ELMHURST COUNSELING

The Role of Heart in Experiencing Emotion

Heart Rate Variability (HRV) measures beat-to-beat changes in heart rate. It measures the interaction between the heart and brain via the neural signals flowing through the ascending and descending pathways of the sympathetic and parasympathetic branches of the Autonomic Nervous System (ANS). The ANS is the network of nerves that control involuntary bodily functions (e.g. heart rate, breathing, digestion, blood pressure, sexual arousal).

Positive emotions shift the rhythm of heart activity. This happens both automatically and it can be triggered by intentional heart-centered positive emotions refocusing/restructuring techniques (e.g. biofeedback).

When the reciprocal interactions between the parasympathetic and sympathetic branches of the ANS are not in synchrony, the body experiences cortical inhibition, impaired cognitive functions, diminished ability to think clearly & discriminate among behavioral choices, and a breakdown of self-regulation. Conversely, appreciation, compassion, gratitude, kindness, and love generate a smooth, ordered sine wavelength pattern in the heart rhythms as there grows synchrony between the parasympathetic and sympathetic branches of the ANS.

This is referenced as 'coherence.' In coherence mode, heart rhythm patterns oscillate at about six cycles per minute. This smooth, ordered wavelength pattern can be caused by both spontaneous emotions and intentionally generated feelings. The pattern of the heart's rhythm is the primary reflection of emotional state. When in this state of 'flow,' the body experiences:

- Blood pressure control
- Respiratory efficiency
- Inhibition of pain signals
- Increased efficiency of fluid exchange
- Metabolic energy savings
- Calm, emotionally balanced, yet alert, responsive state
- Clearer problem solving, decision making, and long-term memory
- Cognitive flexibility and creativity
- Broadened thought-action repertoires
- Improved health/longevity.

Past experience builds a set of familiar patterns in the neural architecture. Inputs from the internal and external environments contribute to the maintenance of these patterns. When current input is different from the familiar reference patterns, the mismatch generates feelings and emotions. The heart is the primary and most consistent source of dynamic rhythm patterns in the body The heart is also an endocrine gland that produces and secrete hormones and neurotransmitters (e.g. oxytocin). The heart doesn't just pump blood – it also continually transmits dynamic patterns of neurological, hormonal, and electromagnetic information to the brain and throughout the body. This is most visible when a person experiences a panic reaction.

Changes in the heart's pattern can be intentionally generated. Therefore, in addition to reducing stress, there can be long-term improvement in emotional regulation ability. Re-patterning changes in the reference baseline can be achieved through heart-rhythm feedback coherence-building which allows one to see one's own heart rhythm patterns in real time – both the current state and the cumulative change resulting from the execution of the techniques. Benefits include:

- Improved stress/anger management
- Reduced anxiety, depression and fatigue
- Improves academic and athletic performance (functioning 'in the zone')
- Lowered physical and psychological health risk factors
- Favorable changes in the DHEA/cortisol ratio and increased oxytocin production (bonding/intimacy).