

Accessing the Chemistry of Wellness, Performance and Leadership

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Research in the area of mind-body influences has revealed the significant effects that thoughts and feelings have upon body function by altering body chemistry. Equally dramatic has been the findings that these induced changes in body chemistry in turn affect our thoughts and feelings. No longer can we neatly remove the phenomenon of consciousness or the psyche, from the dynamic of body structure and function. For the inescapable truth is that our thoughts and emotions are intimately connected to our body structure and function by heavy two-way traffic. In this article a working model is described which we currently use to define the relevant variables of this dynamic and which also forms the basis for accurate diagnostic evaluations and intervention.

Introduction

Identifiable mind states are associated with the secretion of neuro-transmitters and neuro-peptides which then circulate in the blood stream and impact upon body metabolism. In this way, mind states influence wellness and performance in a profound way. The study of this mind-body chemical connection is referred to as psychoneuro-immunology (PNI). The challenge is to be able to access the core processes of consciousness and thereby move the individual into a resourceful neuro-chemical configuration. The context of this dynamic is summarized by the illustration in figure 1.

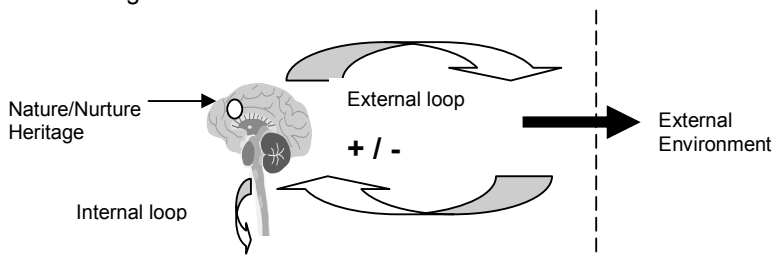


Figure 1. Context of interaction.

In effect our nature-nurture heritage gives rise to our world-view or subjective reality. If this heritage is comprehensive and free of deprivation, then when we interact with the external environment we see things as they really are and consequently make accurate decisions. This leads to success and we thus return with a positive *feeling*. Conversely, if the nature-nurture heritage is a product of deprivation, we will not see things as they really are and thus experience failure. We return with a negative feeling. These feelings, products of the *external loop*, drive our PNI chemistry from the feeling areas of the brain via the *internal loop*. This will determine ultimately our levels of wellness and performance.

The Triangles Model

The Triangles Model forms the foundation for accessing the chemistry of wellness and performance. It is fully quantifiable by an online diagnostic which measures stress profiles, PNI resilience in terms of wellness and performance as well as cardiac risk. Due to the comprehensive quantification, the effectiveness of intervention may be evaluated on an ongoing basis. Central to the *Triangles Model* is the *energy-integration* curve. This is illustrated in figure 2.

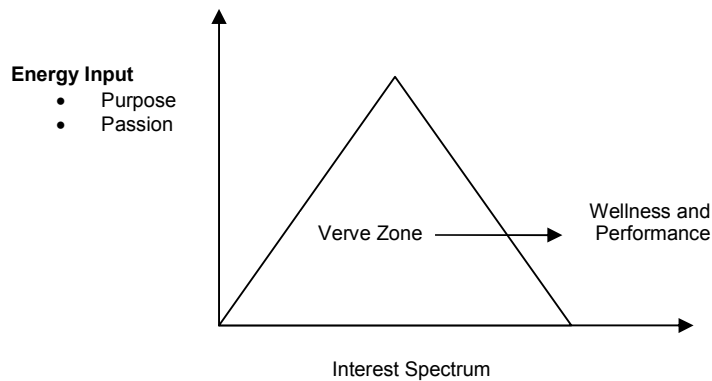


Figure 2. Energy – integration curve.

The Y-axis or height of the triangle represents passionate, purposeful energy input while the X-axis represents the spectrum of the environment that has been integrated in the subjective world-view. The volume within the triangle has been shown statistically to represent the PNI chemical resilience as manifest in wellness and performance. Three archetypes of behaviour are described which reflect differing nature-nurture dynamics reflected in variations of the basic energy-integration curve.

The first of the archetypes is referred to as the Bravo Archetype. This is illustrated in figure 3.

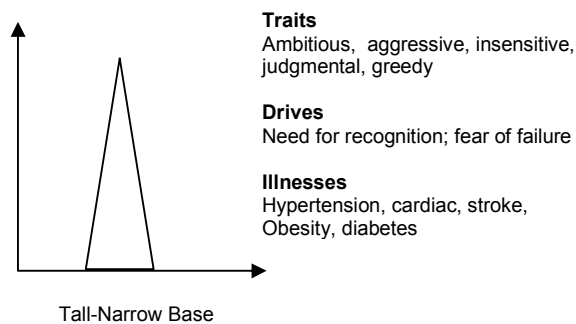


Figure 3. Verve Archetype 1- Bravo.

This archetype reflects a nurture dynamic in which a response to needs was delayed. A fear that the response would not be forthcoming resulted in the infant narrowing down the interest area to “own needs”. Ultimately the needs (mainly feed) were appeased and the efforts in this regard were thus justified. The archetype is represented by a tall and narrow-based triangle. The spectrum of the environment that is integrated in the base represents only “my needs”. This is therefore an archetype obsessed only with own needs and driven ambitiously to achieve these needs. The first drive is essentially one of fear – fear of failing to achieve the objectives. The second drive is one characterized by the need for recognition and adoration. The excessive drives give rise to the very tall triangle. This archetype has integrated only “own needs” into the baseline. Therefore everything which lies outside of the triangle of interest (subjective world-view) is judged to be unimportant and of inferior value. This archetype is thus insensitive to all that lies outside of the triangular configuration. The volume of the triangle is statistically adequate to drive PNI resilience in terms of wellness and performance.

The next archetype is termed the Charlie Archetype. The Charlie traits are illustrated in figure 4.

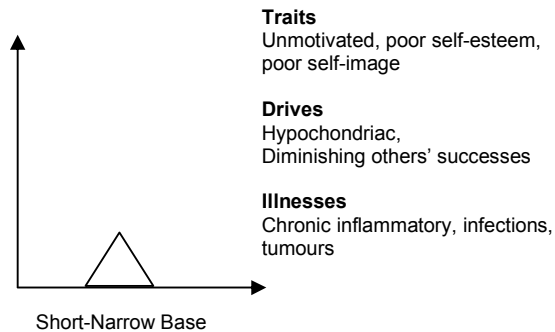


Figure 4. Verve Archetype 2 – Charlie.

This archetype is represented by a small triangle, both in terms of height and base. Once again the narrow spectrum of integration represents “own needs”. The difference between the Bravo and Charlie archetypes in terms of the height of the respective triangles is that while the Bravo archetype has experienced success, the Charlie archetype has only experienced very limited success and gratification. Therefore the Charlie Archetype emerges from a heritage of futility. This futility results from continued failure to experience success and gratification in the nurture environment for “own needs” despite the repeated attempts in this regard. A point is reached where subjectively the Charlie Archetype believes that no amount of energy input will result in any meaningful result. This mind state is termed hopeless-helpless and is associated with self-destructive chemistry. As a consequence of this dynamic, the energy input diminishes as manifest by the low triangle height. Statistically there is insufficient PNI resilience to positively drive wellness and performance.

Two noticeable drives of the Charlie Archetype include hypochondriasis and the need to diminish the successes of others. The former reflects the need to be noticed and acknowledged while the latter results from a situation wherein the Charlie Archetype, having never really experienced success and gratification, finds it difficult to share an environment with successful individuals. The Charlie Archetype therefore sabotages the successes of others to lessen the pain of failure. The Charlie Archetype is prone to suffering the ailments of inadequate PNI resilience such as recurrent infections and tumours.

The final archetype is the Alpha Archetype. This is the “gold standard” and is illustrated in figure 5.

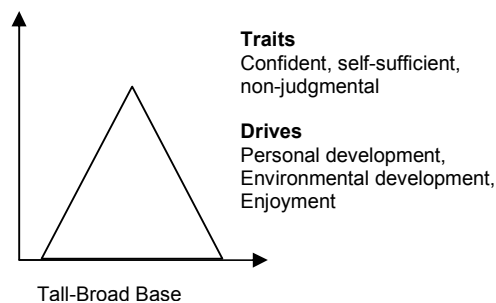


Figure 5. Verve Archetype 3 – Alpha.

In this Archetype we find adequate triangular height signifying a healthy purposeful energy input together with a very broad base reflecting an environmental integration well beyond “own needs”. In this archetype, “own needs” were never an issue. As a result the volume of the Alpha archetype reflects a significant surplus of PNI resilience in terms of wellness and performance. The broad environmental appreciation precludes the development of insensitivity and / or judgmentalism which is found in the Bravo type. The Alpha type is driven by the need for personal development and fulfillment as well as enjoyment. There is very little fear of failure in this confident and self-assured individual. Illness occurs very rarely.

Applications

We spend most of our lives in one or more of three areas of interest. These are:

- Work or application
- Personal or inter-personal
- Recreation

As a result of the requirements of daily life we will prioritize these areas of interest accordingly. Furthermore, because each of these interest areas occupy a different segment of the environment our triangular configuration will separate into three independent, identifiable areas. The separation of these interest areas is termed un-integration. As a result of the different priorities given to these areas and the subsequent energy input, the triangles of interest representing these interest areas may range from Charlie to Alpha in their configurations.

When functioning within a specific interest area, we take on all the traits of that specific configuration. We also become unaware of the other triangles of interest. This concept is illustrated in figure 6.

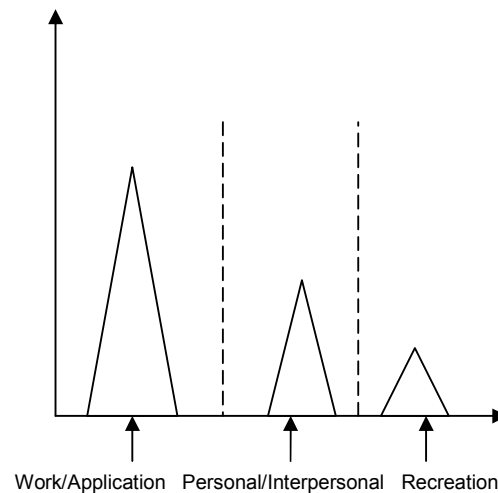


Figure 6. Interest areas.

The above illustration depicts three un-integrated areas of interest where work/application is a Bravo Archetype while personal/interpersonal and recreation triangles reflect Charlie Archetypes. In this situation most of the PNI resilience in terms of wellness and performance is derived from the Bravo work triangles. Should circumstances such as retrenchment or retirement result in loss of the work triangle, the individual will be catapulted into the remaining un-integrated Charlie triangles and experience the traits of hopeless-helpless. This will further diminish the available PNI chemical resilience manifesting in compromised wellness and performance.

The loss of the Bravo triangle may also be subjective in that the apparent activity and interaction still exists but passionate and purposeful energy within the Bravo triangle has diminished. Outwardly the individual still appears to be interacting normally. However the loss of purposeful energy has resulted in the individual imploding into a functional Charlie Archetype within that specific sphere of interest. We refer to this as a *pseudo-verve* phenomenon. Within a Charlie pseudo-verve, the individual will once again experience all the subjective traits of the Charlie Archetype as well as a significant loss of PNI resilience. See figure 7.

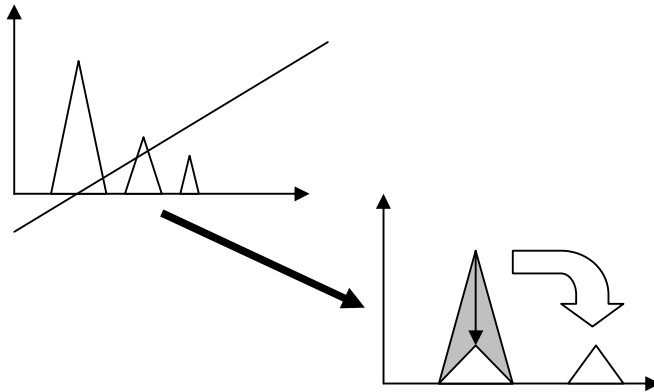


Figure 7. Pseudo-verve.

The solution to this problem is to develop a triangular configuration characterized by the overlapping of Alpha triangles reflecting each of the three areas of interest. This is illustrated in figure 8.

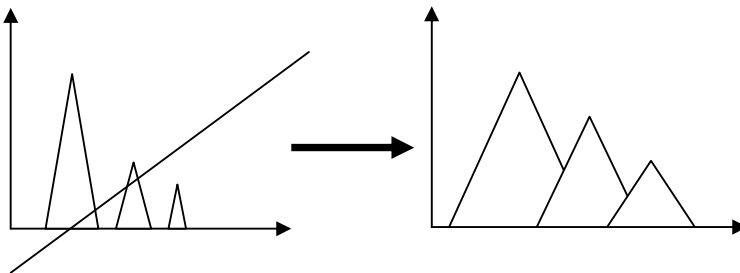


Figure 8. Optimal Alpha overlapping.

The overlapping of Alpha triangles is the optimal configuration in terms of PNI resilience. It is the consequence of expanding the base of integration of each triangle of interest such that an overlap occurs. In this way awareness is maintained of other areas of interest even while prioritizing the environment in which we find ourselves at a given time. For example while functioning in the work environment, awareness is maintained of personal as well as recreational needs. This translates into a sensitivity of the full environment irrespective of the priority area in which we are interacting at a specific time. Functionally this translates into a situation of balance. Furthermore, should a specific triangle of interest pseudo-verve, there will still be adequate purposeful energy to drive the re-creation of a new triangle of interest.

Hollow integration

Generally, the process of integration results from a bottom-up synthesis of labeled entities and their associations. As happens in life, we may incorporate the superficial characteristics of entities into our world view without their complexities and the representative circuitry. For example, we integrate all the characteristics of a car without engaging and integrating the intricacies of its mechanics. The unintegrated segment of our configuration is termed a hollow integration. See figure 9.

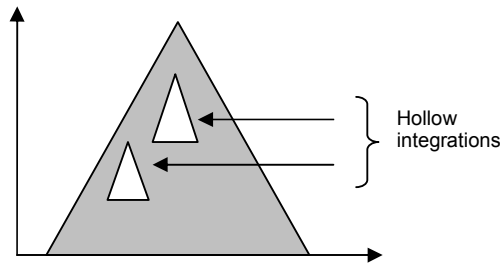


Figure 9. Hollow integrations

It is still feasible that an individual with an Alpha configuration remains a functional Alpha even with multiple hollow integrations. The deciding factor whether an individual with an Alpha configuration and hollow integrations is a functioning Alpha is their attitude towards their hollow integrations. An Alpha attitude will acknowledge the shortcomings of their hollow integrations while a Bravo will conceal or fabricate the absent information represented by the hollow integration.

Inter-personal Dynamics

At this point we are in a position to review the dynamics that occur when different archetypes interact with each other. The first example reflects the interaction of the Alpha with Bravo and Charlie Archetypes. The fundamental characteristic of the Alpha configuration is that its broad base and adequate height incorporates the Bravo and Charlie triangles well within its subjective world view. In this way, all aspects of the subjectivity of Bravo and Charlie are integrated within Alpha thereby maximizing sensitivity and minimizing judgmentalism (from the Alpha perspective). This is illustrated in figure 10.

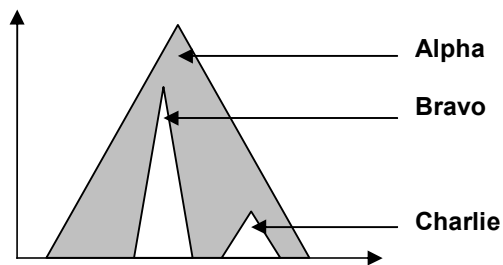


Figure 10. Relative integrations.

Consider the next example in which a Bravo Archetype interacts with a second Bravo. This is illustrated in figure 11.

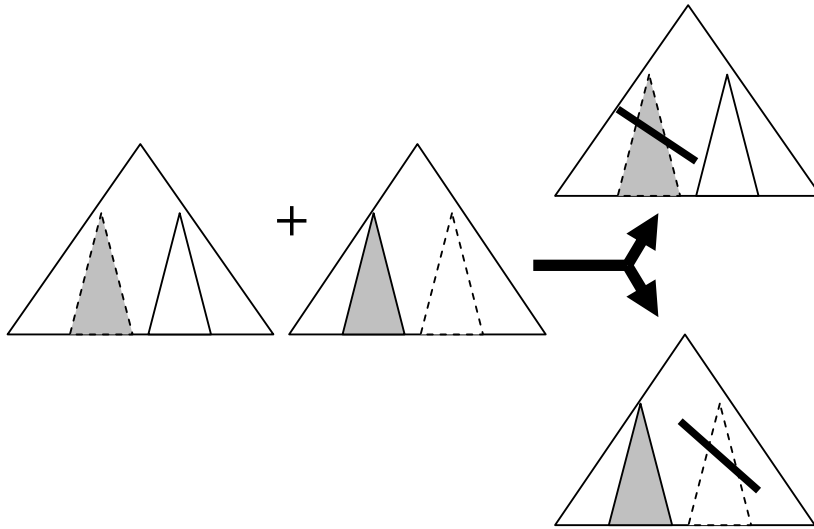


Figure 11. Bravo-Bravo Clash: Mechanism.

In this situation each Bravo occupies a different segment of the prevailing environmental spectrum. As a result, each will take a judgmental stand against the other and attempt to deny their existence. This is because each falls outside of the other's subjective reality driven by own needs. There are several possible outcomes to this interaction as indicated in figure 12.

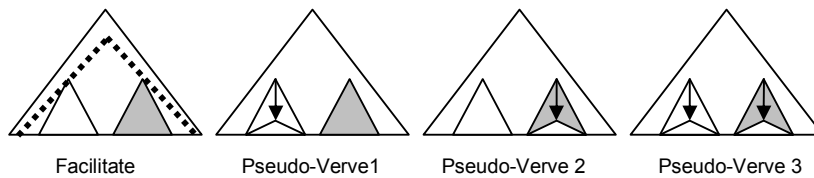


Figure 12. Possible Bravo-Bravo Outcomes.

The most optimal outcome is arrived at through facilitation. When facilitated by an Alpha Archetype the fears, aspirations and preferences of each are incorporated into a phantom Alpha triangle which will function as a vehicle of co-operation for the specified environment. This facilitation may need to be repeated on a regular basis. Without facilitation either or both of the two conflicting Bravo's may devolve into *pseudo-verve* Charlie's with all the associated hopeless-helpless traits. This situation is commonly seen in inadequately facilitated mergers where merging groups assume the postures of fearful Bravo's.

The union between a Bravo and a Charlie occurs as a result of the needs of each. The Bravo needs an individual to control (and in some cases, to abuse) and someone to provide ongoing adoration. The Charlie on the other hand requires recognition which in this union is derived from the accolades bestowed upon the Bravo partner. The Bravo triangle is therefore incorporated by the Charlie into his/her own configuration – but as a phantom. It is a phantom because on dissolving the union, the phantom Bravo triangle will disappear leaving the Charlie in *hopeless-helpless* wretchedness. This is illustrated in figure 13.

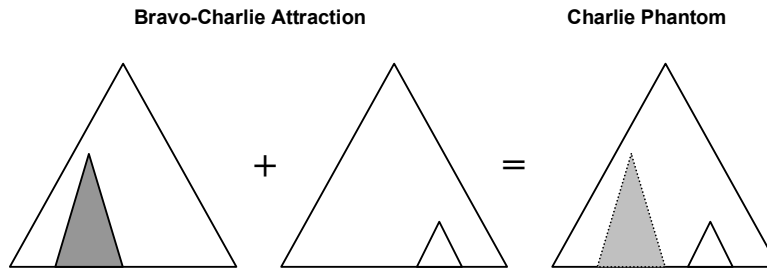


Figure 13. Bravo-Charlie Attraction.

Charlie-Charlie attraction occurs because each Charlie empathizes with the other. Each identifies with the other's loss of self-esteem as well as misfortunes which may prevail. In this way they find mutual solace in each other. However should the female of the union experience any success or gratification, the male will be quick and brutal to bring her back to wretchedness because her success or gratification is too painful for him to bear. This is therefore the configuration that may lead to physical and emotional abuse. The dynamic is illustrated in figure 14.

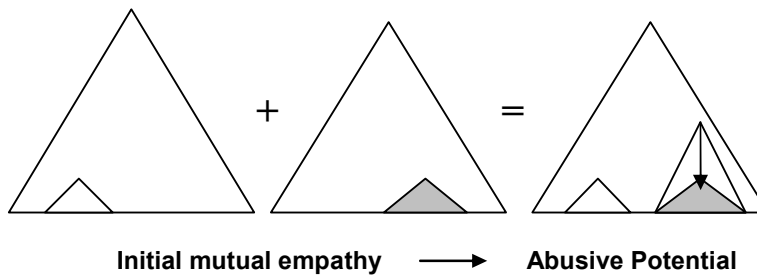


Figure 14. Charlie-Charlie Interaction.

Archetypes and Leadership

Archetypal traits directly determine leadership styles. Thus in the case of Alpha, the broad-based integration reflects the traits of unprejudiced sensitivity, adequate self-confidence and an appreciation of the bigger picture. This translates into an individual who leads by facilitating dialogue between Archetypes. The intrinsic understanding that the Alpha has for the Bravo's aggressive ambition and judgmentalism, fuelled by self-interest and the fear of not achieving, gives rise to facilitation in which the fear element is neutralized. Once fear is minimized through assurances of value within the team, the Bravo is reconciled with the bigger picture and encouraged to contribute to the collective dynamic. In effect, the Alpha functions as facilitator and mentor. In regard to the Charlie, the Alpha understands the deficient self-esteem and self-worth of this archetype. Sensitivity and support are essential in buffering the Charlie and ensuring that suppressed value gains expression. Through facilitation, Alpha maximizes the human resource potential. Supported dialogue contributes to morale and enhanced productivity.

The Bravo leads by prescription. The management structure is denoted by a collective Bravo configured triangle, tall and narrow-based. Anyone expressing a view which falls outside of the triangle of interest is regarded as a threat to the organization. Thus unquestioning conformity is a prerequisite for tenure and promotion. Unfortunately a significant amount of intrinsic human resource potential is lost as a result. This leadership style is driven by fear.

The Charlie in a leadership position may result in a potentially damaging situation. The Charlie's with significantly compromised self-esteem may surround themselves with competent Bravo's. In effect the Bravo's are held to ransom by the leading Charlie. As long as the Bravo's perform, they remain in good standing with the Charlie. If the Charlie perceives questionable loyalty, vengefulness born out of a threat to self-esteem and self-worth may cause the Charlie to inflict damage upon the offending Bravo.

In a business environment, the Alpha tends to become the entrepreneur in that they are devoid of fear, see the bigger picture and are adequately self-assured. Conversely the Bravo, with inherent fear and a narrow base centered upon self-interest, is more orientated to success within a corporate hierarchy. In terms of their respective approaches, the Bravo is driven by ambition to achieve an objective/destination. Inherent in this drive is the fear of not achieving. Very little regard is given to the journey in pursuit of the destination. The Bravo thus lives almost entirely in the future which is invariably fear-based. Alpha on the other hand confidently aspires to the objective/destination. In this case however, Alpha attributes as much importance to the journey in the present as to the destination in the future.

The Chemistry of Wellness and Performance

It should be indicated at the outset that the influences of neuro-psychological processes on the immune system alone, traditionally the PNI domain, have expanded in that we now recognize the influences of mind-states on a more diverse spectrum of body function. For example, negative mind-states have been shown to correlate with the development of osteoporosis, heart disease and even Type 2 diabetes.

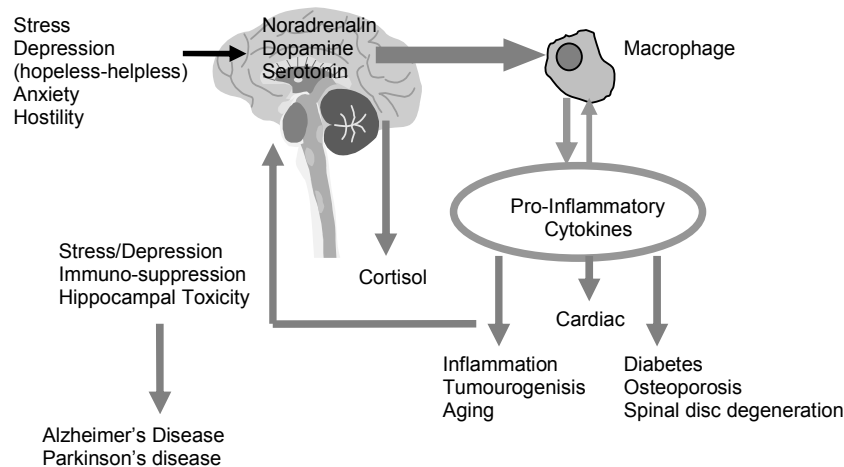


Figure 15. The chemistry of wellness and performance.

At the heart of the chemical process is the interaction of brain chemistry, the neurotransmitters, with the modulating messenger chemistry in the body, the neuropeptides (see figure 15). The important neurotransmitters are serotonin, dopamine and adrenalin while the important group of neuropeptides have been identified as the pro-inflammatory cytokines (Interleukin 1, Interleukin 6 and Tumour Necrosing Factor α). Experiencing stress, anxiety, depression (inclusive of states of hopeless-helpless) and hostility is associated with a change in the relative concentrations of the neurotransmitters. The configuration that arises is one in which levels of serotonin and dopamine are diminished while levels of noradrenalin and adrenalin are raised. The configuration of decreased levels of serotonin and dopamine with raised levels of noradrenalin is associated with the increased secretion of pro-inflammatory cytokines by the macrophage cells of the immune system. Raised levels of noradrenalin and generalized sympathetic activity have been shown to directly stimulate pro-inflammatory cytokine production. Conversely, parasympathetic stimulation decreases pro-inflammatory cytokine production.

The pro-inflammatory cytokines have a widespread negative effect on multiple target areas. Included in the identifiable effects of the pro-inflammatory cytokines are the following:

1. Precipitate or enhance inflammatory activity in any target area
2. Contribute to athero-sclerosis, most notably in the coronary and cerebral arteries. This may give rise to heart attacks and/strokes
3. Suppress cardiac muscle contractility
4. Contribute to the development of osteoporosis and Type 2 diabetes
5. Suppress enzymes that correct abnormal DNA splicing – gives rise to tumour formation (myeloma, breast cancer)

6. Feedback on the brain and result in the following effects:
 - Disruption of hippocampal function – results in impairment of short term memory
 - Disruption of neuro-transmitter production (diminished serotonin and dopamine levels) resulting in *sickness behaviour*
 - The latter may go on to evolve into depression in susceptible individuals (enhancement of negative mind-states)
 - Stimulation of the release of CRF which increases cortisol production. This will contribute to immuno-suppression, Type 2 diabetes and osteoporosis. Raised cortisol levels also affect the hippocampus resulting in loss of cells and atrophy. The latter effect, hippocampal atrophy, has been shown to be reversible if appropriate intervention is initiated before threshold loss of tissue.
 - Chronically raised levels of pro-inflammatory cytokines are associated with loss of neuronal cells in the basal ganglia, giving rise to possible Parkinson's disease. In addition there may also be cell loss in the pre-frontal cortex and amygdale. This cell loss together with hippocampal atrophy may evolve into Alzheimer's disease.

In the clinical situation, specific configurations and associations have been observed:

- a. The Bravo archetype is associated with higher levels of noradrenalin and adrenalin with only moderate levels of pro-inflammatory cytokines and cortisol. This archetype is associated with pathologies reflecting the higher levels of adrenalin and noradrenalin such as hypertension. Excessive noradrenalin also compromises pre-frontal cortex, executive function.
- b. The Charlie archetype is associated with higher levels of pro-inflammatory cytokines which appear to correlate with the hopeless-helpless mind state. High levels of the pro-inflammatory cytokine Il-6 have been observed in the chronic care-giver situation and appear to suppress the DNA splicing correction enzyme which may then evolve into myeloma. Cortisol levels are generally raised but may be paradoxically low if the individual experienced chronic infantile deprivation. This is possibly explained on the basis of adrenal fatigue.
- c. The Alpha archetype is associated with adequate levels of serotonin and dopamine with lower levels of adrenalin. This reflects high levels of personal gratification (triggering nucleus accumbens) and low levels of anxiety. Markedly low levels of dopamine and noradrenalin however may become counter-productive in that the configuration gives rise to complacency (low motivation).

Inflammation, cancer and aging

Wellness and performance are ultimately a reflection of the vitality of individual living cells. The living cell is an autonomous entity which maintains the process of life by creating energy from nutrients and oxygen and replenishing its functioning components from amino acids. The replenishment is co-ordinated by the DNA template together with messenger and transfer RNA. The overall modulation of cellular activity occurs at the level of the cell membrane where messenger chemicals dock with receptors and influence intra-cellular activity.

Every cell produces electro-chemical activity as a consequence of its living processes. The collective electro-chemical environment derived from all cells within the body has been shown in turn to have an effect on every living cell by interfacing with the cell membrane. Increased electro-chemical activity results from driven, purposeful activity while the diminished activity seen in states of hopeless-helplessness decreases electro-chemical activity. One of the effects of electro-chemical activity on the cell membrane is the activation of an enzyme called sodium-potassium ATPase. This enzyme functions by maintaining the concentrations of the electrically active ions, sodium and potassium, at the correct levels and on the correct sides of the membrane. Potassium is maintained in higher concentrations on the inside of the membrane while sodium is maintained in higher concentrations on the outside.

Hopeless-helpless mind states are also associated with raised levels of pro-inflammatory cytokines. Raised levels of pro-inflammatory cytokines have been shown to suppress the activity of the sodium-potassium pump. Therefore diminished electro-chemical activity as well as raised levels of pro-inflammatory cytokines resulting from the hopeless-helpless mind state both contribute to decreased activity of sodium-potassium ATPase. Decreased sodium-potassium ATPase activity results in raised levels of extra-cellular potassium and low levels of extra-cellular sodium. This contributes to the syndrome of sickness behaviour (also referred to as the sick cell syndrome) seen in states of hopeless-helpless as well as in situations of physical illness and injury. Other features of sickness behaviour include irritability, a disinterest in the environment, fever, anorexia and lowered libido.

Associated with high levels of pro-inflammatory cytokines are raised levels of intra-cellular free radicals. Free radicals are highly toxic to intracellular organelles. Free radicals are products of the metabolic pathway which are

usually broken down by intracellular enzymes. Levels of free radicals however will increase in inflammation, in response to toxins, in response to UV and therapeutic irradiation and with increasing age. Both pro-inflammatory cytokines and free radicals negatively affect chromosomal function and DNA replication. There is evidence that they interfere with the methylation process (suppression and de-suppression of chromosomal segments) as well as with the enzymes that correct abnormal DNA splicing. The resultant abnormal DNA has been shown to give rise to neoplastic (tumour) cells. Chronic inflammation therefore may give rise to tumour formation over a period of time. The risk of tumour formation is enhanced when immune function is suppressed, as occurs in states of hopeless-helpless.

Changes associated with the aging processes have been shown to be related to and mediated by the effects of raised pro-inflammatory cytokines and free radicals. It is postulated therefore that the hopeless-helpless mind state, associated with lowered levels of dopamine and serotonin and raised levels of pro-inflammatory cytokines and free radicals, contributes directly to the aging process.

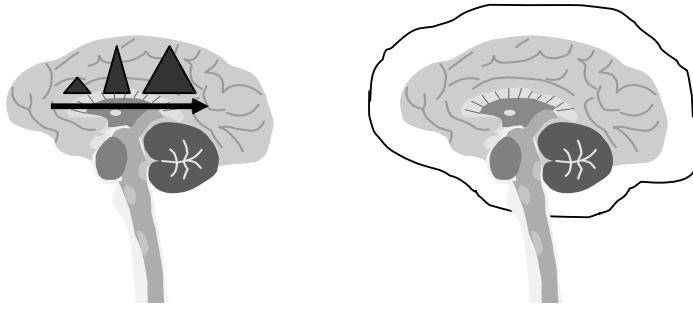
Intervention

The evolution from Charlie to Bravo requires the input of purposeful, passionate energy while the evolution from Bravo to Alpha requires a broadening of the integration. This latter broadening of integration is a fundamental shift away from a narrow base representing *my needs* and fear of these not being fulfilled, to one of accepting that my needs will be fulfilled and becoming aware of the bigger picture. The pre-occupation of the Bravo with the fear of not experiencing the fulfilment of own needs, results in an insensitivity to all elements of the prevailing environment not included in the Bravo configuration. Only once the obsession with own needs is modulated, can there be a shift to appreciating more of the prevailing environment, with the appropriate sensitivity. This step facilitates the evolution into the Alpha configuration.

It is possible to achieve a more rapid evolution of Charlie to Alpha in that many Charlie-type individuals are sensitive beings, often with creative talents. The intervention rests upon the creation of awareness of these talents and sensitivities; the formulation of a purposeful strategy; creating a feedback loop in which personal accomplishment and self-gratification leads to the enhancement of self-esteem. Purposeful energy is generated from the small increments of success derived from this application. Many nurture-based Charlie individuals have experienced an inadequate peer interaction in their early nurture period as a result of being forced into a role of premature responsibility (usually due to maternal absence/disinterest). If one accepts that peer interaction is vital for the development of a self-identity, early self-actualization, self-confidence and the experience of enjoyment, then the absence of this interaction results in an adult who is characterized by poor self-esteem, self-confidence and an inability to enjoy life, termed *anhedonia*. This translates into the classical hopeless-helpless Charlie trait. Intervention is further aggravated by a subjective feeling on the part of many of these individuals, of not deserving of any gratification. This latter component creates tough challenges in terms of creating a sustaining strategy. As indicated above, the solution to this problem is to facilitate small increments of success and gratification for the Charlie individual and then mirror back with amplification, the achieved outcome with its gratification.

In addition to the process of energy and integration enhancement, we need to create a mechanism by which we buffer ourselves against negative influences, originating both from the external environment as well as from our subjective deprivation 'baggage'. The comprehensive approach therefore is to establish an ongoing drive towards the overlapping Alpha configuration (Maxi-Verve) as well as creating a consistent buffer zone or 'calm zone'. This comprehensive strategy is illustrated in figure 16.

Intervention Summary



Configuration enhancement Establishing a calm zone

Figure 16. Intervention summary

Broadening the bases of triangles is achieved through enhancing the integration of the environment while increasing triangular height is achieved by purposefully energizing activities in each of the three areas of interest. See figure 17.

1. Maximize **meaning** and **purpose** **Energy**

- Establish own mission statement
- Maximize positivity – distance from negativity
- Diversify within environment
- Re-structure

2. Maintain **Broad Base** of activity ... **Integration**

- New activities, people, environments - **sensitize and empathize**
- Prioritize and manage

3. **Mind-State** Enhancers

- Live in the presentmaximize the present
- Acknowledge feeling, express feeling ...empathy + gratitude
- Strive for Alphaneutralize Bravo, Charlie
 - Shirking responsibility Bravo + Charlie
 - Envy and malice Charlie
 - Self-interest and insensitivity .. Bravo
 - Fear Bravo
 - Guilt and regret Charlie

Figure 17. Principles of Approach.

Practically, each aspect of enhancement is facilitated through a logical process. Energy enhancement is achieved by maximizing *meaning* and *purpose*. This in itself is a function of one’s mission statement. It is fundamental to establish genuine needs, aspirations and preferences before embarking on a process of re-structuring in any of the areas of interest. In most cases a radical re-structuring is not required to enhance purpose, meaning and gratification. All that may be required is to add new activities or approaches to enhance gratification. Generally adopting a mind-set of hopefulness in which positivity is emphasized and negativity avoided, contributes significantly to purposeful energy.

Integration is enhanced by incorporating new elements in existing areas of interest. As an example if a Bravo employer is introduced to the concept of sensitivity to the personal and recreational needs of employees, productivity is usually enhanced. In many cases one arrives at this point for the wrong reasons – the Bravo is

generally only driven by profit. But if the Bravo is shown that sensitivity to the needs of employees enhances productivity and profit, they may arrive at this Alpha state by default! An awareness needs to be established of the three archetypes and their traits so that non-resourceful and damaging PNI chemistry is avoided. Living in the present is an Alpha trait. Fear of future consequences is Bravo while previous loss, regret and guilt are Charlie traits. Acknowledging present success through the expression of gratitude re-enforces the Alpha state as does empathy towards others who are victims of a less resourceful archetypal mode. Contributing value to the environment and acknowledging the value contributions of others, also enhances the Alpha state.

In addition to establishing a resourceful configuration as described above, successful intervention requires that we establish a buffer zone. The second principle of intervention therefore is the formation of a protective envelope created as a buffer zone for impinging potential negative influences. These influences may arise from our environments or alternatively, from internal deprivation thoughts and emotions. There are two levels of approach to potentially negative influences:

1. Accept the impinging information without judgment or response
2. Modulate the information by neutralizing the deprivation consequences

The level one response in essence is one of initial inaction. We are aware that the stimulus can give rise to a response which can move us into a deprivation Bravo/Charlie configuration. We choose to deal with this information in dialogue mode – non-judgmental and fully mindful of the individual or circumstances that may be the source of the information.

The second level of response is designed to neutralize the Bravo fear complex and its conversion to anger. If the aggravating stimulus persists, the fear-anger complex may devolve (pseudo-verve) into hopeless-helpless. The prevailing fear of losing control and not meeting objectives may be aggravated by any environmental situation which obstructs the Bravo type in his/her quest. This environmental situation effectively pushes a button which converts the Bravo fear into anger (see figure 18). The resulting anger precipitates all the extreme Bravo traits centred upon achieving “own needs”. This includes the need to control, driving ambition, judgmentalism and insensitivity. If the prevailing situation defies the Bravo’s ability to manage and control, fear and anger may devolve to hopeless-helpless. The antidote is to factor in a second “button” which is pushed simultaneously with the first and which triggers a program of **patience** and **trust**. In this program patience functions as a break state enabling the Bravo individual to change from aggressive language to non-judgmental dialogue. The internal dialogue then functions to highlight the following aspects of the situation:

- The acceptance of prevailing elements which cannot be managed or changed
- Empathy towards others who may have inadvertently obstructed the Bravo quest
- Dissipation of ego self-interest in the face of a far bigger and uncontrollable environmental dynamic
- Trust in one’s own ability (based on previous successes)
- Trust in one’s own aspirations which invariably come to fruition
- Remain mindfully in the present emphasizing the positives of one’s life (gratitude)

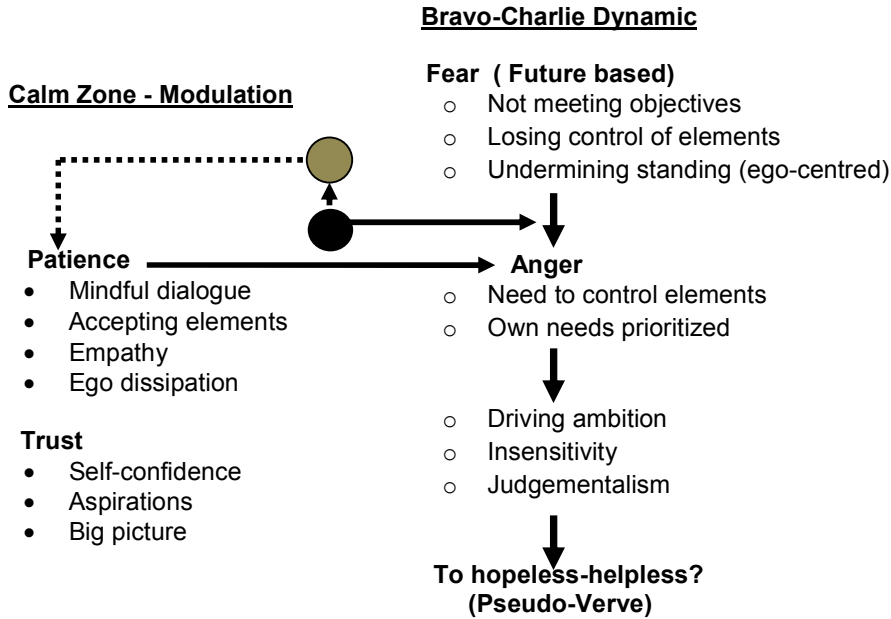


Figure 18. Calm Zone modulation

Intervention based on Chemical Processes

It is far more effective and sustaining to optimize the chemistry of wellness and performance by applying the principles outlines above. By enhancing meaning and purpose and diminishing issues relating to poor self-esteem, a chemical configuration is attained in which serotonin levels are raised and dopamine and noradrenalin levels are brought into the optimal zone for performance. The resultant lowering of pro-inflammatory cytokine levels predisposes to enhanced wellness.

In addition to the above application one may need to introduce more direct interventions designed to correct disadvantageous chemical profiles. In this regard it should be noted that exercise enhances dopamine levels. However excessive exercise may result in raised levels of pro-inflammatory cytokines (usually as a result of the secretion of endorphins) which will tend to lower the levels of dopamine. This then becomes counter-productive. The use of drug therapy may be required to bring the individual into the most resourceful state. Thus the use of SSRI's will tend to raise levels of serotonin which would ameliorate states of fear, anxiety and panic. Several agents can be used to raise dopamine activity which enhances subjective feelings of gratification. The use of agents that enhance dopamine and noradrenalin activity, specifically in areas connected to the pre-frontal cortex, may enhance the executive functions of the pre-frontal cortex.

The use of non-steroidal anti-inflammatory agents (NSAID's) diminishes the inflammatory activity of the pro-inflammatory cytokines. The use of NSAID's also diminishes the negative effects of pro-inflammatory cytokines on the brain and has been shown to enhance levels of personal gratification. Finally it has been shown that stimulation of the parasympathetic nervous system tends to lower levels of pro-inflammatory cytokines. Consequently direct stimulation of the vagus nerve with a paced electrode has been shown to decrease levels of pro-inflammatory cytokines.

Discussion

The Triangles model is proposed as a working application in which individuals and their unique behavior can be defined and quantified in the context of the full spectrum of daily life. The model, which was derived from neuro-physiological processes occurring in the visual cortex, provides the means whereby the chemistry of wellness and performance may be accessed. This is achieved consequent upon the fact that the three defined archetypes reflect not only traits of behavior but also associated chemical activity. Cognitive intervention therefore results in a profound effect upon body physiology, including consciousness itself.

The vast majority of individuals live their lives in default mode. They remain unaware of their strengths and weaknesses and make no attempt to engage fundamental neuro-psychological processes. If in fact they are the products of significant deprivation in their heritage, by not engaging and initiating appropriate intervention, they may remain victims of a less resourceful configuration. In this way they compromise themselves in terms of wellness, performance, quality of life and longevity. In this regard, the Triangles model can be viewed as a practical, empowering application supporting the enhancement of wellness and performance and thus personal efficiency and gratification. The application is not restricted to personal coaching of the individual. Rather, it should be viewed as providing a comprehensive framework for the implementation of multiple modalities of intervention, including leadership training, team-building, management re-structuring, and wellness enhancement.

References

Appels, A., Bar, F.W., Bar J., Bruggeman, C., de Baets M. (2000). Inflammation, depressive symptomatology, and coronary artery disease. *Psychosomatic Medicine*, 62, 601–605.

Everson, S.A., PHD, Goldberg, D.E., Kaplan, G.A., Cohen, R.D., Pukala, E., PHD, Jaakko, T., & Salonen, J.T. (1996). Hopelessness and Risk of Mortality and Incidence of Myocardial Infarction and Cancer. *Psychosomatic Medicine* 58,113-121.

Freund, G.G. (Ed). (2006). Psychoneuroimmunology. *Neurologic Clinics* 24, 3.

Kiecolt-Glaser, J. K., Preacher, K. J., MacCallum, R. C., Atkinson, C., Malarkey, W. B., & Glaser, R. (2003). Chronic stress and age-related increases in the proinflammatory cytokine interleukin-6. *Proceedings of the National Academy of Sciences, USA*, 100, 9090-9095.

Kiecolt-Glaser, J.K., Robles, T.F., Heffner, K.L., Loving, T.J. & Glaser, R. (2002). Psycho-oncology and cancer: Psychoneuroimmunology and cancer. *Annals of Oncology*, 13,4, 166-169.

Lipton, B. (2005). *The Biology of Belief : Unleashing the Power of Consciousness, Matter and Miracles*. Santa Rosa : Mountain of Love.

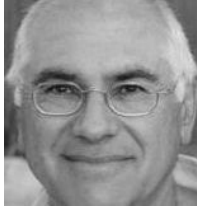
Miller, A.H., Maletic, V., & Raison, C.L. (2009). Inflammation and its discontents: The role of cytokines in the pathophysiology of major depression. *Biological Psychiatry*, 65, 9, 732-741.

Peng, B., Hodge, D.R., Thomas, S.B., Cherry, J.M., Munroe, D.J., Pompeia, C., Xiao, W., & Farrar, W.L. (2005). Epigenetic Silencing of the Human Nucleotide Excision Repair Gene, *hHR23B*, in Interleukin-6-responsive Multiple Myeloma KAS-6/1 Cells. *The Journal of Biological Chemistry*, 280, 6, 4182–4187.

Schetter, A.J., Heegaard, N.H.H., & Harris, C.C. (2010). Inflammation and cancer: interweaving microRNA, free radical, cytokine and p53 Pathways. *Carcinogenesis* 31, 1 37–49.

Tsong, T.Y. (1989) Resonance electroconformational coupling: a proposed mechanism for energy and signal transductions by membrane proteins. *Bioscience Reports* 9, 1 13-26.

Weinberg, I.R., (2007). *The Last Frontier*. Johannesburg: Interpak Books.



Dr Ian Weinberg

Ian Weinberg is a practicing neurosurgeon who has pioneered the application of psychoneuroimmunological (PNI) principles in the clinical and corporate environments. He has also developed an online psychometric (diagnostic) which is used to evaluate individuals in the context of the application. The application is referred to as *The Triangles Model* and dates back to its origin in 1992. The application is used in the training of accredited coaches and is also CPD accredited for the training of medical and para-medical graduates. Workshops are routinely given in the corporate environment, as well as in clinical and personal spheres. The Triangles Model also provides the context for individual counseling.