

Heart-Brain Integration and Living a Soulful Life

Peter McLellan

Abstract:

Emotional & Spiritual disconnection between the heart & the brain creates a separation between our primary neurology & our soul. Attendees will learn about the neurological cascade between the cortex through the brainstem to the heart. The heart-brain integration recreates the deep connection between neurology & soul.

“The soul is the transcendent force that innervates us, allows self definition; our uniqueness that drives us to individuation. It is the glue that binds us together, the sacred vessel that contains our spirit and guides us on our journey toward enlightenment. The soul is our unique resonance and its true purpose is to seek union with the divine. It is the landscape for our neurology and neurology is the landscape for the expression of the soul. It is the language, expression and poetry of our inner life and the heart of our being”

Peter McLellan 2000

As human beings we live in a complex world of struggle, conflict, and confusion with only the occasional glimpse of clarity and harmony. How we handle stress and cope with distress is indicative of our inner workings, manifestations of our neurology and the connection between heart and brain.

- Do we lead a life of separation?
- Are we caught in a maelstrom of thoughts, emotions and feelings that do not make sense or seem to ever be resolved?
- Are we disconnected from our hearts and the deepest level of our being – the soul, or our thinking brain – our higher order neurology?

When we are governed by the mind we may live our life between the train tracks, not being able to move out and experience life, nature or the universe. When, under stress, or in the classic fight or flight that is where we are forced to reside.

On the other hand it may be that we may be more feeling, sensate beings and may be overwhelmed by our emotions, have poor cognitive understanding of our predicament, become de-energised, labile or even hysterical as these feelings transfix and immobilize us.

There is an inextricable connection between body, mind, emotion, reason, nature and being human.

Domasio (Looking for Spinoza, 2003) discusses the importance of emotion and feeling in the construction of the self. Employing rigorous 'hard science' he proposes that we have an emotional brain. Isabel Carlos, in the Biennale of Sydney, 2004, proposes an idea which overturns the most classic dichotomy in western culture – the separation between mind and body suggested by Descartes in the phrase 'orgito ergo sum' (I think therefore I am). The disconnection between head and heart made, and kept, alive since the 17th century has blinded medicine and confounded science and psychology.

In the 1980's Daniel Goleman argued the importance of Emotional Intelligence (EI), noting that people can be smart in a way that doesn't have anything to do with IQ scores. The IQ test doesn't measure vital life skills so much as the ability to manipulate certain data in tests. In the end this testing has been engineered to value more academic tasks over other styles of data analysis. It is perhaps one of the lasting legacies of the 1960's social reformations that questions of happiness and personal fulfillment began to flower and push through the barren soil of our confident, yet paranoid, technocratic post war progress. Timothy Leary looms large here: "Tune in, turn on, drop out".

EI has been defined by psychologists Mayer and Salovey as: "Emotional intelligence involves the ability to perceive accurately, appraise, and express emotion; the ability to access and or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge, and the ability to regulate emotions to promote emotional and intellectual growth.

"It is only with the heart
that one can see rightly."

–Antoine de Saint-Exupery

It was Goethe who once wrote "we are shaped and fashioned by what we love". Perhaps the best conception of emotional intelligence is that it represents a true understanding of what has been experienced; an understanding thus deepened into wisdom through the conjoining of brain and heart. William Anderson recalls the Sufis speaking, "of the eye of the heart, the opening of which is the true aim of religion, art and education". He calls this the intellect of love, a phrase recalled from Dante, "the awakening of which made manifest the inner beauties of the beloved and creation." (Geoffrey Bonwick; NSI Faculty)

Embryology

In the embryo the first organ to develop is the heart. This is followed almost immediately by the central nervous system and brain. The beginning of heart development initiates the development of all other internal organs. The development of the internal organs starts a new phase of energetic life.

Organ	First Day of Development
Heart	17
CNS	18
Liver/Gall Bladder	18
Kidney	22
Somites	20-30
Lungs	25
Gonads	23
(undifferentiated)	
Thymus	33
Pancreas	30

The process of somital formation is completed in the third and fourth week. Somites determine the types of tissue formation, including tissue that forms along the neural tube. These somites give rise to the vertebra and various body tissues, including voluntary muscle, bones, connective tissue and dermal layers of the skin.

The body of a seventeen-day-old embryo has a median axial structure, and is involved in the process of gastrulation; i.e. it forms an inner cavity. Development in an embryo moves from a radial symmetry to a bilateral symmetry and differentiation of mesoderms support this interpretation. Mesoderms give rise to muscles, bones, tendons and cartilage, precursors to structures that are in some way connected with the ability of the organism to move. Morphologically, an inner world develops.

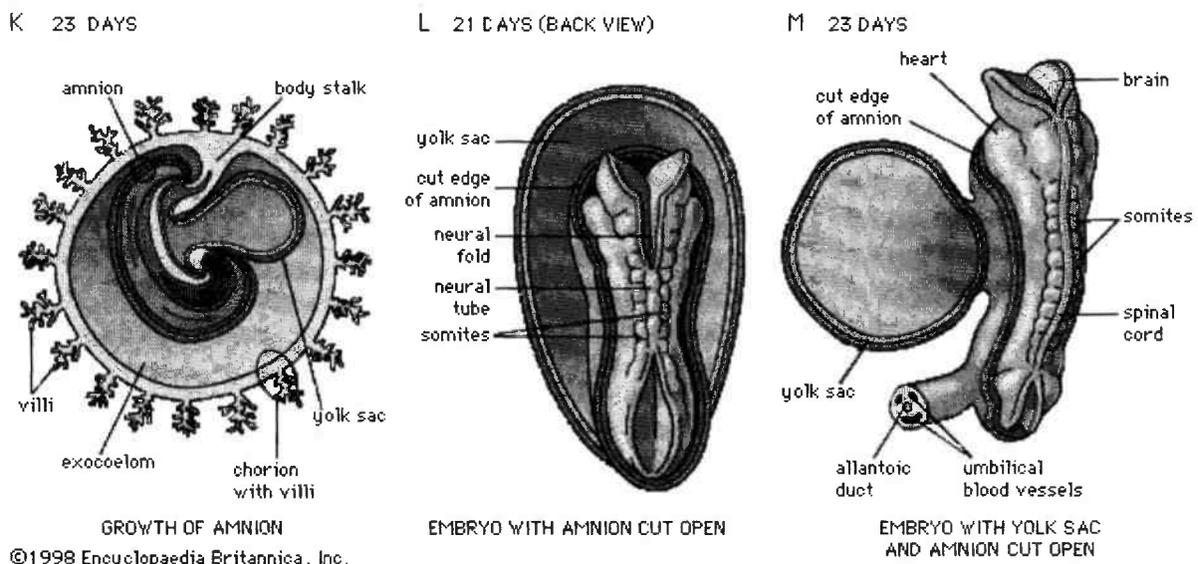
Development always follows the pattern of origin. Primarily the heart starts beating before the head starts developing. The development of the CNS and the rest of the body need massive blood, oxygen and nutrient supply. The head spirals forward

and the heart moves into the body. You can hear the foetal heartbeat from the 9th week onwards. Interestingly the heart actually starts to beat even before it is fully formed with valves and septa or muscular walls between chambers. The heartbeat is wired in. However, how the heart actually starts to beat is still somewhat of a mystery.

Fig. 1: *Encyclopaedia Britannica; Human Embryology of the Heart; Online Version*

Broken Hearted Syndrome

An overwhelming release of catecholamine (notably epinephrine and nor epinephrine) into the bloodstream along with their breakdown products and small proteins are produced by an excited nervous system. These chemicals can be toxic to the heart, effectively stunning the heart and causing symptoms similar to a heart attack, including chest pain, fluid in the lungs, shortness of breath and heart failure. This was found by Dr Ilam Wittstein of John Hopkins Medical School. He and others have termed this condition stress cardiomyopathy.



Nineteen patients were seen by Dr Wittstein between 1999 and 2003. These patients presented heat attack symptoms after sudden emotional stress: news of the loss of a loved one, close relative or friend, shock from a surprise party, fear of public speaking, armed robbery or assault, court appearance or a car accident. Testing by angiogram found no blockages of arteries, no sign of elevated cardiac enzymes, and no irreversible muscle damage. Recovery rates were much higher than after a heart attack. A hallmark feature was the heart's unique contraction pattern and also a distinctive EKG.

In contrast, recovery from heart attack can take weeks or months and frequently the heart muscle damage is permanent.

It seems that the autonomic nervous system cannot cope. There is a battle between the sympathetic and parasympathetic nervous systems.

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What is really going on here? There seems to be a separation at the deepest level of being: the soul. The Greek philosophers believed that the heart was the seat of the soul. This idea is also supported by other traditions including the teachings of Taoist priests. In the Vedic and Yogic traditions there is a wonderful saying: "when the mind is still it resides in the heart". This sums up the whole premise of healing the rift or separation within. There is a disconnection from life, love and the self, striking at our very soul and can lead to soul damage and under extreme circumstance without resolution, to soul loss.

The soul is believed to be the vital link between spirit and the rest of our being. It defines the nature of our presence in the world as well as in mind and body (Ralph Locke; Ikon Institute). In Ken Wilbur's structure, the soul is diminished. Therefore, mind, body and presence in the world are diminished and life energy is attenuated. Separation occurs. And with this separation, whether it be mild or severe, the energy is diminished in a relative sense.

Shamanism, at its core, is about the journey of the soul. It is the shaman who can give us a view into the world of the person and the status and health of the soul. Again Ken Wilbur provides us with a map of our entry and transport through this life:

Spirit → Soul → Mind → Body → World

Wilbur sees these elements related in a variety of ways, but one that is important is the linear sequence. Left to right describes entry into the world and right to left describes our exit from the world.

The shaman, often described as a steward of the soul, travels into the landscape of the person and looks for their personal medicine or totem. This totemic presence is not only symbolic but represents the soul. It is their unique resonance in nature and the world. If the totem is present and in fine fettle then the soul is fully embodied and happy. If the totem is not in good shape, is separate, or, in extreme cases, missing then the shaman must act to repair the damage and restore the soul and therefore the person to enliven and bring them back into the world more fully. If the soul is missing - which is rare - then the shaman must travel in the spirit world

to retrieve and restore the soul to its host so they can re-establish their connection with the stream of life and again participate fully in the world. This is a highly skilled and dangerous process. (Don't try this at home). All shamanic activity is carried out in an altered state of consciousness.

Case Study - Mary, 34:

Names in all case studies changed

Mary had lived in Nimbin, a commune in New South Wales, up until the age of 17. She had used marijuana and magic mushrooms from the age of 8. Her parents are separated. Her mum still lives in the commune and has her daily puff. Dad is a comic and street performer whom, Mary says, lives his persona totally.

Mary contacted me as she had electro magnetic sensitivity (EMFs) and couldn't even hold a mobile phone or send a text without becoming distressed; she watches TV infrequently, finding that when she does so she has to do so from a long way away; she has no computer and is constantly battered and bombarded by electrical and environmental activity. After supplying me much detail about her life she blurted out, "I have a broken heart".

The treatment that followed involved a full energetic, cortical, and heart-brain integration balance, as well as an extensive emotional release. Reassessment of her EMF sensitivities after the balance demonstrated that she could now tolerate these frequencies.

Mary says she will definitely continue treatment and will be offered shamanic bodywork to harmonise body, soul and spirit

and help her be more fully present in this world, which will return her to the flow of her life.

A State of Separation

*When you enter the world
You separate yourself
from the present moment*

*You separate yourself from the true source
Of love power and wisdom
When you enter the world you enter into
A state of separation*

Leonard Jacobson: Sounds from Silence

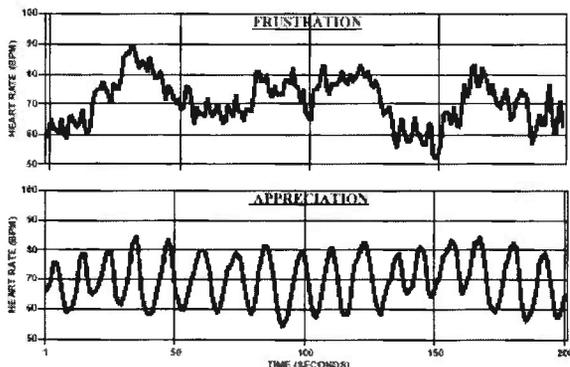
When I use NSI and shamanic healing many of the people I work with relate their lives to one of the following metaphors:

- 'I feel like I am dying'
- 'I have nothing to live for'
- 'My life has no meaning'
- 'I am lost and alone'
- 'I live my life on the edge'

One of the major concepts in shamanic practice is the stream. In shamanic visionary practice the shaman sees the totem/soul of the client in relation to the stream. Is the totem in the stream (of life), or are they separate, outside of, or not in the flow. Is the stream wide, deep and to the horizon, or is it full of rocks, eddies, shallow, dried up or divided. It is the job of the shaman, as visionary practitioner, to reconnect the client to their totem/soul and re-establish them in the stream and flow of life.

HeartMath

The HeartMath system was created by Doc Childre, a stress researcher, author, and consultant to business, science and medicine. Heart Rate Variability monitors, developed by HeartMath, show that the heart when in coherence forms a neat sine wave-like wave form.



Heart Coherence in Frustration and Appreciation

From Institute of HeartMath, www.heartmath.org

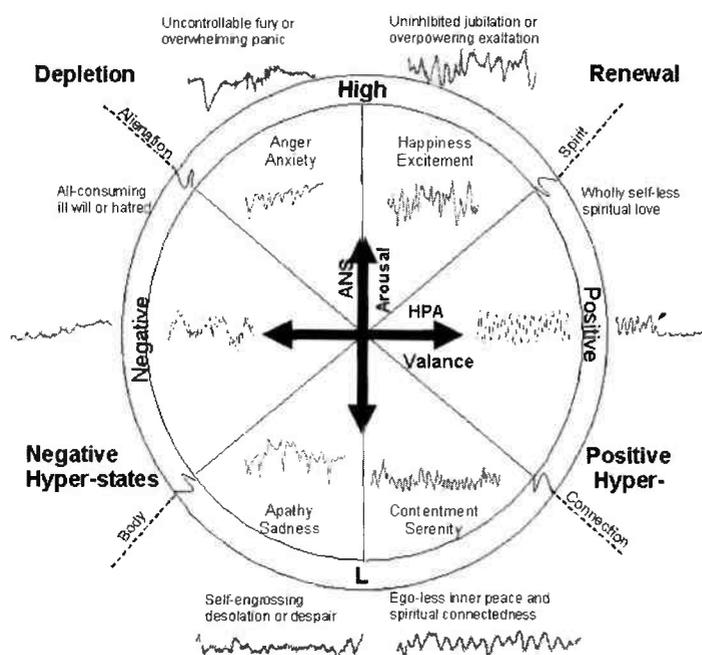
If one were to think of an x and y-axis, then the positive gradient in the curve represents the time interval during which heart rate increases and the interval between each heart beat decreases. The negative gradient represents the time interval during which the heart slows down and the beat interval increases. The former represents the stimulatory phase of the curve and the latter the sedatory: the stimulatory a factor of the sympathetic nervous system, and the sedatory a factor of the parasympathetic nervous system. In this way one can see that the HRV is plotting an oscillatory system.

The field of the heart has been measured at 60 times the field of the brain. Given that the heart is an oscillating system, and given that all oscillating systems tend over time

to entrain to each other, it is reasonable to assume that if the heart is coherent, given its overall field strength, then other oscillating systems will become coherent. The HeartMath Institute has measured this in a comparison between the immune system and the heart. Whenever high-level coherence was achieved by a subject under test conditions, their immune systems entrained rapidly and achieved high levels of coherence. If the heart rate variability becomes highly coherent we may ask the question as to whether the brain would also become coherent.

“Whilst it is axiomatic that systems will tend to entrain to more powerful systems, and it would be reasonable to assume that, given a coherent heart, the brain will follow suit. My observations suggest this to be a partially limited truth. The brain is a highly complex zone of the nervous system wherein multiple convergences not only between the left and right hemispheres, but also the limbic system and cortex, limbic system and brainstem, cerebellum and the overall harmonic of the brain. The more brain stress or static there is the more compensated the neurology becomes, and the more fractured and complicated the convergence zone activity” (Geoffrey Bonwick; NSI Faculty).

One only has to refer to the many types of brain switching discovered by Charles Krebs PhD in his groundbreaking research for his book, *A Revolutionary Way of Thinking*.



Depiction of Everyday HRV Waveform States—from HeartMath Institute

These types of deep switching include: Thalamic Reticular Switching; always Right –Left: Deep Survival Switching; within the centres of the Periventricular Survival System or in the limbic survival processing areas: Right – Left Survival Switching; mental processing expressed as laterality confusion: Top – Bottom Switching, a mental emotional switching resulting in the inability to integrate our emotional experience with our rational thinking: Front – Back Switching; our now time consciousness is located in the frontal lobes, while the back of the brain houses our association cortices storing our long term memories that may be paired or associated with specific stimuli linked to strong survival emotions. This can totally block learning life’s lessons (Charles Krebs, LEAP 1 Manual).

I have discovered another profound level of switching that tends to shut down the global integration of brain function. I call this Primary Neurological Switching. When

this is present the client will find cognitive, emotional, mental and thinking processes very difficult, always frustrating and often debilitating.

I worked with a client who is an emeritus professor of neuroscience, holding international patents on various drugs and many post-doctoral fellowships. With kinesiology testing it was found that he had only 3% access to global integrative function.

When we discussed this, the client could totally relate to this shutdown in function. When asked how he had achieved so much; he chimed, “it nearly killed me”. Incidentally

he also had an incredible amount of physical and emotional stress, to the point of ‘crash and burn’; a lot of body pain, especially trouble with his knees; a fiery relationship with his second wife; he was very disconnected from his young daughter; and had problems with alcohol.

Neuro Spiritual Integration

Neuro Spiritual Integration (NSI) is my brainchild and life work. It embodies all the above concepts of balancing body, soul and spirit through our neurology, so that as human beings we can live, travel and dance in the light of a life fully lived.

The system uses acupuncture techniques in a unique way to balance these layers of being to create a harmonic resonance in and between all the layers of who we are. There is an imperative that as practitioners we look at

these layers so that we don't end up treating the symptoms or components of disease when often the causes are more of a spiritual nature.

In an energetic sense many healing systems view the source of our health crises as beginning way out in the spiritual layers of our energetic structures. Barbara Brennan in her classic book *Hands of Light* has done so much wonderful research in this area.

Research from Geoffrey Bonwick
(Founding Member, NSI Faculty)

The Heart-Brain protocol developed by Peter McLellan demonstrates the level of connection between heart and head, mind and body, soul and world. This protocol involves formatting, with Applied Physiology language, the neurological cascade between the brain and heart. It starts with the cortex, limbic system, brainstem, spinal cord and Touch for Health muscles that balance the heart itself. Once these structures are harmonised the soul is accessed through a combination of acupressure and visualisation to reconnect the client with the most sacred centre of their existence.

Geoffrey Bonwick has completed a three and a half year research study on the efficacy of the NSI Heart-Brain Protocol, and has produced some very positive statistics (see Appendices for full study). He used the Heart-Rate Variability monitor from the HeartMath Institute. His research was to measure low level, medium level and high level coherence on variation in heart rate. Sessions were conducted at 6 monthly intervals. Eight testing sessions were conducted.

In the control group (which did not receive a Heart-Brain NSI protocol) a reduction of 14.74% in low level coherence (LLC) and an increase of 2.08% were achieved over a 42 month period in high level coherence (HLC). In the 2nd group (Which received the NSI Heart-Brain Protocol), there was a reduction of 40.33% in LLC and an increase of 18.74% in HLC over the same time frame.

NSI Case Studies

Steven

A young boy, Steven, came to the clinic recently for help with his learning difficulties. He had major birth trauma. Medical intervention was needed during the birth and forceps and suction were both employed. His head was misshapen.

Steven's mother had tried everything including going to two other kinesiology practitioners.

Whilst on the table he was agitated and needed to go to the bathroom but held on and wet himself. LEAP brain integration procedures including NSI Primary Neurological Switching were used in the first session. In the second session the Corpus Callosum was balanced using the Heart-Brain Integration protocol was carried out. Steven became very calm and spontaneously said, 'I feel like I'm sitting on a comfortable couch drinking a warm strawberry milkshake'. His mother was quite amazed at the change.

Jack, 57

Jack was recently diagnosed with cancer. Jack has a history of separation, starting with caesarean birth. At birth he had subluxated hips and wore a cast for part of his early life.

Jack studied medicine and became a physician then moved to medical research, executive coaching and running his own consulting to the corporate world. He lost his mum at 27 and has a strained relationship with his dad. They are apparently too similar. Jack seems aloof but is really very shy. He couldn't play sport as a kid so he turned his interest to the arts and academia, where he has excelled. He lives in the mountains and admits to being "a bit of a recluse". He has always felt the world has rubbed him up the wrong way.

The first session involved Primary Neurological Switching, as Jack had little access to basic function, cortical integration and Heart-Brain Integration. In further sessions Jack had some structural work, using Neural Organisation Technique, with balancing of the immune and endocrine systems with particular emphasis on neurological skin direction as when this is not happy the client will always feel they are working against the grain.

Jack reports that he feels like a new person and just feels amazing. We still have some work to do but life is moving in the right direction and the stream is flowing for the first time in a long time.

Conclusion

As can be seen from the overview of heart-brain research, embryological development happens from heart to head then to the rest of the body. The essential nature of being fully ensouled in the world, and fully embracing, embodying and enlivening our existence and placing ourselves in the stream of life is our birthright.

We often enter this world and immediately become separated. We leave the safety of the womb and are thrust into this unfamiliar and strange place without the resources, whether developmentally, emotionally or spiritually to cope. We rely heavily on our mothers and families in an ever-shrinking social support network. Life can deliver many journeys. For some it is a journey with much deep trauma and misery; for others it is a safe passage for the soul.

What sets us up for success or failure, happiness or sadness and depression? These are questions for all of us to find our own answers.

However, through integration of our heart, mind, soul and spirit we can re-enter the world, travel in the stream of life, and fully embrace our potential to "be" in the world of all possibilities. Healing in its essence is reconnecting to the life force that gives us meaning and presence, as James Hillman attests, to express our Daemon, our sacred seed.

We need strong, effective and efficient tools in this modern age to help us complete this task. Neuro Spiritual Integration and, importantly, Heart-Brain Integration can assist us on this road called life.

APPENDIX

Summary of Results of Follow Up Study into NSI Heart-Brain Integration

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Summary

A longitudinal trial of the NSI Heart-Brain Integration protocol was conducted in clinic from 31 January 2003 to 31 July 2006 tracing the effects of bi-monthly treatments of this protocol on a pool group of 24 clients. Using the technology of the HeartMath institute to measure Heart Rate Variability (HRV), clients were measured at 6 monthly intervals prior to a treatment for that session. Eight testing sessions were conducted. In the control group (which did not receive a Heart brain NSI protocol) a reduction of 14.74 percentage points in Low Level Coherence and an increase of 2.08 percentage points was achieved over a 42-month period. In the 2nd group (which received the NSI Heart Brain Protocol), there was a reduction of 40.33 percentage points in Low Level coherence and an increase of 18.74 percentage points in high-level coherence over the same time frame.

Discussion

Heart/Brain connection

Key words: Heart rate Variability
Coherence
Accumulated entrainment

The heart beat rate is subject to normal fluctuation. The ideal fluctuation is a rhythmic increase and decrease in heartbeat

variability (HRV) which generates a repeated sine curve. HRV is defined as the variation of time between heartbeats recorded over time. Actual HRV behaviour is typically a more random pattern, often with reduced amplitude, and marked by sharp spikes. The nature of the heart rate variability describes the particular rhythm of an individual's heart beat characteristics, and this has a number of effects on other body systems.

The heartbeat generates a torus shaped field 60 times greater than the field of the brain. It is considered the primary oscillating mechanism in the body. All other oscillating systems function in accordance with the coherence or otherwise of the heart beat variability. That is, other body systems entrain to the heart's rhythm be it regular or irregular. The ANS, for example, is a system comprising a regular oscillation between the parasympathetic and sympathetic nervous systems (PNS and SNS, resp.). Activation of the SNS is coincident with the increase in heart rate variability (i.e. an increase in beats per minute [BPM]) By coincident is meant a simultaneous event within a greater system where there are loops of causation going both ways. The increase in BPM activates the ANS and the SNS increases the BPM. Activation of the PNS is coincident with a decrease in BPM.

The immune system is another with an oscillation pattern. Studies mapping the behaviour of the immune system and HRV, carried out by the HeartMath group in California, reveal the coincidence of the two. Various regular markers of enhanced immune function also show a significant relationship to a more regular HRV.

The neuro-cardiological function of the heart receives its information from the amygdala. In turn the amygdala receives it from the thalamus. The quality of incoming information modifies the HRV and this is then transmitted through the body neurologically (back to the amygdala, the brain stem, and to higher cortical centres), hormonally, and biophysically. An event with stressful associations feeds up to midbrain and brainstem centres to cue increased fight/flight responses, switch off digestive functioning, reduce cortical processing abilities, and raise “perceived” levels of stress. That is, the heart acts as an extension and amplifier of the limbic system of the body. It contains its own “perception” of an event. Cortical perception, therefore, is always post-perception.

To the extent that an event received as stressful inhibits cortical processing, there may be little or no perceived perception at all. By contrast, an event viewed as congruent creates the neurocardiological, hormonal and biophysical environment for cortical facilitation.

HeartMath Freeze Framer

The Freeze Framer is a software programme developed by the HeartMath Company based in California. The programme monitors Heart Rate Variability (HRV) in a stationary position. In other words, it records the regularity of heartbeat variations. The subject is a seated position with a finger monitor feeding the information into the programme which displays instantaneous HRV as well as generating data relating to overall levels of coherence taken over extended time periods.

Data pertaining to these extended periods is sorted through an algorithm for accumulated entrainment. Entrainment is an expression of coherence over time. The base period is approximately 9 seconds in duration. Fluctuations in heart beat variability are recorded in that time interval. A three level algorithm measuring coherence is then generated within this unit period (low level coherence, i.e.. incoherent HRV, medium level incoherence, and high level coherence). The accumulation of these units of time generates the algorithm for accumulated entrainment. This is then displayed as a bar graph displaying the amounts of five-second intervals corresponding to these levels of coherence. An accumulated entrainment graph is then generated by according high level coherence (HLC) a score of +4, mid level coherence (MLC) +1, and low level coherence (LLC) -4.

From a base line of zero, a subject with consistently high levels of coherence may expect to reach a score of 100 within seven minutes. In order, however, to avoid the possible negative selfassessments of “negative” scores, the programme itself has no negative field: the base line is the lowest AE score one can register. LLC readouts only reduce the AE score if it is already positive. If zero, it remains at zero. For the purposes of this test, however, actual AE scores were calculated and are tabulated below.

Trial

Trial structure

24 clients were chosen for the trial. Their ages ranged from 16 to 68, and include 10 males and 14 females. These were chosen

at random and none had any clinical history of heart arrhythmia. Twelve of the group received the NSI protocol and the other 12 a different procedure designed to facilitate left/right brain integration. None knew which treatment they receiving but there was no attempt create an entirely placebo treatment - as all bodywork forms tends to create a change in the clients system of some sort if for no other reason than a mental feedback loop signifying that they are receiving a treatment. The notion “placebo” in this context is essentially meaningless. Instead, therefore, a control protocol was chosen that has as its general intention nothing more than improving left/right brain integration directly. Since it is clear that neurology functions as a series of convergence zones then the general cortical to amygdala/neuro-cardiology convergence zone would play some role in changing the HRV but it was hoped that this would nevertheless provide a measure of control.

Terms such as “neuro-spiritual”, “heart-brain”, and “cortical balance” were not used. The procedure was referred to as “NSI protocol”. Each subject was made clear as to the reasons for this. Although all 24 clients were known to the practitioner, none had had previous contact with the subject of HRV nor been exposed to the Heart Math Freeze Framer. Many of the 24 were the subject of an earlier study into HRV.

Subjects were divided into two groups of 12. The control group (G1) of 5 males and 7 females were given a cortical balancing protocol every second month. After 3 sessions their HRV was taken in a seven-minute session prior to treatment on that day. They received eight HRV measurements in

total. No one had visual access to the monitor at any stage during his or her session.

The second group (G2) was also a 5 male/7 female population and were given two monthly treatments, theirs being the Heart Brain Protocol. Six monthly their HRV was tested, without their seeing the results, and eight such tests were made.

Note that some but not all of the subjects of the previous study were used. In the previous group 16 subjects were used, 14 of which continued the study. Of the two that did not, one moved interstate and the other, a 76 year old, died. Eight other clients were also involved.

Results of trial:

Group 1 (G1):

Where LLC = low level coherence
 MLC = medium level coherence
 HLC = high level coherence
 All numbers are expressed as percentages. Figures may not add up to 100 due to rounding.

After seven minutes of monitoring, the mean coherence scores (MCS) for the twelve subjects were as follows. The dates correspond to the date by which the last client had been measured.

Not all were measured on the same day.

G1 S1-12	LLC	MLC	HLC
31/1/03	54.00	42.58	3.42
22/7/03	46.50	51.50	2.00
15/1/04	45.91	48.25	5.84
31/7/04	47.33	46.00	6.66
13/12/04	44.08	50.00	6.92
4/8/05	44.66	50.33	6.00
2/2/06	41.92	52.5	5.58
31/7/06	39.25	55.25	5.50

Group 2 (G2):

Where LLC = low level coherence
 MLC = medium level coherence
 HLC = high level coherence
 All numbers are expressed as percentages. Figures may not add up to 100 due to rounding.

After seven minutes of monitoring, the MCS for the twelve subjects were as follows. The dates correspond to the date by which the last client had been measured. Not all were measured on the same day. Note that the first measurement is the MCS prior to the first NSI protocol application. There was no NSI protocol applied in the month of July 06.

G1 S1-12	LLC	MLC	HLC
31/1/03	64.25	35.25	0.50
12/08/03	37.25	54.66	9.08
15/01/04	35.66	53.25	11.08
30/7/04	33.58	53.42	13.00
12/02/05	30.00	54.25	15.75
2/02/06	26.50	59.08	14.42
31/7/06	23.92	56.84	19.24

Discussion of Results:

Both groups showed improvement over this period. The group G1, the “control group” showed some improvement mainly in MLC scores. The HLC average score did not significantly alter after one year of treatment, peaking at 6.92%. The group G2 showed a significantly greater overall improvement in heart-brain integration as measured by the HRV than the control group. All of the G2 improved to some extent, whilst three of the control group showed little or no change. G2 showed an increase from a base figure of 0.5 percentage points to 19.24% in HLC. Mean Accumulated Entrainment Scores for the two

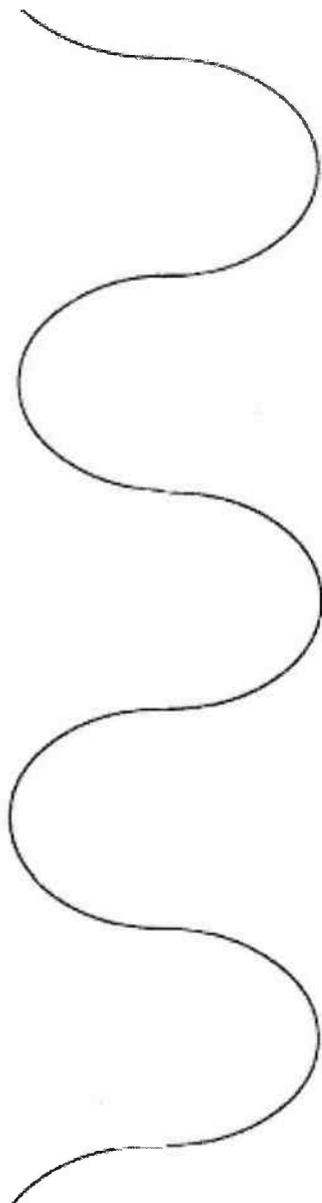
groups are pending. The reduction in LLC in the control group was 14.75 percentage points whereas the corresponding reduction in the group receiving the Heart Brain Protocol was 40.33 percentage points.

It should be noted that the control group, to begin with, showed better coherence than the Group 2. This needs to be born in mind when comparing final figures.

It should also be noted that over time cortical work showed a significant cascade effect on Heart Brain coherence. But in terms of coherence it is a slower journey and given that fewer achieve HLC it is a more limited one than an approach, which seeks to create convergence between the two oscillating systems of the head and the greater one of the heart. That is, the application of the NSI Heart Brain protocol was able to induce changes in its group population that led to substantial increases in high level coherence.

It is in the realms of HLC that great possibilities open up. The effects are many: from the physiological and pathological to the outermost reaches of humanistic psychology. Precisely what coherence engenders is perhaps the most fascinating question of all. How much more of ourselves becomes available when greater coherence is achieved? How closer do we come in realizing our own potentialities? How much of our own access to our deep selves, or the “soul” of traditional thinking, lies bound within such high level coherence? These are questions conventional studies struggle to answer but which are worthy of our ongoing deepest consideration.

Brain Wave



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