The Emotional Life Of The Brain

Ever wondered why some people are constantly cheery and others shadowed by gloom? Why some have trouble focusing, are good with people or have strong emotional reactions to seemingly minor occurrences?

Pioneering neuroscientist and psychology professor Richard Davidson, Ph.D., says there’s a reason we are who we are. Our emotions and thoughts do not happen to us, he argues. Rather, they are routine, predictable and rooted in the structure of our brains.

“Other schemes of personality were invented without any knowledge of the brain,” says Davidson, who compiled his 30 years of research findings into new book *The Emotional Life of Your Brain*. “This is the first neuroscientific conception of the emotional and social variations among people, based on a modern diagnosis of the brain.”

Decades of lab work resulted in a hybrid discipline called “affective neuroscience,” or the study of brain mechanisms that underpin our emotions. Davidson says human emotions reach far beyond romance-novel fluff. They are central to the functions of the brain and the life of the mind.

Unlike emotional states, fleeting reactions triggered by an experience and lasting only seconds, and emotional moods, feelings that persist for a few hours or even days, Davidson says it is our emotional styles that shape our lives and how we respond to the world around us. Emotional style, traced to specific brain signatures, is comprised of six dimensions. Where you fall on the spectrum of each, he says, determines how you will feel, think and react.

**Resilience:** How slowly or quickly you recover from adversity, determined by signals between the prefrontal cortex and the amygdala.

**Outlook:** How long you are able to sustain positive emotion, based on levels of activity in the ventral striatum, a region of the brain critical for generating a sense of reward.
Social Intuition: How adept you are at picking up social signals from the people around you, shaped by the interplay between the amygdala and fusiform regions.

Self-Awareness: How well you perceive physical signals that reflect your emotions, determined by the insula’s ability to interpret signals from the visceral organs.

Sensitivity to Context: How good you are at regulating your emotional responses depending on the context you find yourself in, driven by activity levels in the hippocampus.

Attention: How sharp and clear your focus is, regulated by the prefrontal cortex.

Davidson explains someone thought to be “agreeable” is likely highly sensitive to context with strong resilience and a positive outlook. A “conscientious” person has well-developed social intuition and focused attention style, while an “impulsive” person may have low self-awareness and an unfocused attention style.

“There is no ideal formula for the best emotional style,” says Davidson. Being low on the social intuition spectrum might benefit a computer programmer, he notes, while someone who is unfocused might excel in a fast-based environment where multi-tasking is critical.

The neural pathways that determine our emotions are partly genetic. Even infants seem to vary in temperament—some curious and outgoing, others fussy and anxious. Yet Davidson says how much genes contribute varies from 20% to 60% (versus the 100% heritability of sickle-cell disease and the 0% heritability of religious affiliation). That means our environments and experiences can have sweeping impact on our emotional approach.

Despite Davidson’s tolerant take on different emotional styles, feelings and thoughts do affect physical health and some more positively than others. Not being to bounce back from stressful events and constant negativity can impede well-being and personal happiness. Emotional style may also impact your success in different contexts. For instance, high levels of focus, social intuition and sensitivity to context are generally assets in the corporate world.

Our default responses may be wired into us, but with time, effort and practice, you can change your brain to transform your life. “Neuroplasticity, the brain’s ability to reorganize, is the organ of change,” Davidson says. Thus, engaging regularly in positive activities over time will rewire the brain’s neural pathways
and increase your positive feelings. He recommends the following exercises to develop your abilities in each of the six dimensions.

**To Boost Resilience:** For five to 10 minutes at a time, four or five times a week, visualize someone you know who is suffering—an ill neighbor or a friend struggling in her marriage—and on each inhalation, imagine that you are taking on that suffering. On each exhalation, imagine the suffering is transformed into compassion, which will help ease the person’s pain.

**To Increase Positive Outlook:** Fill your home and workspace with upbeat reminders of happy times, like photos of your family or vacations, and change the pictures every two weeks. Find opportunities to compliment others and make the effort to express gratitude often, by offering a warm thank you and writing down the things you appreciate in others and in your life.

**To Become More Socially Intuitive:** When in public, watch people’s body language and try to guess what they’re talking about and what emotions they are expressing. Start to also take notice of friends and colleague’s facial cues and body language and how it corresponds to their tone of voice.

**To Enhance Self-Awareness:** Initiate a daily mindfulness meditation. Choose a time when you feel the most awake and alert, sit upright, concentrate on your breathing, notice the sensations in your body and, if you become distracted, bring your focus back to your breath.

**To Better Regulate Emotional Reactions:** To identify what produces a strong reaction in you, regularly make a list of the specific events or behaviors from the day or week that triggered your response. Then spend about 15 minutes thinking about these behaviors while breathing deeply until you feel comfortable and more relaxed.

**To Increase Focus and Attention:** Spend 10 minutes every day sitting in a quiet room with your eyes open. Focus on an object (a lamp or a piece of art), keep your attention and eyes trained on it, and if your thoughts begin to wander, bring them back to the object.

“A lot of the work that we’ve done on strategies to change these styles was inspired by my relationship with the Dalai Lama, the inspiration for us taking meditation seriously,” says Davidson. “Well-being is strongly related to your emotional and physical health. If your emotional style is not working for you, the first and most important ingredient of change is awareness.”