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"There is room in the heart for all the affections, as there is room in heaven for all the stars" - Victor Hugo

Just read [summary](#) first.

Psycho-physiological coherence: *your most authentic connection to allround wellness*

More than 2 decades intensive and well documented research proved that the Autonomic Nervous System enters into distinctively different states related to stress or relaxation as well as to more advanced forms of emotional coherence and self-management.

These different emotional and mental states are well documented and are especially significant at those places in the body where "mind matters most", that is, the heart and the brain. Through these dynamic and energetic organs we can directly measure the functional spectra of the body's various physiological and psycho-physiological states.

The possibility of simply and directly measuring physiological coherence can thus be a **powerful help with diagnosis as well as for training**, for example to handle (potentially) stressful situations.

Well known forms of physiological spectrum analysis are Heart Rate Variability (HRV) and the common type of brain wave analysis (EEG). In the mid-90's, effective methods for reducing stress and to increase the level of **physiological coherence or - entrainment** based on the HRV spectrum were developed by **Institute of Heart Math (IHM)**. The IHM method, a more sophisticated type of HRV spectrum analysis related to regular breathing, became the most widely used training system in its field. Conventional EEG spectrum analysis is used clinically, as well as for neurofeedback training.

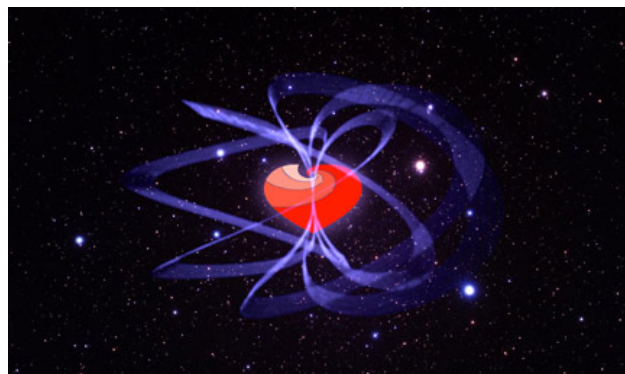
More **recent studies** have revealed a universal template of psycho-physiological coherence which applies to the heart as well as to the brain on a truly generic level. This has opened up new lines of research and **deeper diagnostic and biofeedback training possibilities**. The breakthrough insight in the field is that in a healthy situation, the Autonomic Nervous System (ANS) repetitively brings itself back into a state of **increased internal coherence**. These are called transient coherence states, which are characterized by a unique frequency spectrum. During these transient states, **the complete external wave power of the ANS fuses itself into a single point or linear flow, enabling your system to re-align itself with the inexhaustible personal and collective resources**.

Therefore, psycho-physiological- or internal coherence is the key to re-energizing, auto-regeneration and ultimately happiness. These recurring moments of elevated coherence, and not any amount of sports, relaxation, healthy diet, etc.. by itself, are the deeper cause of spirit in our biological system. It is the one and only source of emotional coherence, heartfelt communication and inspiration, as well as individual focus, motivation, competence and satisfaction.

Internal coherence is in the first place associated with an elevated feeling of:

- **Quiescence, or "stillness outside", or shared presence, and**
- **Focused Presence, or "stillness inside", or individual presence**

and following from that, increasing emotional control and advanced self-



Building Internal Cardiac Coherence requires openness and focused intent at the same time, plus a nurturing environment. Once coherence is achieved, the heart attracts ever longer waves of energy and information, fusing them into a nucleus we know as Self or Soul or Spirit..



CardioGem - Internal Coherence diagnostic and biofeedback program, showing respectively: raw data ECG, ECG Spectrum, Internal Cardiac Coherence (ICC), Heart Rate Variability (HRV) Spectrum, Tachogram (Beats Per Minute) and ICC history (statistics and other evaluation tools and biofeedback environment not shown here).

management and efficiency.

With respect to the ECG, this state is referred to as **Internal Cardiac Coherence, or ICC**.

Research history - from physiological to harmonic entrainment

Institute of HeartMath (IHM) not only developed concepts, methods and tools in the field of physiological coherence, but also pioneered a state called **internal coherence**. Their initial results, conclusions and terminology should be noted in order to have a more complete view on how the concept of internal coherence has developed.

IHM recognized that persons, who otherwise have a healthy amount of heart rate variability (HRV), were able to transition themselves into a **distinctive low-HRV state**, which IHM paraphrased as **"quiescence", "deeper level of self-management" or "hyperstate"**, and generally referred to as **"internal coherence"**.

IHM chose not to pursue this line of research, because at that time they found the concept of internal coherence too advanced for their public goals, in part because they were not conclusive about the true nature of this psycho-physiological state. IHM however concluded that there exists valuable information in the HRV-spectrum which is neither maximally utilized in the relatively coarse autonomic balance assessment ("gamma 1 over 2"), nor even in their more precise method of physiological coherence

("gamma 4 over 3"). This spectrum of information might theoretically provide clues to a deeper understanding of the low-HRV state, that is, psycho-physiological or internal coherence.

They further noticed that a sustained low-HRV state, measured as accurate ECG peak-to-peak ("R-R") intervals, is visibly reflected in the ECG spectrum. This nicely illustrated the fact that the HRV is directly linked to the raw ECG data.

Ref. IHM key papers:

[New Electrophysiological Correlates Associated With Intentional Heart Focus](#)

R. McCraty, M. Atkinson, W. A. Tiller, G. Rein
Subtle Energies 1995;4(3):251-262.

[The Coherent Heart](#)

Rollin McCraty, Ph.D., Mike Atkinson, Dana Tomasino, and
Raymond Trevor Bradley, Ph.D.
E-book monograph, Institute of Heart Math, 2006

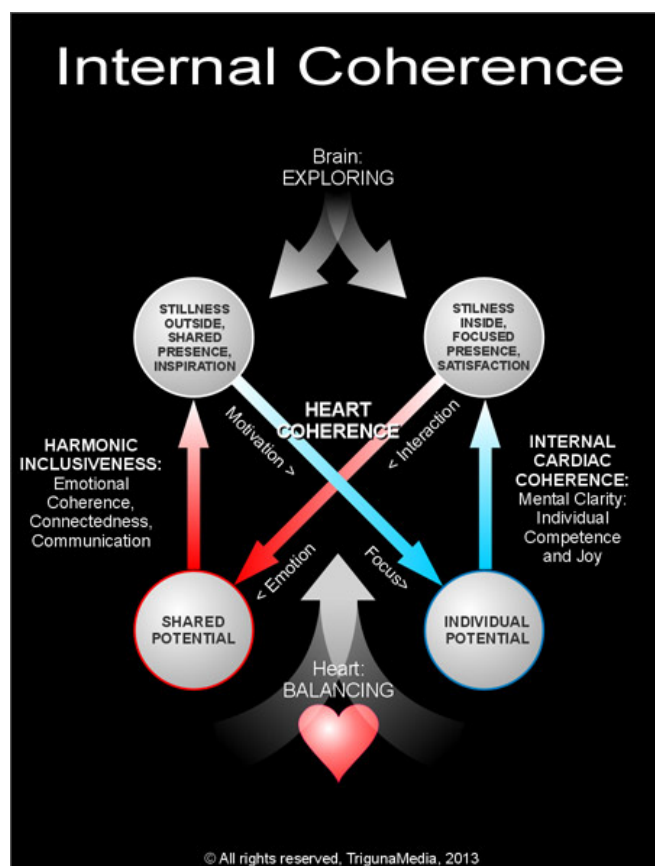
[All research on heartmath.org >](#)

From around 2006, **Triguna Media** independently developed a **generic approach of wave coherence, (wave matrix theory) applied to the psycho-physiology of the heart as well as the brain**. With respect to the heart, this led to a definition of coherence not based on recognizably or sustained low HRV states per sé, but on **the integral (ECG and HRV) wave dynamics** associated with it. [Note: summary of TrigunaMedia research papers here.](#)

This new epistemology appreciates a subtler level of information hidden in HRV and ECG spectra, providing a broader basis and context for internal coherence diagnosis and biofeedback training.

On the practical level, the measurements show that neither the momentary nor the integral levels of deep quiescence and self-management are simply inversely proportional to the amount of HRV. Namely, if this were the case it would mean that no significant amount of psycho-physiological coherence could be integrated in active, practical life. In other words, there must exist **another order of information** than one can read from a plain low autonomic power state, typically if it concerns a healthy person.

The information dynamically contained in the HRV spectrum was found by Triguna Media (Frank van den Bovenkamp) to be **nature's formula of fusing the cardiac slow wave power through Golden Mean / Fibonacci based spectral geometry, creating true emotional coherence**. In other words, it is not the reduction of HRV power through undefined causes, but the "in-vivo" harmonic fusion of HRV waves that generates emotional coherence and internal coherence in general. **The heart can turn itself into a focal point of life-transmitting slow waves by reciprocating the**



The complete psycho-physiological cycle. The brain has traded balance for freedom of exploration. If the explorations of others or those of yourself have got you into trouble, the heart is the place to go back to. [Print version here.](#)

geometric principles of life itself. With respect to the HRV-spectrum, the wave discipline creating fusion is called "Harmonic Inclusiveness" or "**Harmonic Entrainment**". With respect to psycho-physiology in general it is referred to as **geometric synthesis**.

Harmonic entrainment is a transformational approach. The goal is not to enter into low-HRV states per se - rather it is the healthy cultivation of transient states of autonomic fusion. The term "trans-fusion" is not a mere pun, as harmonic entrainment is really the wave-discipline of transfusing Spirit into the body.

HeartMath's notion that the sum total HRV wave predicts the ECG signal becomes profound the moment we understand the meaning of the **deep harmonic connection between both**. This is why your heart can carry you away to places you could not possibly have conjured up yourself.

*Philosophically, the fact that during a truly sustained low-HRV state, the nature of harmonic entrainment is not actually measurable does not mean that it is trivial with respect to the low HRV state. Rather, the low-HRV (transient) state is the very proof of the existence of harmonic entrainment in healthy persons. A very similar line of thinking is found for example in Sankhya philosophy, where the **undetectability** of the "sub-stratum" (consciousness) is considered proof of the existence of its inner dynamics. In fact, both refer to one and the same phenomenon - one axiomatically, the other through wave physiology. An elaborate approach enabling the application of these insights to practical psycho-physiology was given by the Indian philosopher P.R. Sarkar in the late '80's, forming the epistemological framework of internal coherence.*



Photo: Dolf Terlingen, Vitaalscan using CardioGem, Netherlands

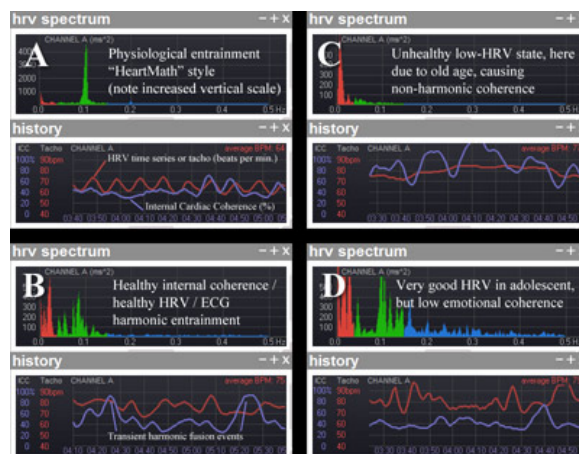
Internal Cardiac Coherence diagnosis and training fully recognizes and honors the pioneering and signalling work of IHM, and the significance of their initial conclusions, while providing a new way of looking at physiological spectra. This is how internal coherence analysis has developed into a professional application in the field of psycho-physiology.

Summary - psycho-physiological synthesis: the applied science of Consciousness

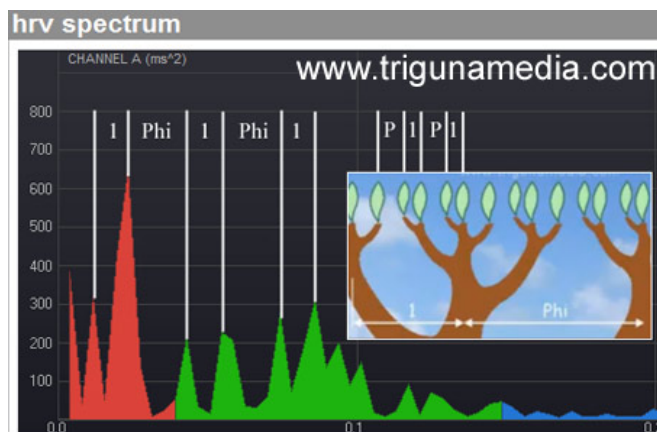
Physiological coherence diagnosis and training developed by Institute of HeartMath (IHM) is based on Heart Rate Variability related to regular breathing. The primary application of physiological entrainment is stress release through emotional control. It has a balancing effect on the Autonomic Nervous System.

Initially, the foundations of **Internal Coherence or Internal Cardiac Coherence (ICC)** were coarsely introduced by IHM, but they decided not to deepen this challenging and crucial line of research. Since 2006, TrigunaMedia's wave matrix-based approach of psycho-physiological synthesis proved to be the unique way to face the latter, thus providing new, exciting and original developments in the field. Its distinctive basis follows a transformational approach of geometric fusion of the slow waves of the Autonomic Nervous System.

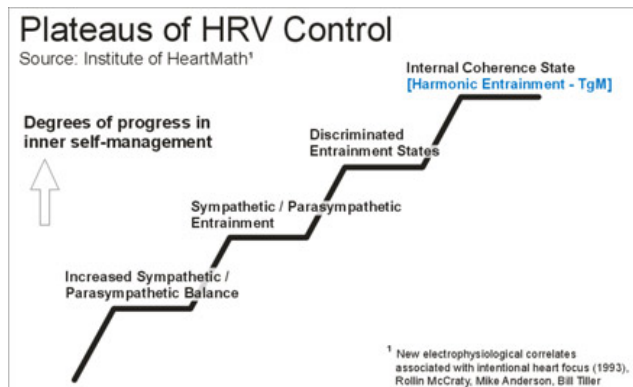
Its application is not primarily aimed at stress release but at entraining a person's access to their deeper, truly empowering states associated with "stillness outside" (quiescence, shared presence) as well as "stillness inside" (focused presence) as the basis for improving emotional and mental self-management.



CardioGem demos of Physiological Entrainment as well as Harmonic Entrainment, and very low respectively very high-HRV examples. Click to enlarge.



Harmonic Entrainment - CardioGem HRV spectrum compared with the Golden Ratio / Fibonacci spectrum as demonstrated e.g. in the "Tree of Life" movie. This is just a lucky hand picked sample, to show the principle. In reality, the low-HRV transient states are way too short compared to the minimum HRV spectrum window, to produce useable spectrum data. If however the low-HRV state would be longer than the spectrum window, no data could be extracted either. This is the unique feature of harmonic fusion: the proof of it's existence is the non-expression of the Autonomic Nervous System in an active, healthy person.



These dynamic, advanced states together make psycho-physiological synthesis an applied science of Consciousness, aimed at diagnosis and training.

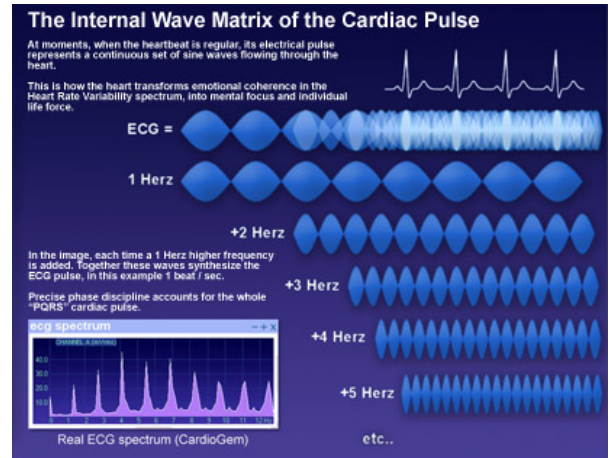
See summary of diagnostics and training for **health professionals** [here](#).

"Even as empiricism is winning the mind, transcendentalism continues to win the heart" - E.O. Wilson

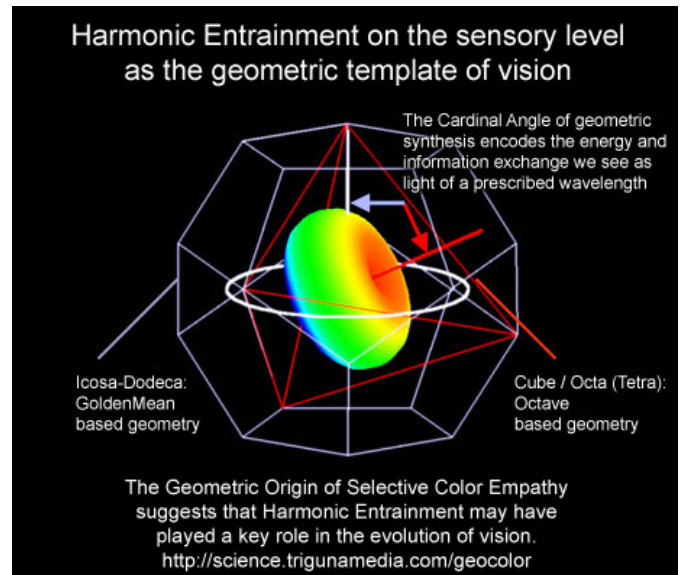
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[What can Harmonic Entrainment do for you?](#) >

[A brief history of coherence research](#) >
(www.heartcoherence.com)



The Internal Wave Matrix of the Cardiac Pulse. At moments, when the heartbeat is regular, its electrical pulse represents a continuous set of sine waves flowing through the heart. This is how the heart transforms emotional coherence in the Heart Rate Variability spectrum, into mental focus and individual life force. Click to enlarge.



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