

TRAIN YOUR BRAIN #11
FROM ANGER TO PEACE

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Anger is a signal, and one worth listening to. Our anger may be a message, that we are being hurt, that our rights are being violated, than our needs or wants are not being adequately met, or simply that something is not right....Just as physical pain tells us to take our hand off of the hot stove, the pain of our anger preserves the very integrity of our self. Our anger can motivate us to say "no" to the ways in which we are defined by others and "yes" to the dictates of our inner self . . . Jog, meditate, ventilate, bite your tongue, silently count to ten . . . There is no shortage of advice about what you can do with anger in the short run....In the long run, however, it is not what you do or don't do with your anger at a particular moment that counts. The important issue is whether, over time, you can use your anger as an incentive to achieve greater self-clarity and discover new ways to navigate old relationships...getting angry gets us nowhere is we unwillingly perpetuate the old patterns from which our anger springs.

The Dance of Anger, Harriet Lerner

When I was in the fourth grade, like many other boys, I got into a fistfight in the classroom during recess. I don't remember what the triggering events were, but I have a vivid memory of standing with my back to the chalkboard, energy boiling up through me, taking a punch at the other guy's face, hitting him in the eye, then folding up when he counterpunched me in the stomach and my wind was knocked out of me. I'm not sure if I won or lost the fight, since I quit at that point and he had the "shiner" for the next several days. We wound up in the principal's office later that day, but nothing of consequence happened. In my memory, there are some vivid visuals about that event that seem pertinent here. One is the sense of inevitability of the conflict once it got started—the fight was to the finish and there

was no concern for consequences. The next is the narrowing of focus onto the opponent—nothing else was there in the room. Finally, there is still an addictive sense of positive power attached to the moment—I was strong and manly, even in defeat, and I left a lasting trace on my opponent. Now, as an adult, I look back on this as both a “cute” childhood episode and a disturbing personal participation in the processes that leave so many dead and maimed bodies on our streets and around our world.

Why is skillful interaction with our angry emotions so necessary? It’s because anger is both one of the most effective social tools for achieving short range results, and one of the most toxic emotions to ourselves and our family/social networks. Anger has an addictive quality to it; it gives us a sense of power and control; it achieves results; it defends us against injury and intrusion. In primate societies, such as baboon troops or chimpanzee clans, short bursts of anger and aggression help maintain the social structure and the dominance hierarchy, both among males and females. There is an expedience to anger as an emotion—it gets the job done in the least amount of time. Anger at “them” also bonds “us” and gives us a feeling of cohesion and support—note the post 9/11 emotional state of the United States.

There is also a cost to anger. At a social level, there are the consequences of withdrawal or flashback or revenge. The United States has the highest youth murder rate of any of the 26 wealthiest nations on the planet. In schools, there were 188,000 physical attacks, 11,000 weapons assaults, 4,000 sexual assaults during the 1996-7 school year. . Forty percent of high school males and twenty five percent of high school females report having been in a fight in the previous 12 months (2003). Assaultive trauma recurs, with hospitalization rates up to 44% for trauma and up to 25% for murder.

Within the family, there can be isolation due to fear or the formation of alliances to oppose the angry individual. In addition, early experience teaches children to develop aggressive behavior. If you follow infants closely, control of “innate” aggression starts at 17 months, and television violence exposure and being identified as aggressive by the age of eight independently sort for higher rates of conviction for violent crimes by age 30. Most violent attacks happen between friends, acquaintances, or family members.

At a personal level, people of angry disposition have greater heart attack and stroke risk than their more placid brethren, up to 2.69 times as great. Episodes of anger can increase the risk of a myocardial infarction (MI) 2.3 times baseline for the next two hours after the episode. Medical students who responded to stress with anger had a 3.1 times elevated risk of premature cardiovascular disease by age 55, and a 6.4 times elevated risk of MI .

Persons with irritable bowel syndrome have greater colonic pain and dysfunction due to corticotrophin releasing factor release in response to anger and stress. Patients with posttraumatic stress disorder have decreased hippocampal volumes on MRI scans(decreased memory) and greater dysfunction in neuropsychological tests of left hemisphere function (language and sequential memory). PTSD patients also have decreased glucocorticoid levels and more autoimmune diseases.

Animal studies show that aggressive animals, when dominance hierarchies are disturbed and they respond with more extreme behavioral outbursts, develop high levels of atherosclerosis in the coronary arteries independent of serum cholesterol, triglycerides, or blood pressure. There was also more coronary vasoconstriction and spasm in these aggressive animals. A brief episode of stress can cause dysfunction in the endothelial lining of the blood vessels lasting one to four hours, activation of the sympathetic nervous system with increased hemodynamic turbulence and

endothelial damage, leading to atherosclerosis, heart attack, and stroke. Activation of the hypothalamic-pituitary-adrenal axis by stress promotes increased steroid secretion, interference with macrophage activity and the inflammatory/immune response to infection, and cytotoxic effects on the central nervous system.

So how to balance the benefits and the costs of anger? First, we need to understand how anger arises, what triggers it, and how it works through the brain and body. Then we can observe and learn to detect the emotion as it arises. Finally, with practice, we can use the emotion to assist us in being effective, positive, and more deeply connected and attuned to our fellow humans and to ourselves.

At the base level of aggression, the emotion of anger and rage can be behaviorally elicited by the hypothalamus, a structure that sits just above the pituitary gland in the center of the skull and has overall responsibility for regulating homeostasis, hormones, and basic drive states. In animal studies, it is possible to stimulate one area in the hypothalamus and elicit a rage reaction, then move the electrode a small distance and electrically bring out fear behavior. It's as though the behaviors are a structured subroutine of motoric actions, hormonal secretions, and autonomic nervous system adjustments that, once triggered, will run independent of external feedback. If you remember the last time you expressed anger, you may be able to recall the feeling of it taking you over, that you were no longer quite in control of your actions. That loss of overall control could feel "good" or "bad", dependent on the context, your emotional makeup, and the consequences of your outburst or action, but those are all post hoc cortical judgments on the event and your behavior, not something that most of us are able to do "on the fly" in the middle of the storm. The cortex, or at least the portion of brain that does the analysis of your actions, is an observer, not an actor, during these basic, highly programmed neurophysiologic sequences. The good news here is that the cortex can then evaluate the stimuli for the emotion, the actions that occurred, and the results, and make decisions about

how to process similar situations in the future. A person can make a decision to exhibit a modified anger behavior in the future, to aim for a more healthy result.

So where does this occur? In a normally functioning, uninjured brain, it begins with a perception of threat to well-being or to goal satisfaction. This is a different sense of threat than that which will arouse fear, because there is a sense of personal equivalence or superiority to the threat, so that the goal can still be achieved by active emotionally charged behavior. This involves dialogue between the amygdala/limbic system (emotional tone and memory) and the parietal lobes of the brain (multi-association areas that compute the size and quality of incoming sensations). Studies have shown that the left ventral frontal and medial prefrontal regions are the site of the go/no-go decisions and also the site of the emotional/behavioral rheostat that adjusts your behavior to the context of the situation. So areas of the brain just above and between the eyes make that call and set other motor subsystem routines in motion. This way, just the right amount of force and energy is exerted to achieve the goals of the particular psychosocial occasion—just enough anger to get the job done. Decisions in the frontal lobe are sent to the hypothalamus, to organize the hormonal responses and autonomic nervous system adjustments necessary to support the behaviors.

The insular cortices (bilateral areas deep in the brain just above and in front of your ears) which is involved in internal body perception and “mirror neuron” empathic understanding of the other person, is probably partially shut down during anger expression. You don’t want to necessarily feel the other person’s pain at that point. The hypothalamus also gets involved in the body’s chemical and hormonal expression and adjustments during anger. The hypothalamus is the top end of the endocrine system and has strong influence over the autonomic nervous systems. As anger is expressed, there is tremendous sympathetic system activity, with stimulation of cortisol via the pituitary and adrenal glands, increased energy

metabolism in the muscles, and a shunting of blood flow to the arms from the rest of the body (arms are for fighting, legs are for fleeing). The bloodstream becomes more coaguable, to better sustain and control injury. The pain threshold is raised, so that sensations that might stop the execution of physical force are muted. The mechanism is engaged.

In more difficult moral dilemma situations, where the course of action may not be so clear, the anterior cingulate cortices (located between the eyes about two inches back from the front of the brain) become active. These are areas of error detection, that monitor the signal traffic between the frontal motor regions and the parieto-occipital-temporal sensory regions. In a somewhat oversimplified way, these are the “witnessing” regions, which note what is going on and how the organism is doing in achieving its goals. It’s kind of interesting that the anterior cingulate cortex is in the location of the “Third Eye”, and that it is also the area most activated during deep meditative states, when one is just being aware of awareness. So this area watches the parts of the frontal lobe we talked about above, and monitors the internal state, the environmental feedback, and the planned and in progress actions to ensure that the organisms goals are being achieved. Interestingly, my guess is that this area is truly active and in control in the masters of martial arts such as Aikido, where attunement to just what is happening is the hallmark of their behavior. It also doesn’t take much of a speculative leap to see the anterior cingulate as a site of delayed gratification behavior, a uniquely human trait. Here is the anatomy that might save us from the unfortunate consequences of our impulsive actions.

Individual traits and experiences can cause a great deal of variation in the functional anatomy described above. We inherit different central nervous system structure within the broad range of human brain anatomy. We have different experiences in childhood and through adulthood, which influence and literally rewire our brains to foster different habits of behavior. There may be injuries, disease, or drug/toxin

exposure which can affect the brain's anatomy and its potential to self-regulate. The differences can be so extreme that some individuals will lower their heart rate and blood pressure when attacking (almost a parasympathetic, relaxation response), while others will be more excitable with hypertension and high heart rate. Jacobson and Gottman talk about these types of attackers in their book When Men Batter Women, describing the first type of attacker as a "Cobra", and the second type of attacker as a "Pit Bull." Whichever type you might feel an affinity with, the important thought is to work with what is, with who you are, not with some "cookie cutter" program. One size truly does not fit all, or probably even most people.

In anger expression, there is the priming of the emotion, and then the release. Priming of the emotion comes from the inherited trait conditions discussed above, and includes the remembered experiences, the habitual behaviors, and the current situational context. The release involves a "go-no go" trigger, which allows the anger behavior to explode into the situation. Afterwards, there is usually a retrospective reconstruction of what happened, involving self-justification and memory of prior injury. What we remember about the situation would probably not agree with a videotape of the encounter.

So anger is a useful emotion, an appropriate response to injury or loss. Its expression is to be watched carefully, because consequences that follow our actions taken in anger may be deadly to ourselves, our loved ones, or our planet. Each of us is born with the neural circuitry and capabilities that can control the expression of anger, to make it effective and compassionate. We just need to train ourselves to use our mind (and thus brain) as a skillful means, rather than be gripped by seemingly uncontrollable forces.

Exercises for Transforming Anger to Peace

Neurological Frame

1) Spacious withdrawal/Strategic Retreat

Sit . . . establish some inner quiet. Bring the situation to mind . . . start in the situation . . . expand awareness around it—until it's a hurricane in a sake cup. The point is to disengage from limbic system reactivity and stimulate the dorsolateral frontal and parietal lobes. With repetition, this changes the frame of the action.

2) Temporal Withdrawal/Count to ?

This is classic, quick version of #1, useful on the fly, with the same aims of disconnecting the reactive from the analytic.

Psychological Frame

1) Counterintuitive Exercises

Anger as the trigger for love—"I love the one who is threatened." Love for allies, including the impaired allies.

3) Structural Analysis (TA)

Sit . . . establish some inner quiet. Bring the situation to mind as objectively as possible, analyze the roles and motivations of all involved, what was gained, what was lost, who was Parent/Adult/Child, who was Victim/Perpetrator/Rescuer

3) Foreseeing and Protecting

Focus on what makes you feel strong. Consider Nietzsche's famous saying: That which does not kill me makes me stronger. Make a plan to deal with what makes you angry, and build skills and alliances and other resources for accomplishing your plan, one step at a time.

Contemplative Frame

1) Emptiness practice

Observe many of the causes and conditions for all persons involved. Observe the transitory nature of all of these beings and states of beings: *You are as a flash of lightning in a summer sky...knowing this, why do you quarrel?*

2) Dropping Story—Abandoning Self

Meet the anger as it arises, at the point of the bare sensations of it (called “contact” in Buddhist psychology) . . . observe the parts of the anger reaction that are pleasant, unpleasant, or neutral (“feeling”) . . . and then notice the automatic tendency of the mind to magnify and reach for the pleasant, to dislike and resist the unpleasant, and to ignore the neutral. This will help prevent the story around the anger from gaining traction in your mind, particularly through stimulating a sense of “I who has been mistreated/disrespected/harmed.” If there is no self to be injured, but only the arising and passing of states of mind (via passing electrochemical cascades in the brain), then freedom to choose the most skillful and compassionate action is much more available.

3) Metta (lovingkindness) practice

Hate is never conquered by hate. • Hate is conquered by love. • This is an eternal law.

- The Dhammapada

Doing metta practice for oneself, one’s friends, and then one’s enemies will change your reactivity to difficult people and situations

4) Invoking your community

One of the most painful states that arises with anger is the isolation of fear. In one’s space of attention, bring to mind those fellow travelers on the path, meditators, friends, teachers, all of them working to develop their skills in working with anger. All of them offering you their support and encouragement.

Homework

1) Driving meditation using metta—"I am being traffic for all of these people." "May we be safe from inner and outer danger and harm."

2) Family gathering—Take one difficult relative and hold them in compassion for one hour. See how this feels.