety. Under those conditions, working with traumatic images and the emotions they engender can risk a variety of negative experiences. Moreover, as Judith Herman has said, a trauma survivor's primary need is to feel safe, particularly in therapy. Applying the brakes to keep arousal low and the hippocampus functioning makes this goal much easier to achieve.

Further reading:

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The Body Remembers: The Psychophysiology of Trauma & Trauma Treatment, (WW Norton, 2000)

The Body Remembers Casebook: Unifying Methods and Models in the Treatment of Trauma and PTSD, (WW Norton, March 2003)

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