

## Macro Biophysical Physiological Neuropsychiatry

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### Abstract

Two different matter structures complement each other in personalized brain-mind information-processing:

Separate neural web matters in loops present a wiring medium of the brain. Separate physical reflected information waves of ecology and social needs via air in space contact this neural wiring to absorb and translate into biophysical ones. These concurrently encode emulated macro images on genetic templates in specific brain memory storage. They also present mind-acquired information medium of the brain in a context of given cognitive emotion and behavioral physiological operations.

Clinical and research data prove there is a link between external information and inner images attached to parallel links of their proper cognition, emotion and behavior represented on fMRI, PET, evoked potentials and EEG brain topography.

Furthermore, pathophysiology was shown to disrupt neural wiring loops causing the disorganization of the biophysical mind streams and giving birth to macro biophysical signs and symptoms.

The aim of this article is twofold.

Highlighting biophysical physiological control over involuntary and voluntary acquired information units.

Expert-related interactive instructions bearing favorable influence on the unison brain matter by replacing pathophysiology with transitory homeostatic resynchronization (THR).

**Keywords:** Body operational range (BOR); Macro biophysical mind (BM); Biophysical mental operations (BMO); Transitory homeostatic resynchronization (THR); Psychotherapeutic biophysical prescriptions (PBP)

### Introduction

Experienced Neurologist Zeman A literally titled his article 'Neurology is Psychiatry – and Vice Versa,' [1] and Puterman E et al. [2] showed that changes in genetic telomere length occur after exposure to psychological stress.

Twenty three years of experience with biophysical brain/mind/mental operations within neurophysiology have contributed to the author's insight on the following [3].

a) Baseline physical energy interwoven with information wave units enforces installation of resonance cause – effect evolutionary mechanisms on outer biosensors.

b) Interpreting translation of physical into equivalent biophysical information unit waves, which attach to ions through neural plasticity net media- into cerebral memory repositories, are engraved as knowledge bases for building the intelligent part of Mind.

c) Interpreting nature and homeostatic gene regulation Mind sets for physical and mental operations.

Three basic clinical findings support the claim that genetic telomeres evince a change in length following exposure to psychological stress.

Holocaust survivors experience various sensorial flashbacks in old age.

Evoked potentials interpreted as physical energy traveling information wave units.

Neuroimaging of brain regions with cognition, emotion and behavior tasks.

Levav and Saraceno [4] presented the 2013 – 2020 action plan of the World Health.

Organization (WHO) on a Mental Health Strategy which would focus on '...expanding a knowledge base' with a stress on '...primary prevention' in favor of simply the identification of biomarkers' (p.1). To encourage preventive practice, one must fully realize and comprehend the overall meaning of 'information-processing' through neural web assemblies in order to take advantage of it. The irrevocable proof from research data on evoked potentials [5] 'electrophysiology to functional connectivity mapping' [6] and fMRI [7] paved the way on how to highlight the inseparable external information units translated into biophysical information waves, from neural wiring webs to process them. The main point here is how external

information is translated to biophysical data. The *raison d'être* is not to describe neural wiring, nor to touch upon micro biochemical and biophysical elements participating in the routes of information-processing, but to highlight how external physical information gets translated into biophysical waves by inseparable complex physiological operations.

In this respect, the presented article connects physical energy interwoven with physical (external) information units traveling in waves through space reaching outer biosensors. Enforced waves induce equivalent metabolic energy production aiming to absorb and translate physical information into biophysical wave units designated into cortical memory centers, for biophysical mental operations and biophysical mind matter. It provides an ongoing accumulated knowledge base build-up.

Central to chaotic external energy and information enforce the neural plasticity changes occurring exerting genetic control over physiological homeostatic operations at circadian wake/sleep cycles. In fact, the physical-biophysical physiological approach is the heart of biophysical mind and biophysical mental operations.

Over time, humans have adapted and survived by way of their homeostatic positive emotions. A lack of this flexibility will generate stress-induced acts with physiological disharmony. Hence, the laws of Physics operate within both inanimate and animate worlds alike [8].

### **Holocaust Victims Retrieve Authentic Traumatic Flashbacks**

Holocaust survivors reinforce this macro biophysical physiological approach by providing automatic flashbacks from their own life experiences recorded in their brain-mind domains about 70 years ago as they continue to suffer physiological distress years later. These flashbacks were specifically not observed in their children and grandchildren. Visual flashbacks of repeated hanging, beating, killing, recognized vocals of Nazis, awful smells of dead bodies, palpable dead organs, repulsive tastes, all provide authentic proof that biophysical information had been engraved in memory storage and kept inertly while physiological disharmony is the cornerstone for triggering off flashbacks [9].

### **Elucidating Macro Biophysical Physiological Evolutionary Principles**

In order to elucidate, the basic elements of evolutionary macro biophysical physiological principles is that physical energy interwoven with external information units enforces installation of resonance cause-effect evolutionary mechanisms [10] in two basal breakthroughs. First, individuals who have flexible mastering of physiological operations succeed in reshaping genetic variations of neural plasticity in genes to sustain homeostasis and adaptation.

Secondly, individuals who adhere rigidly to physiological operations causing hypersensitive or hyposensitive disharmony may influence certain gene mutations and eventually result in maladjustment.

Thus, evolutionary physiological operations adhere to the following principles:

Light-dark circadian cycles adapt to the conditions on Earth.

Excitation at awake conscious and inhibition at night sleep restart homeostasis.

Enforcing physical energy with information waves are translated into biophysical ones.

Processed biophysical information is engraved and kept inert in a memory storage.

Willpower via BOR turns off awaking states to induce nocturnal sleep stages.

Willpower controls meeting critical external demands as a reality test.

Genetic control over metabolic energy storage at sleep preserves homeostasis.

Biological clock mechanism preserves circadian rhythmic homeostasis.

Sexual biological clock mechanism arouses sex organs with erotically pleasurable dreams during REM sleep at BOR 2 is oriented for species survival at homeostasis.

Positive emotional strength levels indicate that BOR is at homeostasis.

Experiencing a kinetic metabolic energy supply is for required operational tasks.

Neural plasticity to extend the individual's neural networks from birth-on through all life stages, to accumulate a vast knowledge base and to improve the level of intelligence.

Engraving schemata of brain network into female ovum and male spermatozoid, inherited by a prospective gamete, to advance the human intelligence level at birth.

Electrical bio-impedance change, due to required neural plasticity levels.

All evolutionary mechanisms are matched with rationalized laws of Physics.

### **Rationalizing Biophysical Physiological Principles**

Ecological nature and social nurture interlock into inseparable streams of external physical information wired through neural routes of communication, into genetic templates of cerebral memory storage. Genes, irrespective of whether having mutated or not, exert control over biochemical, organic and inorganic element compositions, with threshold levels controlling physiological wake/sleep cycle operations within homeostatic frames of reference [11].

Laws of Physics guide threshold levels and STEM [12] concepts illuminating the following pivotal points:

1. Earth's feed of physical energy levels induce humans' metabolic energy level [13].

2. Earth catastrophic effect on humans is evident in human DNA alterations, human body and human brain.

3. Physical energy enforces resonant outer biosensor controls of BOR kinetics [14].

4. BOR velocity integrates positive emotional strength, due to homeostasis to fragmental negativity under homeostatic disharmony [15].

5. Extra enforced information initiates neural plasticity for new neural branches [16].

6. Humans gather and conserve information in cortical repositories similar to computers.

7. BOR integrates emotional strength and cognition enabling measuring and prediction.

8. BOR supplies energy to BM in emotion-cognition-behavior aware operations [17].

9. BOR tunes BMO homeostatic emotion, cognition and mistunes disharmony [18].

10. Unfavorable fixed pre-existing conditions hold stress-induced natural or social sources. Both boost BOR energy at BMO causing physiological disharmony [19].

11. Physiological disharmony causes neural breaks at 'sliding staircase' contacts [20].

12. Favorable conditions of disharmony lead to transitory homeostatic resynchronization (THR) and adaptation.

13. Western, Eastern medicine and psychology combine into fragile THR states [21].

14. 'Psychotherapeutic biophysical prescriptions' (PBP) taken from a tool box, equip professionals and subjects at risk with the means to counteract physiological disharmony. Psychoactive drugs alone cannot sustain a lasting THR, thus placing PBP in the forefront for restoring biophysical body-brain-biophysical mind homeostasis.

### Circadian Sleep-Wake Cycle Governs Biophysical Physiological BOR Stages

Fundamental biophysical, physiological mechanisms regulate body operational ranges

(BOR) that operate with excitation during the day when awake and inhibition at night revolving between homeostasis (health) and physiological disharmony. Life per se is within the kinetic frame of life sustenance threshold. BOR fluctuates around sleep/wake cycles with four (1, 2, 3 and 4) sleep speed-raising BOR stages and with four wake phases (rest, minimal, medium and maximal exertions), entering a fresh cycle. Nature regulates a genetic wake/sleep circadian cycle. Threshold is central to automatic control/regulation of individual homeostasis and species survival, boosted by intelligent progress and adaptation.

BOR 1 (sleep stage four) resynchronizes homeostasis. Triggering erotic dreams from adolescence onward, with spontaneous orgasms in females and ejaculation in males at BOR 3 (REM sleep stage two) may indicate an automatic stimulation of sex organs, ultimately vital for orienting into heterosexual encounters and species survival.

When awoken, post erotic pleasurable feelings boost individual incentives for sexual orientation to heterosexual mating. Crucial to species survival mechanism thus not left for voluntary preferences.

Any shift in homeostasis may shatter personal preferences over species survival. Figure 1 presents BOR.

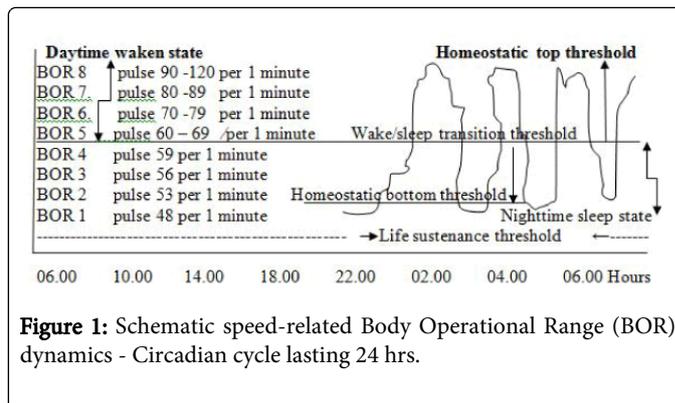


Figure 1: Schematic speed-related Body Operational Range (BOR) dynamics - Circadian cycle lasting 24 hrs.

Bonobos primates [22] share 98% of their genetic profile with humans, yet they have excessive sexual intercourse with different partners boosting pleasure since enjoyment is the utmost biological mechanism of homeostasis (healthy state). BOR accelerations via day operations help to prevent major alteration from homeostasis.

### Hitherto Unknown or New Information Units Processed Via New Neural Pathways

Physical waves of images reflected from external objects, subjects and live event scenarios enforce resonant equivalent absorption and translation into waves of biophysical information units, processed in cortical working memory centers, from condensed micro units into operational macro geometrical images.

The new and old biophysical representations processed via both maternal and paternal neural medium branching schemata are inherited by offspring with:

1. An improved schemata of joined maternal and paternal cerebral neural networks.
2. Undeveloped regulation is refined during circadian cycles through nurturing and learning for strengthening of neural networks at homeostasis.

The personal extra effort acquiring a knowledge base within the neural nets is a baseline gain to prospective offspring starting with a potentially higher intelligence [23].

### Body Operational Range (BOR) and Emotion Strength

BOR will frame macro physiological operations and at the same time conform to biophysical information-processing kinetic energy and electrical signals traveling into Limbic centers. Thus BOR will generate a unified emotional positive strength (pleasure) from homeostasis and negative strength (displeasure) from physiological disharmony. This forewarning emotional system exists in all biological entities, i.e. in all life experiences there is a direct inner body relation to any external or internal event. Thus, there is a strong correlation between BOR levels and emotional experience in quanta units. Clinical evidence indicates, the higher the BOR levels the stronger the experiences under homeostatic frames of reference.

The importance of BOR's analysis is displayed in the following examples:

A couple argue over the volume of the TV; she seeks to increase the volume, while he asks to lower it.

A couple in a hotel room argue over the air-conditioning; she wishes to cool the room down and he claims it's too hot.

A middle age couple's dispute; she enjoys sex but he dislikes initiating it.

In these examples two individuals are on bipolar physiological disharmony and the best biophysical physiological intervention is to provide information which aims at driving them into a transitory homeostatic resynchronization (THR) state with positive emotions. Since BOR stages are almost equivalent to emotions, BOR is organized at homeostasis, whereas at physiological disharmony it is disorganized with negative emotions.

### External Information Waves Regulate Neural Plasticity

External energy transfers physical information units providing a practical means for evolutionary mechanism to make the humans the most intelligent race on Earth.

Under this premise, external information supplied by the unpredicted nature of information, given by optical images, vocals, scents, palpable touch and tastes, in various combinations impinges upon surfaces of outer biosensors. Extra physical forces on outer receptors induce them to replicate and enrich their density, in a wire-like neural fiber extending the line to its destination. Extra receptors and their linear fibers potentiate neural plasticity in receptors, for complementary information units, thus creating additional complex neural webs. The main point here is that the direct processing of biophysical external information influences the setting up of new neural branching connectivity that serves as milestones for enriching the human knowledge base.

### Cortical Libraries of Knowledge Base

Searching for a means for survival from full dependence on local resources, human accumulate collective information with complex nonverbal signs and further developed verbal communication led to these means of relying on acquired biophysical information units to compose organized cortical software - analog repositories of each individual's complex knowledge base namely 'common sense'. It is a wisdom-like directory guiding daily experiences. Later on in life, individuals attain formal and academic knowledge to improve survival, with intelligent quality of life adaptations.

Biophysical information is absorbed and translated following rearrangement, reprocessing and engraving it into memory repositories. Old and new information serve the same purpose for daily operations and adaptation. Under homeostasis there is a sensitive awareness in every individual to recognize with full awareness the meanings of objects, subjects and live event scenarios accumulated within one's own 'cortical libraries,' while subjects under physiological disharmony possess fragmental information giving to 'unconscious meanings.'

Fragmental information to and from memory repositories may flow via alternative non-specialized spare ion channel routes, due to a blockage, thus reassembling the specialized data base into disrupted information pieces.

### Metabolic Energy Levels for Given Operations

Any physiological biochemical-biophysical operation, fundamentally utilizes metabolic energy production and expenditure.

New or old information mobilizes given metabolic energy levels for operation.

As in technology, body operational ranges (BOR) hold basic prerequisites, to obtain inner signals from an operable organism. Cortical Limbic centers obtain from the whole organism BOR operation signals integrated and analyzed as a biophysical emotional strength patterns. The latter can be measured and predicted.

A crucial point is that circadian rhythms, at the end of the waken cycle must consciously reduce the influence of external mobile or fixed pre-existing conditions, consequently supplying excitatory information-processing.

As cortical centers sense out cessation of excitation their wake-sleep transition threshold turn off their mechanism blocking any accidental sensory information. This in turn guarantees inhibition of all external and internal receptors for mental operations.

The body's operational outlook stages for the sleep-wake cycle indicates a compliancy with strict laws of physics prescribing velocity-related inner operations by external forces and demands. Taking this into account, these stages are measurable by objective and predictable means and thus sleep -wake cycles are under nature-nurture electronic-analog control.

### Biophysical Mental Operations

The key element in any mental (historically defined) operation actually relates the Biophysical materialistic matter rules that govern the so-called mental operations. In fact they present the waken BOR level relating to intellectual (cognitive, emotional and behavioral) tasks since BOR turns on velocity -dependent metabolic energy levels serving cognitive units, emotional strength and behavior levels. In essence, they all undergo both objective and subjective measurements and predictions in unison.

Mental or biophysical definitions of matter in operations neither devalue their real meaning nor their means of operations. They boost the expert theory level, and research horizons and practice, knowing that intellectual individuals will use it properly to stay healthy (at homeostasis) for optimal adaptation and quality of life in the community. Whether simple or complex, the foundations of biophysical mental operations stand firm and accountable, for objective and subjective measures with electrophysiological and brain imaging and predications.

### External Fixed Pre-Existing Conditions

The key point here is that if an individual is exposed to persistent repeatable stress-inducing states, they produce macro physiological and biochemical -biophysical distress. Under such premises unfavorable conditions may be shown to influence individual's social encounters and create double decompensation.

Social protection means replacing the unfavorable with new but adaptive fixed pre-existing conditions, help mobilize agencies to take measures in order to protect the most susceptible and vulnerable subjects.

Predominately in high risk groups, these hypersensitive subjects are vulnerable to inner bio-physical distress. For instance, they feel extreme discomfort at average temperatures, regular lighting, average sound volume, and touch and so on, while others within homeostasis feel comfortable.

## Physiological Distress Initiates a Virulent Interactional ‘Sliding Staircase’.

Unfavorable stressful social encounters may boost BOR of hypersensitive subjects suffering from physiological disharmony. As a result, a person loses the ability to break away from exercising uncontrollable acts leading to unfavorable social responses.

Social encounters deteriorate into a ‘sliding staircase’ lacking the means for protection or correction. Their four stages could be measured and predicted.

The first is a ‘fragmentized’ stage of encounter with a loss of about 25% of content discussed by avoiding sharing or the individual disconnects.

A second stage is the ‘social blockage’ which is characterized by loss of about 50% of content discussed or of social encounters.

The third is the ‘social paralysis’ sanctioning about 75% of content or encounters. Finally the fourth stage is that of ‘social withdrawal’ or double alienation. This process of a ‘sliding staircase’ was previously observed and identified by the author in Kibbutzim with a stable social environment.

## Adaptive Fixed Pre-Existing Conditions

Subjects with chronic physiological disharmony can be offered the opportunity to exchange the underlying distress with favorable conditions that voluntarily may select new patterns counteracting harmful social stress.

As a result experts must teach their patients to utilize natural, social and self-control over rewarding physical information units to gradually replace disharmony with transitory homeostatic resynchronization (THR) remission.

This places nurture at a pivotal point by employing physiological knowledge to reverse disharmony into homeostatic functions under favorable external conditions.

## Western and Eastern Methods to Sustain THR Remission

All Western, Eastern and folk medicines are based on a common denominator. It is a resilient macro evolutionary regulation dedicated to biophysical physiological processes leading to transitory homeostatic resynchronization (THR) remission (Figure 2).

It relies on the effect of the gradual weakening of influence of mutated genes on a given life-span accountable for regulating physiological disharmony.

A term-deregulated genetic control, under unfavorable conditions is the foundation of a disease outbreak.

Outbreaks at a particular time in the life of subjects cause chronic diseases regulated with mutated genes. Medical sciences missed and did not adequately address the impact of natural and social environments using favorable positive attitudes to maintain a stress-free condition leading to uninterrupted sleep at night, thus nurturing and sustaining daily emotions of pleasure (homeostasis).

## Psychotherapeutic Biophysical Prescriptions

Levy-Gigi et al. [24] in Biological Psychiatry present evidences how CBT contributed in reversing physiological disharmony placing the biophysical unifying model into broad practice.

This presented model optimizes CBT and psychotherapeutic methods in general, while simultaneously pinpointing the focus on personal needs in an empathy framework supplying subjects at risk with ‘a tool box’ called psychotherapeutic biophysical prescriptions (PBP) (Figure 3).

Hypersensitive and over-vulnerable subjects must be taught to refocus their attention vector on a given event unit per unit of time in an ordered life style.

They must know how macro physiological strategies will help in organizing healthy night sleep, balanced nutrition, proper working hours, sport and recreation.

All those factors will eventually cause shifting into THR remission and sustain the necessity to:

1. Strive to repeat positive feelings from one’s own known pre-existing conditions.
2. Urge one to explore social experiences resulting in peaceful and tranquil emotions.
3. Teach and standardize psychotherapeutic biophysical prescriptions (PBP) helping to regain relaxation, quiet or serene states measured and predicted in successful cases.

At present approximately 150 categorized psychotherapeutic biophysical prescriptions are waiting for entrainment among professionals.

An interesting point is that Goetz [25] presented a nutritional equilibrium theory of physiology that may add extra physiological mechanisms to the given macro biophysical physiological neuropsychiatric practical model.

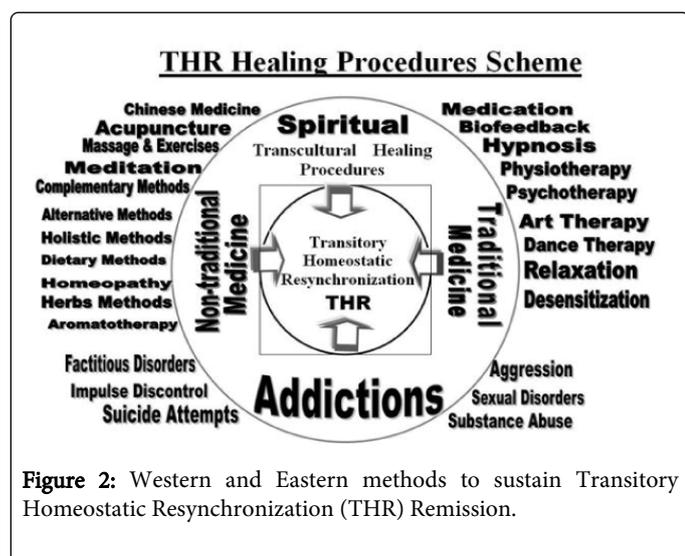


Figure 2: Western and Eastern methods to sustain Transitory Homeostatic Resynchronization (THR) Remission.

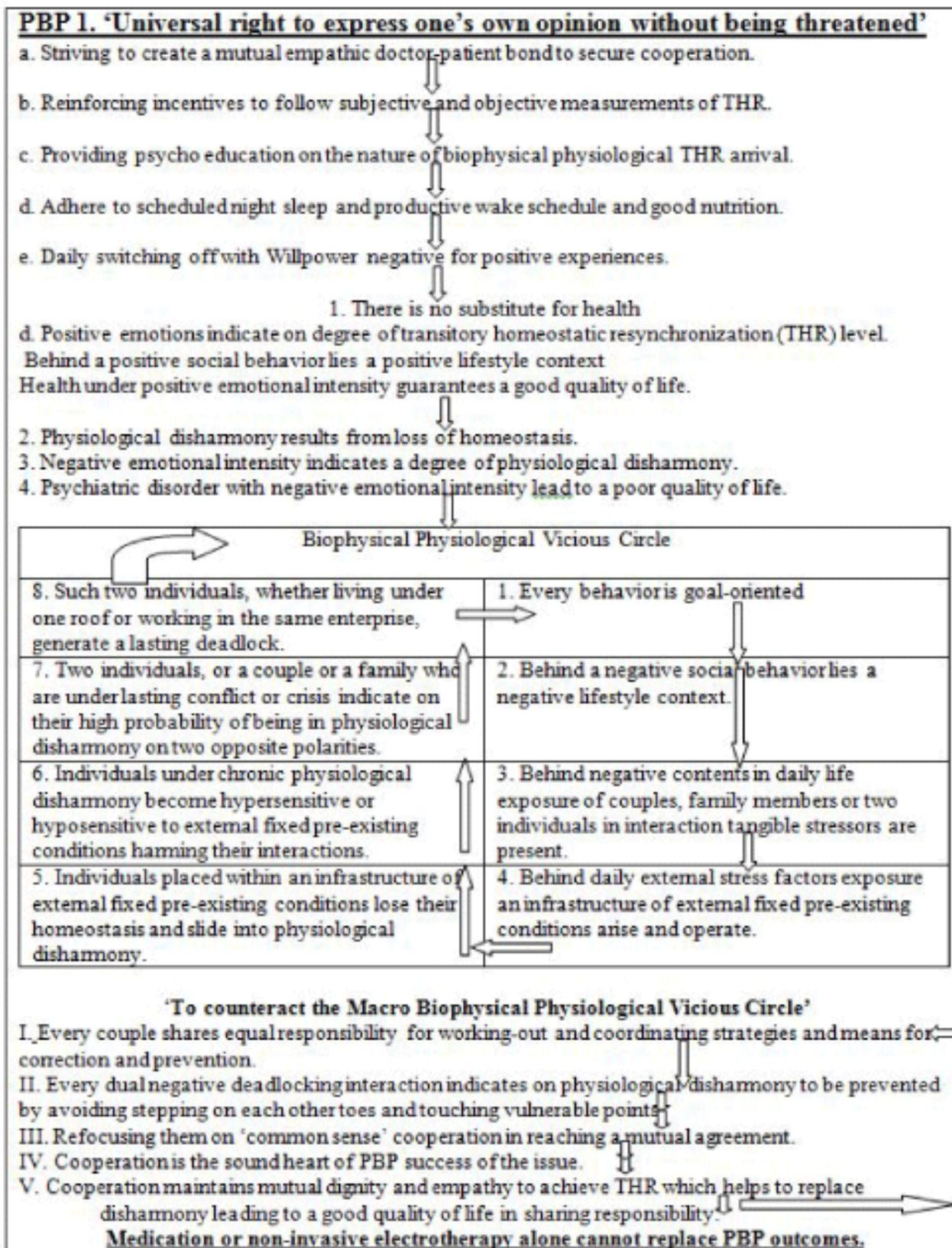


Figure 3: Generalized and pinpointed algorithmic strategies for Psychotherapeutic Biophysical Prescriptions (PBP).

## Conclusion

The model presented in this article strives to explain how the macro biophysical physiological neuropsychiatry operates within a fundamental two matter brain (immobile) and mind (biophysical physiological mobile) model by navigating the overall body-brain-mind unity with a double physiological control mechanism, of involuntary and voluntary nature. The article relates to the premise that biological entities, headed by the human race, perform identical physiological operations with resonate anatomical neural wiring connectivity. From birth, humans reproduce authentic reflected images, emitted sounds, scents and touches into biophysical physiological (mobile) information-processing.

The article also contributes practical points. All so-called psychiatric and psychological attributed signs and symptoms exist due to their macro biophysical physiological grounds, being measurable with High-tech devices. In practice, except in the case of medication and various physical procedures accountable for these biophysical signs and symptoms, there are neurotherapeutic instructions or expert prescriptions favorably influencing stress-distress, pathophysiological loop release. Not only must future practice and research refine sets of such prescriptions in combined medical practice but future macro biophysical neuropsychiatry must overcome the challenge of those barriers standing before the discovery of biophysical imprinting forms on specialized genetic templates emulating external macro images, letters of words and life event scenarios.

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