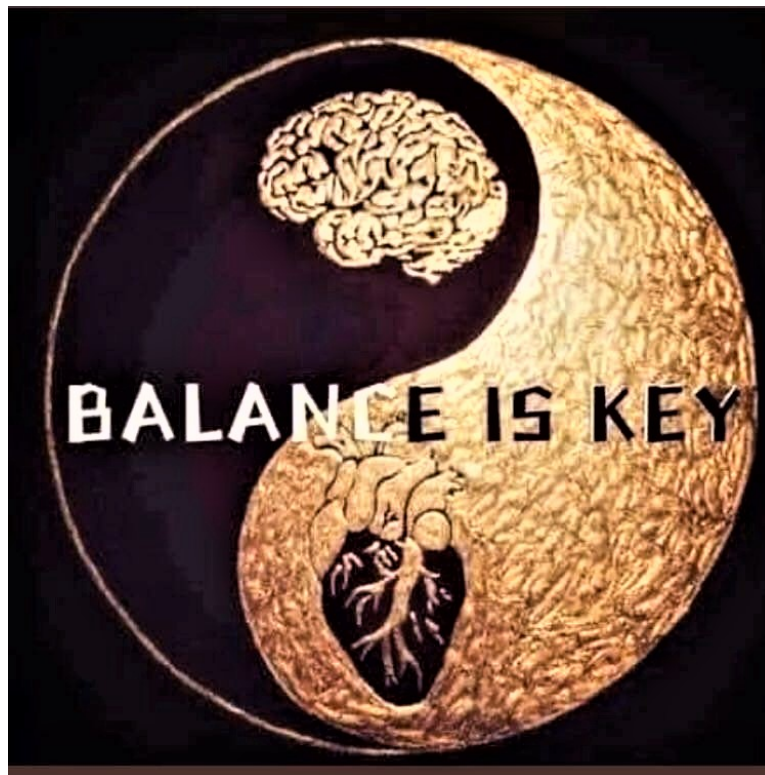


# Heart and soul

Stuart Kerr

2-21-22



**UB 28:6.19** The real nature of any service, be it rendered by man or angel, is fully revealed in the faces of these seeraphic service indicators, the Sanctities of Service. The full analysis of the true and of the hidden motives is clearly shown. These angels are indeed the **MIND READERS**, **HEART SEARCHERS**, and **SOUL REVEALERS** of the universe. Mortals may employ words to conceal their thoughts, but these high seconaphim lay bare the deep motives of the **HUMAN HEART** and of the angelic mind.

**UB 48:6.32** These angels are all in the chain of recorders extending from the lowest to the highest custodians of the facts of time and the truths of eternity. Some day they will teach you to seek truth as well as fact, **TO EXPAND YOUR SOUL AS WELL AS YOUR MIND**. Even now you should learn to **WATER THE GARDEN OF YOUR HEART** as well as to seek for the dry sands of knowledge.

**UB 121:7.5** Jeremiah had told of the "**LAW TO BE WRITTEN IN MEN'S HEARTS**," Ezekiel had spoken of a "**NEW SPIRIT TO LIVE IN MAN'S SOUL**," and the Psalmist had prayed that God would "**CREATE A CLEAN HEART WITHIN** and renew a right spirit."

**UB 130:6.3** And then, forthwith, will this faith vanquish fear of men by the compelling presence of that new and **ALL-DOMINATING LOVE OF YOUR FELLOWS WHICH WILL SO SOON FILL YOUR SOUL TO OVERFLOWING** because of **THE CONSCIOUSNESS WHICH HAS BEEN BORN IN YOUR HEART** THAT YOU ARE A CHILD OF GOD.

**UB 131:2.2** Therefore shall **YOU LOVE THE LORD YOUR GOD WITH ALL YOUR HEART AND WITH ALL YOUR SOUL** AND WITH ALL YOUR MIGHT.

**UB 131:3.2** "OUT OF A **PURE HEART** SHALL GLADNESS SPRING FORTH TO THE INFINITE; all my being shall be at peace with this supermortal rejoicing. **MY SOUL IS FILLED WITH CONTENT, AND MY HEART OVERFLOWS WITH THE BLISS OF PEACEFUL TRUST.**"

**UB 131:3.4** When the faith of your religion has **EMANCIPATED YOUR HEART**, when the mind, like a mountain, is settled and immovable, **THEN SHALL THE PEACE OF THE SOUL** FLOW TRANQUILLY LIKE A RIVER OF WATERS.

**UB 131:4.3** The Lord is our ruler, shelter, and supreme controller, and **HIS PRIMEVAL SPIRIT DWELLS WITHIN THE MORTAL SOUL. THE ETERNAL WITNESS TO VICE AND VIRTUE DWELLS WITHIN MAN'S HEART.**

**UB 131:4.7** **THE GOD-KNOWING SOUL** rises in the universe like the cream appears on top of the milk. We worship God, the all-worker, **THE GREAT SOUL, WHO IS EVER SEATED IN THE HEART OF HIS CREATURES.** And they who know that **GOD IS ENTHRONED IN THE HUMAN HEART** are destined to become like him—immortal. Evil must be left behind in this world, but **VIRTUE FOLLOWS THE SOUL TO HEAVEN.**

**UB 131:7.3** 'If I hear your prayers, it is because **YOU COME BEFORE ME WITH A CLEAN HEART**, free from falsehood and hypocrisy, with **A SOUL WHICH REFLECTS TRUTH LIKE A MIRROR.**"

**UB 142:7.2** 'If I hear your prayers, it is because **YOU COME BEFORE ME WITH A CLEAN HEART**, free from falsehood and hypocrisy, **WITH A SOUL WHICH REFLECTS TRUTH LIKE A MIRROR.**"

**UB 143:5.6** Jesus perceived the attempt of **THE WOMAN'S SOUL** to avoid direct and searching contact with its Maker, but he also saw that **THERE WAS PRESENT IN HER SOUL A DESIRE TO KNOW THE BETTER WAY OF LIFE.** After all, **THERE WAS IN NALDA'S HEART A TRUE THIRST FOR THE LIVING WATER.**

**UB 147:8.4** The Father rather desires that you **DRAW OUT YOUR HEART TO THE HUNGRY**, and that you minister to the afflicted souls; then shall your light shine in obscurity, and even your darkness shall be as the noonday. Then shall the Lord guide you continually, **SATISFYING YOUR SOUL** and renewing your strength.

**UB 148:6.9** Failure to receive help from man drives Job to God. Then ensues **THE GREAT STRUGGLE IN HIS HEART BETWEEN FAITH AND DOUBT.** Finally, the human sufferer begins to see the light of life; **HIS TORTURED SOUL ASCENDS TO NEW HEIGHTS OF HOPE AND COURAGE;** he may suffer on and even die, but **HIS**

**ENLIGHTENED SOUL** NOW UTTERS THAT CRY OF TRIUMPH, 'MY VINDICATOR LIVES!'

**UB 157:2.2** "And **WHEN THE FEELINGS OF SERVICE FOR YOUR FELLOW MEN ARISE WITHIN YOUR SOUL**, do not stifle them; **WHEN THE EMOTIONS OF LOVE FOR YOUR NEIGHBOR WELL UP WITHIN YOUR HEART**, give expression to such urges of affection in intelligent ministry to the real needs of your fellows."

**UB 165:6.2** "In the time of testing, **A MAN'S SOUL IS REVEALED; TRIAL DISCLOSES WHAT REALLY IS IN THE HEART.**"

**UB 167:1.5** Then went Jesus over to where the sick man sat and, taking him by the hand, said: "Arise and go your way. You have not asked to be healed, but **I KNOW THE DESIRE OF YOUR HEART AND THE FAITH OF YOUR SOUL.**"

**UB 174:5.9 [Jesus]** "Nevertheless, **MY HEART ACHES FOR MY PEOPLE**, and **MY SOUL IS DISTRAUGHT BY THAT WHICH LIES JUST BEFORE ME.**"

**UB 194:3.17** Pentecost was the call to spiritual unity among gospel believers. When the spirit descended on the disciples at Jerusalem, the same thing happened in Philadelphia, Alexandria, and at all other places where true believers dwelt. It was literally true that **"THERE WAS BUT ONE HEART AND SOUL AMONG THE MULTITUDE OF THE BELIEVERS."**

**UB 194:4.3** "Day by day they continued steadfastly and with one accord in the temple and breaking bread at home. **THEY TOOK THEIR FOOD WITH GLADNESS AND SINGLENESS OF HEART**, praising God and having favor with all the people. They were all filled with the spirit, and they spoke the word of God with boldness. And **THE MULTITUDES OF THOSE WHO BELIEVED WERE OF ONE HEART AND SOUL**; and not one of them said that aught of the things which he possessed was his own, and they had all things in common."

The heart has its own 'brain' – its own intrinsic nervous system. It's not clear if it's subservient to the higher brain functioning. This internal nervous system may help to fine-tune and integrate the heart's diverse activity. The cardiovascular system is highly interactive and possesses many interdependent processes. The heart and circulation operate on multiple time scales or frequencies.

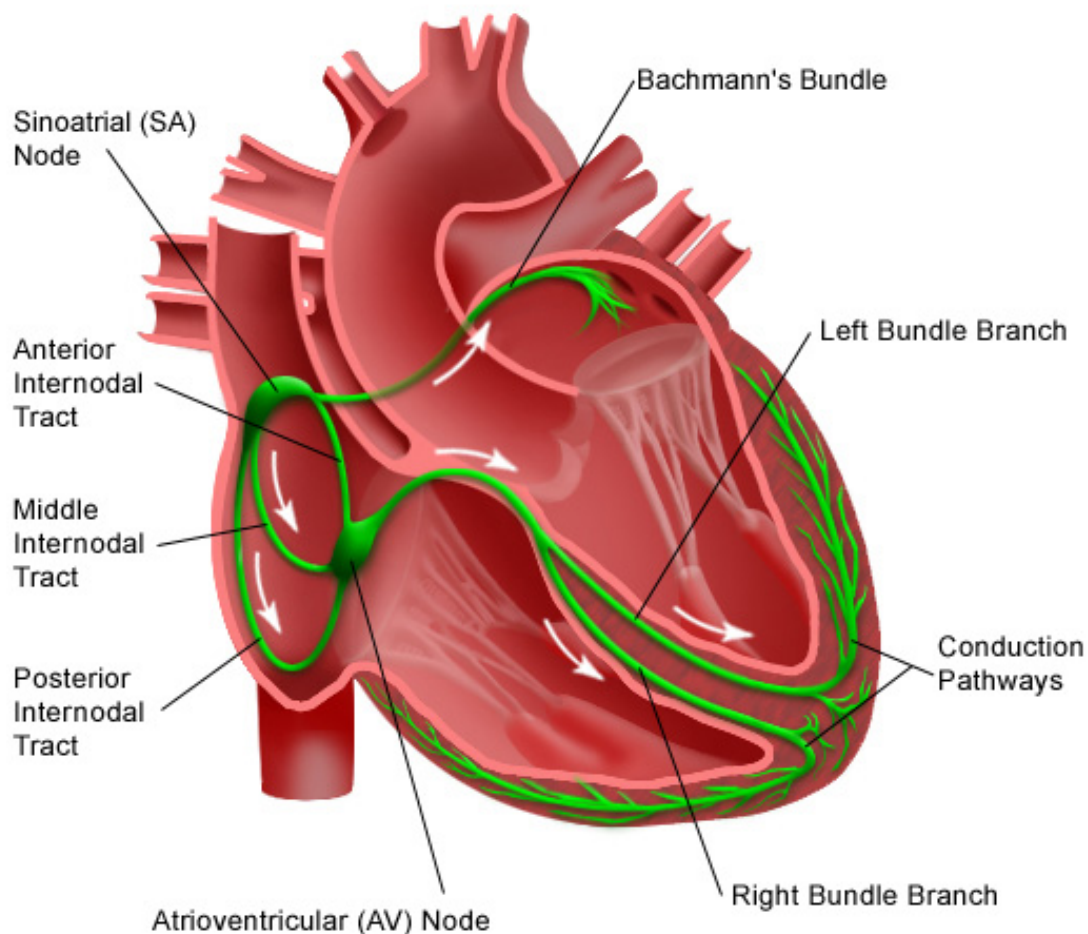
The top wave (blue) in the graph is the mother's signal averaged electroencephalograph (EEG), or brainwave signal. The bottom wave is her infant's signal averaged electrocardiogram (ECG). Signal averaging is a technique for detecting synchronization between two signals. In this example, the mother's brainwave is clearly synchronized to her baby's heartbeat, showing that the mother's brainwaves synchronized to that of her baby's heartbeat.

When an infant is born prematurely, it tumbles into a world of cacophony. Obstetricians usually try to shield preemies from the bright lights, harsh sounds, and pungent smells

Research has shown that the heart communicates with the brain in four major ways;

1. **Neurologically** or transmission through nerve impulses,
2. **Biochemically** - hormones & neurotransmitters
3. **Biophysically** -through pressure waves
4. **Energetically** -through electromagnetic field interactions.

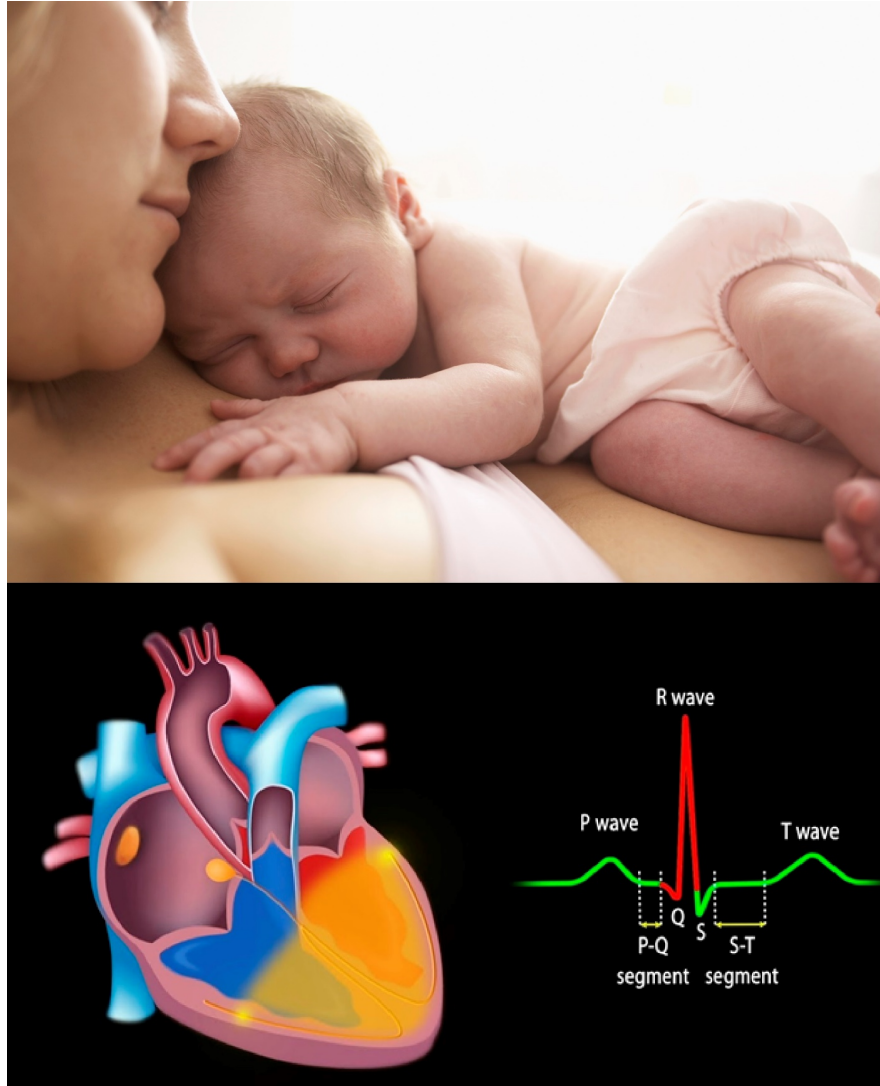
### Electrical System of the Heart



of the neonatal ICU, but few have tried to replace what these babies are largely deprived of: a mother's voice and heartbeat. When premature babies are exposed to recordings of their mother's voice and heartbeat, the functioning of their auditory cortex, the part of the brain which helps us hear, is significantly influential.



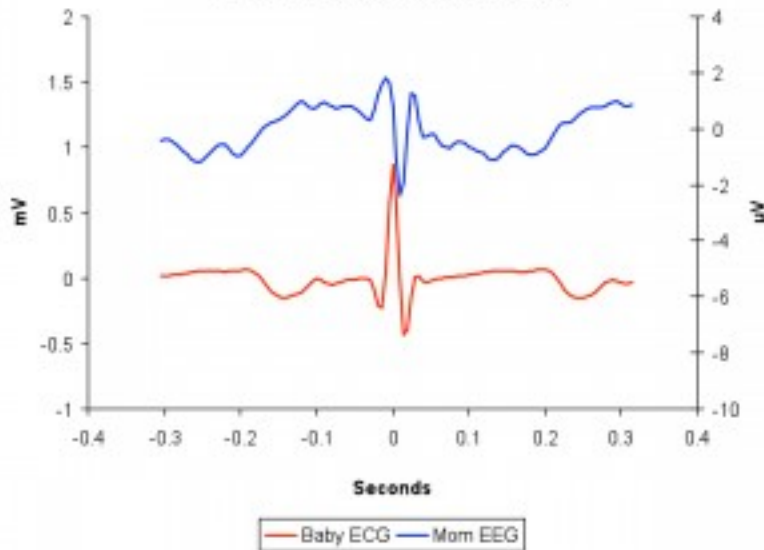
In contrast to skeletal muscle, heart muscle can continue to function even when nerve fibers from the brain to the heart are severed. The classic example of the ability of the heart to beat after its nerves have been severed is heart transplantation. The process of removing the heart from an organ donor requires that all nerves connected to the donor's heart be severed. After being implanted into the recipient and stimulated, the heart will then beat without nerves. The nerves connecting the brain to the heart exist to function in fine-tuning the heart's action. They assist at determining how fast the heart beats and how hard the heart pumps.



The nerves that link the brain to the heart are part of what is called the autonomic nervous system. The autonomic nervous system pathways connect the heart and other internal body organs to the brain. This system functions in an involuntary and reflexive manner. It directs activities of the body that do not require conscious control.

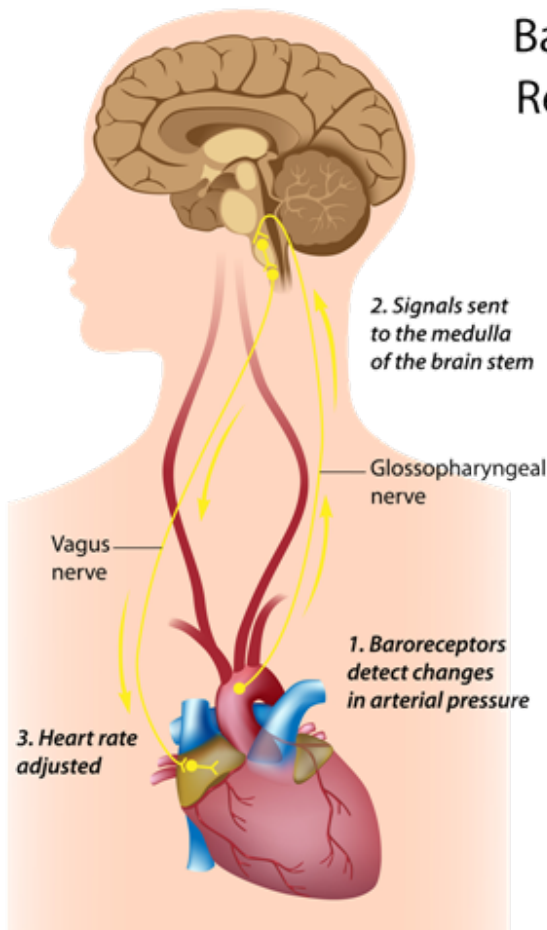
The autonomic nervous system is made up of two divisions: sympathetic and parasympathetic. Autonomic nerve fibers originate from the brain and spinal cord and deliver impulses to your heart's pacemaker and other parts of the heart. The sympathetic division signals both your heart's pacemaker to increase its firing rate and your heart's muscle cells to increase the strength of their contraction; and the parasympathetic division sends signals to slow down your heart rate. The sympathetic fibers, which increase the heart rate, are activated in times of stress or emergency situations, sometimes called "fight", or take "flight", situations. The parasympathetic fibers slow the heart rate and allow us to "rest" and "digest".

## 500 Averages beginning at 2000 seconds



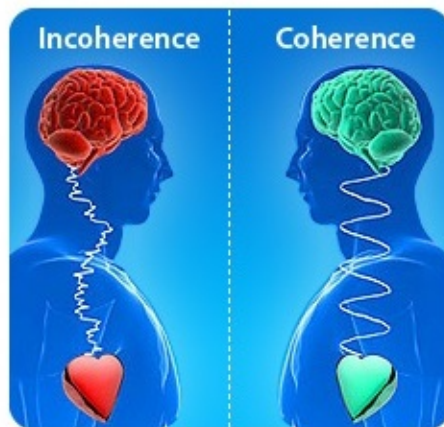
When we experience uplifting emotions such as appreciation, joy, care, and love; our heart rhythm pattern becomes highly ordered, looking like a smooth, harmonious wave. This is called a coherent heart rhythm pattern. When we are generating a coherent heart rhythm, the activity in the two branches of the Autonomic Nervous System is synchronized and the body's systems operate with increased efficiency and harmony.

## Baroreceptor Reflex

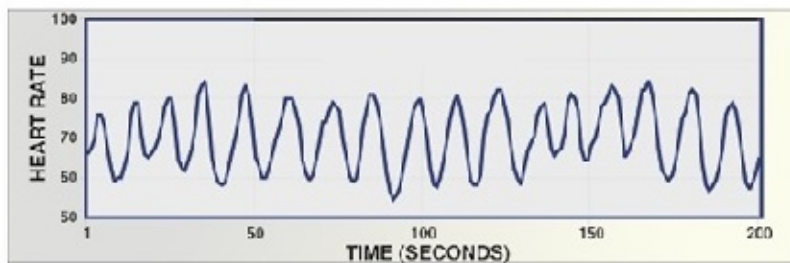


The incoherent heart rhythm pattern shown in the top graph, characterized by its irregular, jagged waveform, is typical of stress and negative emotions. The bottom graph shows an example of the coherent heart rhythm pattern that is typically observed when an individual is experiencing a sustained positive emotion. The coherent pattern is characterized by its regular, sine-wave-like waveform. It is interesting to note that the overall amount of heart rate variability is actually the same in the two

recordings shown above; however, the patterns of the HRV waveforms are clearly different.

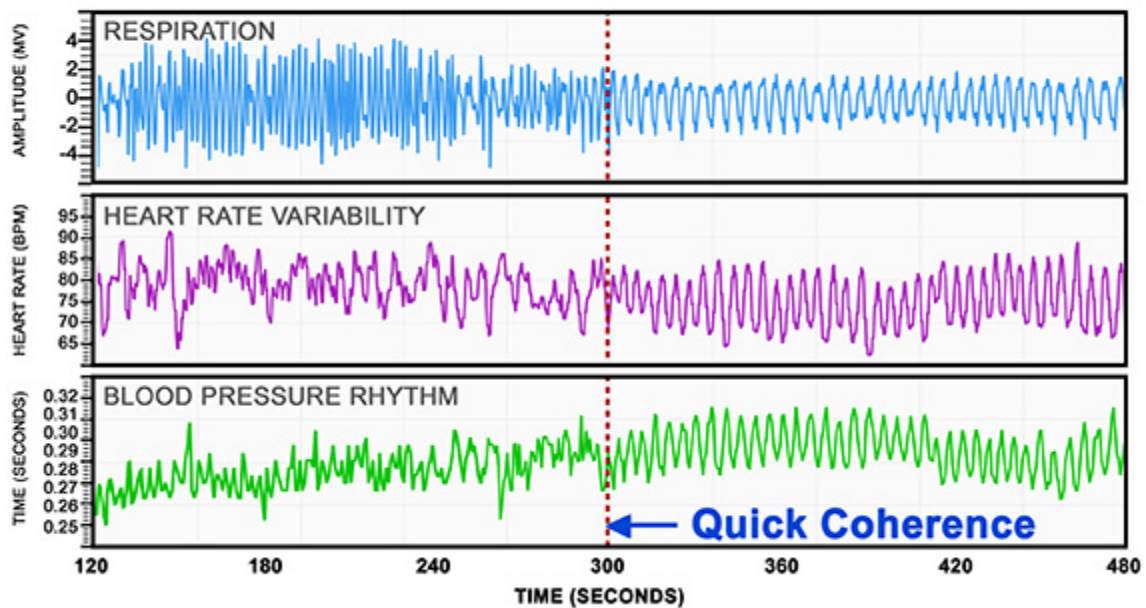


Cortical  
Inhibition  
(chaos)



Cortical  
Facilitation  
(coherence)

## The Coherent State



Physiological entrainment during coherence shows synchrony of an individual's heart rate variability, blood pressure rhythm (pulse transit time), and respiration rhythm over a 10-minute period. Psychologically, coherence is experienced as a calm, balanced, yet energized and responsive state that is conducive to everyday functioning and interaction, including the performance of tasks requiring mental acuity, focus, problem-solving, and decision-making, as well as physical activity and coordination. The body's many systems are constantly responding to changes in its internal and external environments. Functions like respiratory rate, heart rate, blood pressure, and body temperature are continually adjusted to keep you in a state of balance known as homeostasis. The brain handles all of this subconsciously (autonomically).

The heart's nervous system contains around 40,000 neurons, called sensory neurites. The heart possesses an intricate network of several types of neurons, neurotransmitters, proteins and support cells similar to those found in the brain proper. When heart rhythm patterns are coherent, the neural information sent to the brain facilitates cortical function. States of increased heart rhythm coherence are associated with improvements in cognitive performance. The brain's alpha wave activity is synchronized to the cardiac cycle. During states of high heart rhythm coherence, alpha wave synchronization to the heart's activity significantly increases.

The heart's afferent neurological signals directly affect activity in the amygdala and associated nuclei, an important emotional processing center in the brain. The amygdala is the key brain center that coordinates behavioral, immunological, and neuroendocrine responses to environmental threats. It compares incoming emotional signals with stored emotional memories, and accordingly makes instantaneous decisions about the level of perceived threat. Due to its extensive connections to the limbic system, it is able to take over the neural pathways, activating the autonomic nervous system and emotional response before the higher brain centers receive the sensory information.

Another important distinction involves understanding the role of breathing in the

generation of coherence.

Because breathing patterns modulate the heart's rhythm, it is possible to generate a coherent heart rhythm simply by breathing slowly and regularly at a smooth sinusoidal rhythm of in-breath/out-breath breathing (in approximate 10-second cycles).

Both neural impulses and physiological feedback play a significant role in the

## THE HEART LEADS THE BRAIN

### EMOTIONS AFFECT:

#### ENGAGEMENT

SYNCHRONY + INTENSITY = EMOTIONAL ENGAGEMENT

#### DECISIONS

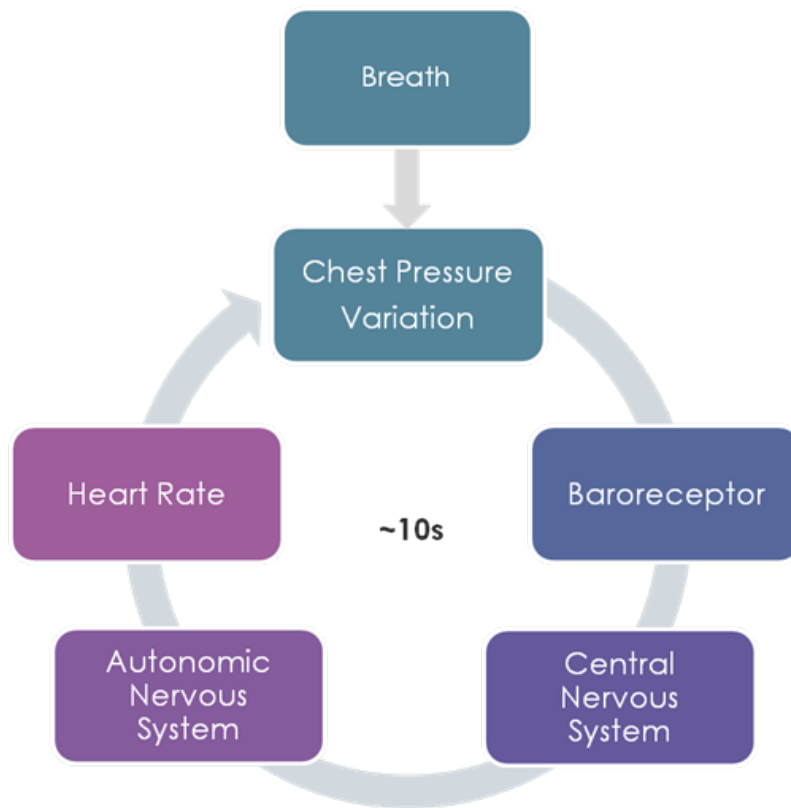
WE EVOLVED TO GET INFORMATION FROM OUR EMOTIONS.

#### MEMORY

EMOTIONS TAG INFORMATION FOR RELEVANCE







experience of emotions. In fact, respiration and emotions are so correlated that respiration and cardiorespiratory activity can be used to distinguish between different emotions. The medulla and pons, where respiratory rhythms are generated in the brain, have efferent and afferent connections with the limbic system. A study examining increased respiration rates and anxiety detected respiration-related anxiety potentials in limbic areas of the brain following inspiration. These studies further illustrate the strong relationship between

emotions and respiration.

The relationship between respiration and emotions further emphasizes the important role of respiration in influencing both unconscious and conscious neural activity and further highlights the influence of the body on the mind. Too often, consciousness models neglect the significant signaling and feedback from the body that influences neural activity; our model recognizes these inputs and incorporates them in our proposed mechanism. The autonomic nervous system is likely modulated by increased levels of cardiorespiratory coherence that occur during slow, deep breathing, and meditation.

The research team at Stanford University has shown that techniques which combine intentional heart focus with the generation of sustained positive feelings lead to a beneficial mode of physiological function they have termed psycho-physiological coherence. Correlates of psycho-physiological coherence include a sine wavelike pattern in the heart rhythms, increased heart-brain synchronization (alpha rhythms become more synchronized to the heart) and entrainment between the heart's rhythmic patterns, respiration, blood pressure rhythms, and other physiological systems.

Although psycho-physiological coherence is a natural state that can occur spontaneously while people are feeling genuine positive emotions and during sleep, sustained periods are generally rare. During states of psycho-physiological coherence, our inner systems function with a higher degree of synchronization, efficiency and harmony, which correlates with improved emotional stability, quality of emotional experience, health, and cognitive performance.

# Autonomic Nervous System

## Meditation-induced Homeostasis--Parasympathetic Dominance

