



# DELTA LIFE SKILLS<sup>sm</sup>



**EMOTIONAL FREEDOM IS IN YOUR HANDS with REB<sup>sm</sup>**

***Integral Energy Psychology***

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## **PART ONE: THE RADIANT ENERGIES BALANCE (REB)<sup>sm</sup> PROTOCOL: PHILOSOPHY/RESEARCH/THEORY BACKGROUND©**

### **Section:**

- 15. The Autonomic Nervous System (ANS): New approaches to its balance and functioning
  - 15.1. Heart Rate Variability (HRV), anxiety and the autonomic nervous system (ANS)
    - 15.1.1. Traditional psychology/psychiatry research
    - 15.1.2. Heart Math and Freeze Frame
  - 15.2. The Poly Vagal theory of the parasympathetic nervous system
  - 15.3. The heart's intelligence, brain and ?spirit
  - 15.4. Radiant Energies Balance (REB)<sup>sm</sup> protocol as counter conditioning

### **15. THE AUTONOMIC NERVOUS SYSTEM (ANS): NEW APPROACHES TO ITS BALANCE AND FUNCTIONING**

#### **15.1. HEART RATE VARIABILITY (HRV), ANXIETY AND THE AUTONOMIC NERVOUS SYSTEM (ANS)**

##### **15.1.1. TRADITIONAL PSYCHOLOGY/PSYCHIATRY RESEARCH**

HRV research from the traditional psychology/psychiatry has demonstrated the importance of balance between the sympathetic and parasympathetic branches (and the associated "Autonomic Nervous System responsitivity, sensitivity, and flexibility"). In general, the sympathetic branch of the autonomic nervous system speeds heart rate, constricts blood vessels, and stimulates the release of stress hormones in preparation for action (the Fight-Flight, "inner warrior" reaction) while the parasympathetic branch slows heart rate and relaxes the body's inner systems (the "Freeze" response from an overactive primitive vagus) and generally maintains optimum daily functioning ("inner peace keeper" reaction). Research done in 1994 states that a pattern of decrease in HRV and cardiac vagal activity (the vagus nerve controls the parasympathetic branch) "...is common to a variety of disorders... as well as the condition of worry... and may represent the chronic state of autonomic cardiovascular control found in GAD [Generalized Anxiety Disorder]." (Thayer, Friedman and Borkovec, 1996, p.262).

Traditionally, up to about 1994, emphasis was focused on the overactive sympathetic branch. While

this is a problem, the balance between the two branches appears more critical. The research reported in the article concluded "Parasympathetic control is more effective in modulating beat-to-beat changes in... [Heart Rate] and would allow for enhanced responsivity and sensitivity [of the Autonomic Nervous System]... The loss of complexity and variability in physiological systems in general, and in the cardiovascular system in particular, has...been linked with a number of diseases and dysfunctions. Beside physiological disorders such as fetal distress syndrome, sudden cardiac death, ventricular fibrillation, hypertension, diabetes mellitus, and coronary atherosclerosis, several behavioral and psychological states such as acute and chronic smoking, acute and chronic alcohol ingestion, sedentary lifestyle, depression, panic disorder, and aging have all been associated with a loss of heart rate variability and complexity... the 'decomplexification' of physiologic dynamics is a generic functional response associated with various pathological states... [T]he dysfunction involves reduced autonomic flexibility. As such, the similarities seen among various disorders... represent the underlying functional pathology [i.e., lowered responsivity, flexibility and sensitivity of the ANS] that may be common to many disorders." (Thayer, Friedman, and Borkovec, 1996, p.262) In a similar vein, Hoehn-Saric and McLeod conclude "[D]iminished autonomic flexibility was found in all examined anxiety disorders. It will be interesting to see whether this decreased autonomic flexibility is specific for anxiety disorders or if it can occur in other psychiatric disorders as well." (Hoehn-Saric and McLeod, 1993, p. 248)

Stein and Kleiger (1999, p. 257) conclude "Use of HRV to explore underlying physiology... is best accomplished with spectral analysis of data from short-term monitoring periods under controlled conditions..." which makes it very appropriate for the analysis of psychotherapeutic outcomes. (see figures 15.1 and 15.2 for a schematic of the Sympathetic and Parasympathetic branches of the Autonomic Nervous System)

**THE AUTONOMIC NERVOUS SYSTEM (SYMPATHETIC)**

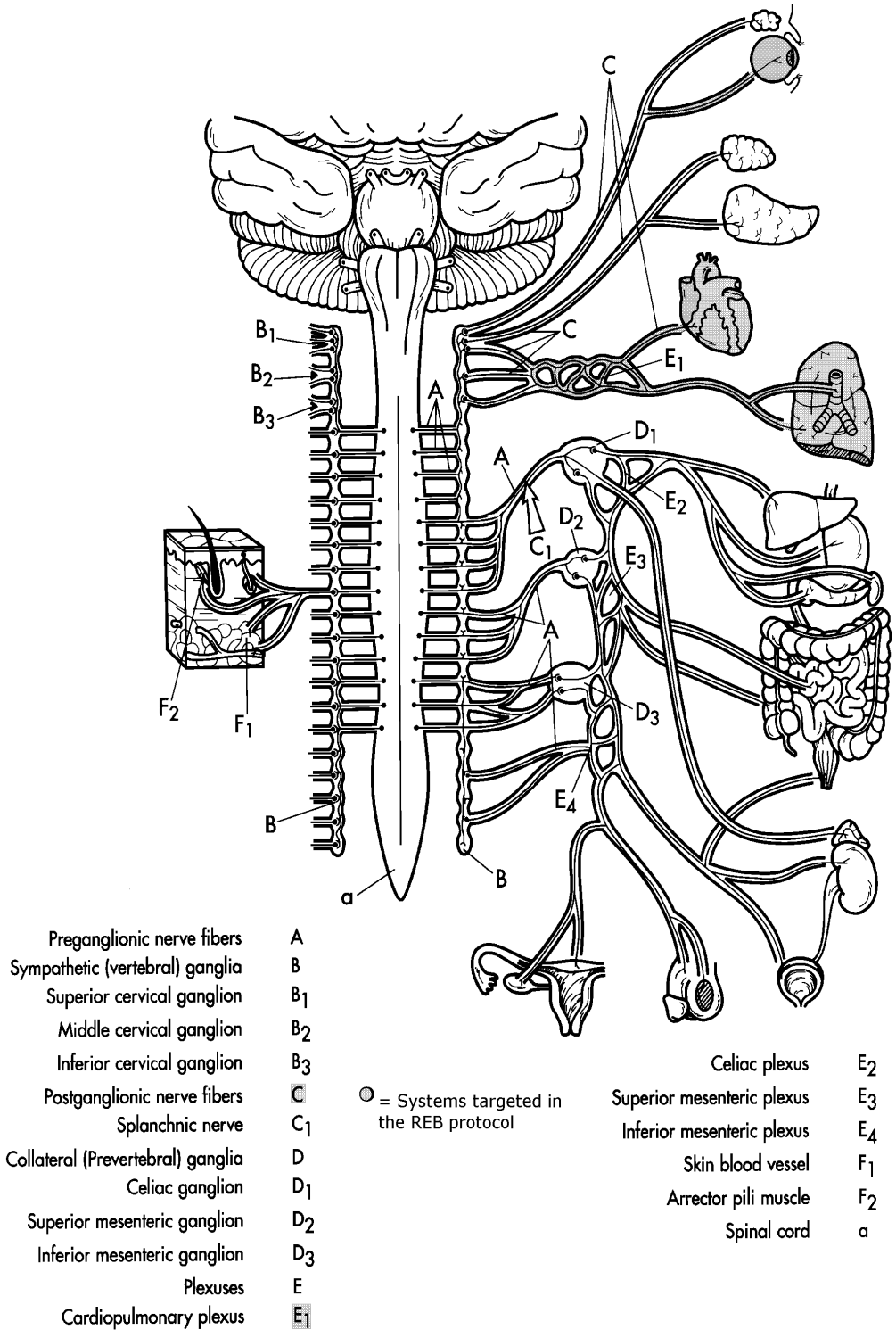


Figure 15.1

# THE AUTONOMIC NERVOUS SYSTEM (PARASYMPATHETIC)

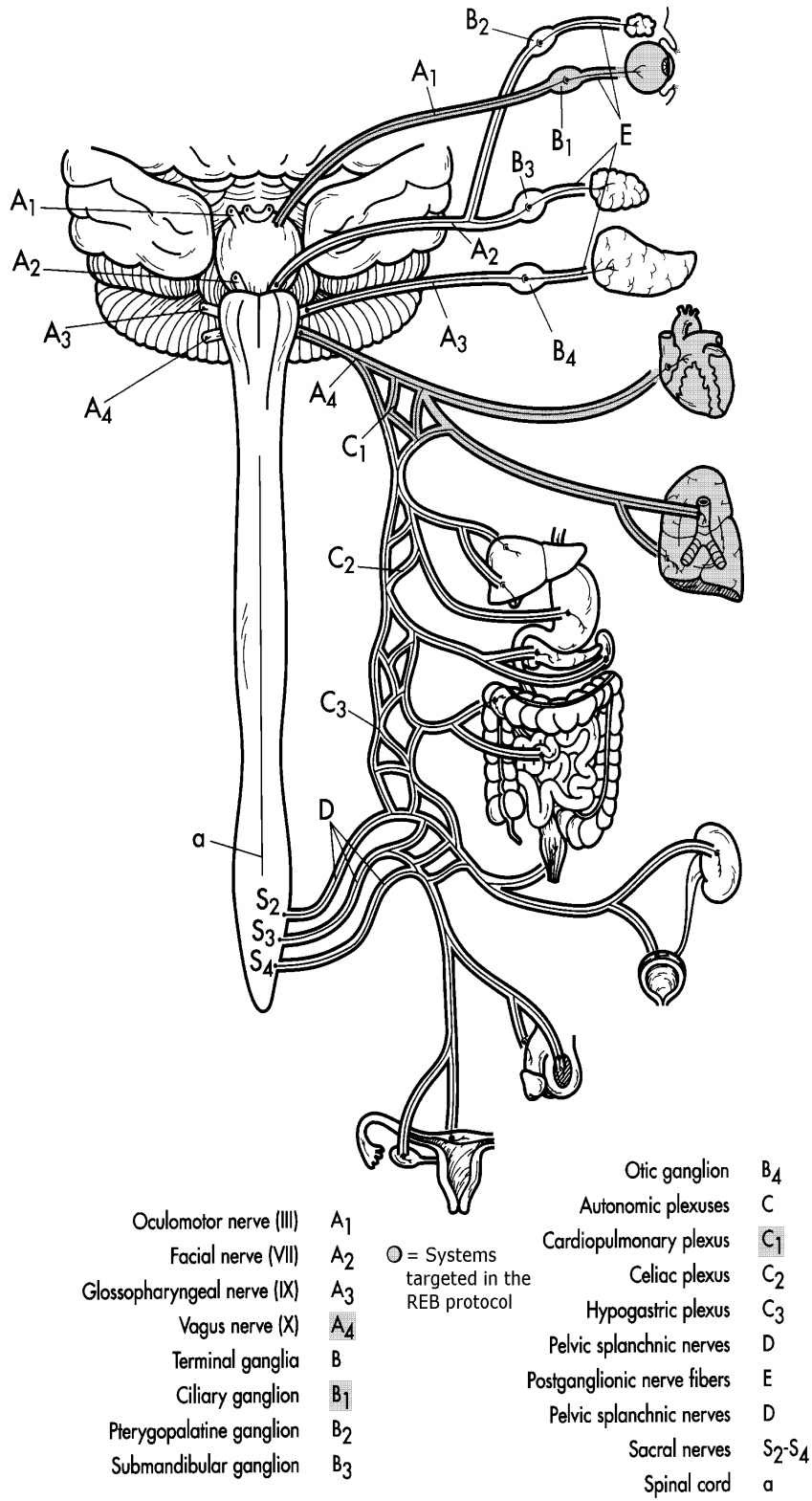


Figure 15.2

## 15.1.2. HEART MATH AND FREEZE FRAME

Scaer and Schneider (2002) (see section 19.1.4), criticize the HeartMath research claim that the heart is the major source for "heartfelt" feelings and point out that a non-functioning Right Orbital Frontal Cortex prevents people from experiencing positive or negative emotions. They question whether the heart can be considered the *source* of the positive feelings such as love, care and compassion. The Radiant Energies Balance (REB)<sup>sm</sup> does not consider this an either/or question. The protocol addresses the issue of the hemispheres in modules 2 and 6 as well as continually providing the whole system, especially the heart, with positive core heart feelings whenever there is a change in the felt sense of the issue (see section 4.2 Modules 5 and 7). As stated in section 19.1.4 the question becomes how best to re-educate the right orbitofrontal cortex and in general the right brain's emotional processing system including the "smart vagus." The REB<sup>sm</sup> protocol assumes the most efficient approach is via the heart and the core heart feelings (see overview of the REB protocol Module 7).

I've been looking at the HeartMath research (on HRV -- Heart Rate Variability) and the methods (e.g. "FreezeFrame" and "Heart Lock In") they use to bring coherence to the heart and thus the autonomic (automatic) nervous system. HRV -- Heart Rate Variability -- seems to be a direct indicator of the responsiveness, sensitivity, balance and flexibility of autonomic nervous system functioning. The Radiant Energies Balance (REB)<sup>sm</sup> protocol seems more direct, easier and faster (i.e. more elegant) than the standard HeartMath methods. HRV may be an ideal dependent variable in evaluating the effectiveness of any form of therapy. Kautzner and Hnatkova state: "It is indisputable that for stationary short-term recordings the spectral analysis of HRV provides specific information about sympatho-vagal [sympathetic-parasympathetic] balance." (Kautzner and Hnatkova, 1995, p. 125) Akselrod maintains that this critical sympatho-vagal [sympathetic-parasympathetic] balance (which measures the cooperation and coordination between the sympathetic and parasympathetic branches) can be assessed using the ratio of power in the Low Frequency (below .15 Hz) to High Frequency (between .2-.4 Hz) bands. "... [T]he functional relationship is a complex combination of sympathetic and parasympathetic tone ... the LF [Low Frequency] band includes both contributions [from both branches], whereas the HF [High Frequency] reflects only vagal tone [parasympathetic] ..." (Akselrod 1995, p. 156) Stein and Kleiger state that "...there is a consensus that, under normal circumstances, HF power reflects vagal [parasympathetic] modulation of the heart rate. In addition, it has been claimed that LF power -- especially normalized LF power, which is LF/LF+HF -- reflects primarily sympathetic modulation of heart rate and that the LF/HF ratio reflects 'sympatho-vagal balance'." They recommend using time domain indices of HRV (for example SDNN = Standard Deviation of Normal to Normal intervals which corresponds to Total Power measure) since they are more easily obtained and have close correlates with those in the frequency domain analyses (Stein and Kleiger, 1999, pp. 251-2)

Tiller (1997) describes the effects of practicing the HeartMath technique called Freeze Frame which is part of the Radiant Energies Balance (REB)<sup>sm</sup> protocol. "This [FreezeFrame] consists of consciously disengaging the mental and emotional reactions to either external or internal events and then shifting the center of attention from the brain and the emotions to the physical area of the heart while intentionally focusing on someone or something to love and/or sincerely appreciate. This allows the individual to access a wider and more objective perception in the moment... [Other higher emotions are] love, care, appreciation, forgiveness, humor, compassion, patience, tolerance and kindness. Love... is defined as benevolent heart focus towards the well-being of others and it is found that the heart-focused feeling for any of these mentioned qualities produces profound electrophysiological changes in heart rate variability (HRV) as contrasted with the mental focus on

the concept of these heart qualities, which does not produce such HRV changes..." (Tiller 1997, p. 213)

"[T]he source of the heartbeat is within the heart itself...although its beat rhythm can be modulated by other segments of the body. Both sympathetic and parasympathetic nerve links connect the brain to the heart allowing one-way signal communication. Reverse direction signals also flow along nerves of the baroreceptor system to the brain making it a two-way communication system. The sympathetic nerve link of the ANS (autonomic nervous system) causes the heart rate to increase while the parasympathetic causes the heart rate to decrease... It is the interaction between these two signal links that produces what is technically called heart rate variability (HRV), the periodic time variation in number of heart beats per minute found in an individual's electrocardiogram (ECG)." (Tiller 1997, pp. 213-214)

"[T]he reverse direction signals [to the brain]...profoundly influence brain function (the cardiovascular system is the only known nerve input to the brain that will inhibit the activity of the brain's cortex)...Thus, although the heart has its own basic rhythm, this rhythm appears to be modified by how we mentally or emotionally perceive events in the moment..." (Tiller 1997, p. 214)

"[R]epeated practice of the HeartMath [and other] inner self-management techniques produces a balanced mental and emotional nature that, in turn, manifests a set of uniquely defined physiological states as seen via analysis of HRV and ECG data... [In this analysis] the sympathetic [LF or low frequency between 0.10Hz and 0.15 Hz] and parasympathetic [HF or high frequency between 0.15Hz and 0.40Hz] influence the sinus node... of the heart and influence its HRV as seen in the HRV power spectrum [chart]... [T]he variability in heart rate can be determined and plotted as the real time HRV signals... [which] can be analyzed into its primary wave components to give the amplitude of each wave component as a function of wave frequency... Since the energy or power in a wave is proportional to the amplitude squared, the power spectrum of a real-time signal [can be plotted] for each wave component...In [this] power spectrum,... the very low frequency signals [below 0.1 Hz], largely associated with thermoregulation of the body, are often ignored. Although it is not a perfectly clean measure of ANS balance, many investigators use the ratio of total HF power (0.15Hz to 0.40Hz) to total LF power (0.05Hz to 0.15Hz) as an approximate measure of ANS balance." (Tiller 1997, p. 214)

"Normal individuals (without much inner self-management) generally exhibit imbalance in their sympathetic versus their parasympathetic innervation and this is a good datum from which to measure progress in the development of inner self-management via steady use of HeartMath [and other Emotional Freedom] techniques... [People practicing inner self-management procedures exhibit 'achievement plateaus'] With training, individuals first learn to balance the two branches of the ANS. Next, the entrainment state is achieved at the natural baroreceptor frequency (about 0.1Hz). This appears to be followed by entrainment state shifts to alternate specific frequencies depending on the specific heart intentionally focus used. Then, one reaches the internal coherence state of heart function in which the real-time HRV signal is held at an approximately zero amplitude level which means that the ECG signal is exhibiting almost perfectly periodic behavior (in normal individuals, small to near zero HRV is thought to be a potentially dangerous condition as it connotes a loss of flexibility in the system. However, for those trained subjects [in skills using the various Emotional Freedom Processes (EFPs) methods], it is an indication of exceptional self-management because their resting HRV is quite large)." (Tiller 1997, p. 217) This would be a fascinating research area testing various enlightened beings and experienced meditators, etc.

In sum, "... a set of relatively simple techniques [FreezeFrame and other Emotional Freedom

Processes] exist whereby otherwise normal individuals can, in a reasonably short period, gain a sufficiently high level of inner self-management at mental and emotional levels to automatically manifest conscious ordering of their ECG and HRV." (Tiller 1997, p. 218)

Our hypothesis is that the Radiant Energies Balance (REB)<sup>sm</sup> protocol seems more direct, easier and faster (i.e. more elegant) than the standard HeartMath methods. HRV may be an ideal dependent variable in evaluating the effectiveness of any form of therapy.

## **15.2. THE POLY VAGAL THEORY OF THE PARASYMPATHETIC NERVOUS SYSTEM**

This summary is taken from Ogden and Minton (2001):

"Hyperarousal involves 'excessive sympathetic branch activity [which] can lead to increased energy-consuming processes, manifested as increases in heart rate and respiration and as a pounding sensation in the head' (Siegel, 1999, p. 254). Over the long term, such hyperarousal may disrupt cognitive and affective processing as the individual becomes overwhelmed and disorganized by the accelerated pace and amplitude of thoughts and emotions, which may be accompanied by intrusive memories. As Van der Kolk, Van der Hart, et al. (1996) state, 'This hyperarousal creates a vicious cycle: state-dependent memory retrieval causes increased access to traumatic memories and involuntary intrusions of the trauma, which lead in turn to even more arousal' (Van der Kolk, Van der Hart, et al., 1996, p. 305). Such state-dependent memories may increase clients' tendency to 'interpret current stimuli as reminders of the trauma' (p. 305), perpetuating the pattern of hyperarousal. Van der Kolk points out that high arousal is easily triggered in traumatized persons, causing them to '...be unable to trust their bodily sensations to warn them against impending threat, and cease to alert them to take appropriate action' (p. 421), thereby disrupting effective defensive responses."

"At the opposite end of the Modulation Model [of Ogden and Minton], '... excessive parasympathetic branch activity leads to increased energy conserving processes, manifested as decreases in heart rate and respiration and as a sense of 'numbness' and 'shutting down' within the mind' (Siegel, 1999, p.254). Such hypoarousal can manifest as numbing, a dulling of inner body sensation, slowing of muscular/skeletal response and diminished muscular tone, especially in the face (Porges, 1995a). Here cognitive and emotional processing are also disrupted, not by hyperarousal as above, but by hypoarousal." [The ultimate extreme of this is "voodoo death."]

"Both hyperarousal and hypoarousal often lead to dissociation. In hyperarousal, dissociation may occur because the intensity and accelerated pace of sensations and emotions overwhelm cognitive processing so that the person cannot stay present with current experience. In hypoarousal, dissociation may manifest as reduced capacity to sense or feel even significant events, an inability to accurately evaluate dangerous situations or think clearly, and a lack of motivation. The body, or a part of the body, may become numb, and the victim may experience a sense of 'leaving' the body. Additional long term and debilitating symptoms might include 'emotional constriction, social isolation, retreat from family obligations, anhedonia and a sense of estrangement' (Van der Kolk, 1987, p. 3) along with '... depression... and a lack of motivation, as psychosomatic reactions, or as dissociative states' (Van der Kolk, McFarlane, and Van der Hart, 1996, p. 422). As we can see, these symptoms are reminiscent of passive defenses, in which a person does not actively defend against danger."

"Stephen Porges's (1995a & b, 1997, 2001) work, which elucidates a hierarchical relationship

among the levels of the autonomic nervous system, has important implications for the regulation of both arousal and defensive responses. He concludes that hypoarousal (described above) is due to a specific branch of the parasympathetic nervous system, the 'dorsal vagal complex,' which causes the organism to conserve energy by drastically slowing heart and breath rates. The other branch of the parasympathetic nervous systems, the 'ventral vagal complex, the 'Social Engagement System,' is the 'smart' vagal because it regulates both the dorsal vagal and sympathetic systems. This 'smart' system is much more flexible than the other two more primitive levels of the autonomic nervous system, which if unregulated, tend to the extremes of hyperarousal or hypoarousal. The Social Engagement System gives humans immense flexibility of response to the environment (Porges, 1995, 1997). For example, during social engagement, interaction and conversation can rapidly shift from strong affect and animation one moment, to calm listening and reflection the next. This 'smart' branch of the parasympathetic nervous system regulates the sympathetic and 'freeze' (dorsal vagal parasympathetic) responses to trauma and allows human beings to fine-tune their arousal to the needs of the situation. This sophisticated 'braking' mechanism of the Social Engagement System facilitates the regulation of overall arousal and is akin to Schore's 'interactive psychobiological regulation.'" (Porges, 2001)

"In effective modulation, the Social Engagement System regulates the more extreme behavior of the autonomic nervous system. Under the stress of trauma, an individual may at first attempt to use the Social Engagement System to modulate, but, if ineffective, social engagement/interactive regulation will tend to shut down. As this occurs, the person has a compromised capacity to use relationships for regulation and instead reverts to the more primitive sensorimotor and emotional systems. The healthy functioning of cognitive direction is diminished... in Sensorimotor Psychotherapy [and REB<sup>sm</sup>] the Social Engagement System is activated as the therapist/client interaction effectively serves to regulate and modulate arousal. After the therapist fulfills this role (in other words, becomes an 'auxiliary cortex' for the client), the client can learn the auto-regulation capacities of observing and tracking sensorimotor reactions. That is, the therapist's ability to interactively regulate the client's dysregulated arousal creates an environment in which the client can begin to access his own ability to regulate arousal (Schore, 2002) independent of relational interaction. Through this process, the client is helped to move from frozen states and/or hyperarousal to full participation with the Social Engagement System."

One outcome of the comprehensive REB<sup>sm</sup> protocol will be the restoration of Porges' Social Engagement System's control over autonomic functioning. This will be demonstrated with the person's ability to rationally respond to triggers that previously would throw them into a reactive automatic response (the phenomena of "emotional hijacking"). They will be able to "access their own ability to regulate arousal"). This is also the intended outcome of HeartMath's protocols (Childre's work) which we incorporated into the comprehensive REB<sup>sm</sup> protocol as well. (Module 7)

### **15.3. THE HEART'S INTELLIGENCE, BRAIN AND ?SPIRIT**

THE HEART IS MUCH MORE THAN A PUMP. In module 7 (see Overview of the REB protocol) of the balance we recommend you focus on your heart and give it lots of core heart feelings and replace the negative emotions (which are now gone) with positive ones, especially for the heart, as is done in the HeartMath procedures (Childre's work). The impact of positive emotions on human biological functioning in general, and the immune system in particular, is receiving more attention in the traditional research/practice community. As examples of this aspect: The HeartMath research on giving positive heart felt feelings is very clear. Donna Eden emphasizes positive



emotions/thoughts beneficial impact on the energy system's Radiant Circuits. The results, discussed in a very technical article, describe the impact of laughter on the immune system (Beck, Felten, Tan, Bittman and Westengard, 2001). For an overview of the field, see Dossey, (1996); the classic Norman Cousins' work (1976) (1981) and (1989); Raymond Moody's book (1978); the Patch Adams approach; and the optimism literature: Taylor (1989), Kohn (1990) and Seligman's work (1990) and (1995).

This brings up another fascinating aspect of HeartMath research: the exploration and elucidation of "Heart Intelligence" and the "Heart Brain" (Lacey and Lacey, 1978 and Armour 2003. "The heart's brain is an intricate network of several types of neurons, neurotransmitters, proteins and support cells like those found in the brain proper. Its elaborate circuitry enables it to act independently of the cranial brain -- to learn, remember, and even feel and sense...The heart's nervous system contains around 40,000 neurons, called sensory neurites, which detect circulating hormones and neurochemicals and sense heart rate and pressure information. Hormonal, chemical, rate and pressure information is translated into neurological impulses by the heart's nervous system and sent from the heart to the brain through several afferent (...to the brain) pathways...These afferent nerve pathways enter the brain in an area called the medulla, located in the brain stem. The signals have a regulatory role over many of the autonomic nervous system signals that flow out of the brain to the heart, blood vessels and other glands and organs. However, they also cascade up into the higher centers of the brain, where they may influence perception, decision making and other cognitive processes. Dr. Armour describes the brain and nervous system as a distributed parallel processing system consisting of separate but interacting groups of neuronal processing centers distributed through the body. The heart has its own intrinsic nervous system that operates and processes information independently of the brain or nervous system...The heart was reclassified as an endocrine or hormonal gland, when in 1983 a hormone produced and released by the heart...was isolated. This hormone exerts its effects widely: on the blood vessels themselves, on the kidneys and the adrenal glands and on a large number of regulatory regions in the brain...[T]he heart contains a [adrenergic] cell type ...[which] synthesize and release catecholamines (norepinephrine and dopamine), neurotransmitters once thought to be produced only by neurons in the brain and ganglia outside the heart...[T]he heart also secretes oxytocin,...the 'love' or 'bonding' hormone...[T]his hormone is also involved in cognition, tolerance, adaptation, complex sexual and maternal behaviors as well as in the learning of social cues and the establishment of enduring pair bonds...[C]oncentrations of oxytocin in the heart as high as those found in the brain." (McCraty, Atkinson and Tomasino, 2001, pp. 4-6)

A dramatic example of the cellular memory, intelligence, wisdom and even spirit of the heart is provided by the cases of transplant patients who receive heart and other organs and who take on some personality aspects (food and activity preferences, language patterns, temperament, etc.) of the donor. (Sylvia. with Novak, 1997. Research into the unusual experiences of organ transplant recipients is being done by Claire Sylvia and Robert Bosnak at the Center for Psychology and Social Change, Cambridge Hospital, Box 398080, Cambridge, MA 02139, phone: 617-354-2499). See also Paddison, 1992, Pearsall, (1998) and Schwartz and Russek (1999).

#### **15.4. RADIANT ENERGIES BALANCE (REB)<sup>sm</sup> PROTOCOL AS COUNTER CONDITIONING**

The comprehensive Radiant Energies Balance (REB)<sup>sm</sup> protocol (which is an autonomic nervous system balance protocol used to defuse various anxiety/fear issues) also fits in with a "counter conditioning," "reciprocal inhibition," and "systematic desensitization" approaches used in

traditional psychotherapy. (Lazarus, 1971; Meichenbaum, 1977; Rimm and Masters, 1974; Salter, 1949; Wolpe, 1958, 1969; Wolpe and Wolpe, 1988; and Wolpe and Lazarus, 1966) These approaches assume that the anxiety/fear reaction becomes attached to normally neutral stimuli by a learned association causing the person to react with an inappropriate emotional response. The goal of therapy is to substitute a non-fear response to these stimuli by a "counter conditioning" process. In the Radiant Energies Balance (REB)<sup>sm</sup> or autonomic nervous system balance protocol, the person surveys the various aspects (stimuli or triggers) which cause them distress while maintaining the balancing posture (which creates homeostasis in the autonomic nervous system) thus substituting a calm response for the distress response. As the person surveys the troubling issues, each of the stimuli or triggers in turn become newly associated with calming response. (Kolb, 1984 and McFall and Murburg, 1994 in Murburg, pp. 161-174]

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