

# **Mechanics of Living Systems (Biomechanics, Psychomechanics and Mechanics of Time) Applying the Principles of Descartes Mechanics.**

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03.01.2019

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*In order to survive you need to explore the world around.  
In order to survive while staying healthy you need to explore your inner world.*

## **Abstract**

A dream led humans to their future creating their reality. Over a hundred years ago a human dream about flying came true and aircrafts appeared. At present a dream about space flights emerged and the spacecrafts are being developed.

New dream creates new reality and new challenges: how to move in open space and how to survive within the unknown environment that differs from the original birth environment of the Mother Earth.

A healthy human survival requires deeper understanding about how living systems work, interact and about the properties of space where humans can safely live.

The biomechanics, psychomechanics faces new challenges: to understand how living systems move, and how their control hierarchy is structured, what are the characteristics of internal space, where the psychophysical events occur.

The psychomechanics of 'I' is related to the mechanics of time which explains how resonance structures psychophysical events and allows living systems to interact between the tiniest particles and the meta systems to form complex multidimensional worlds. Instant interactions of living systems raised a new approach to the Mechanics of Time.

The innovative approach to most critical phenomena follows the breakthrough in fundamental physics and Descartes Mechanics by G. Shipov and over 20 years of experimental bio-medical research.

**Keywords:** Descartes Mechanics, Biomechanics, Psychomechanics, Mechanics of Time, ten-dimensional coordinate system, motion

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## Foreword

*This article was inspired by a wonderful initiative of International Conferences on Movementis: Brain, Body, Cognition, held at Oxford University in 2017 and at Harvard Medical School in 2018, led by Prof. Gerry Leisman and his International team.*

*While searching for a meaningful topic for the conference, the idea had sparked: “Movements! Do we know how people move?”*

*This key word ‘Movements’ fit the principles of “Descartes Mechanics” by G. Shipov. For over twenty years I wondered why most physicists could not understand G. Shipov’s theory. The answer came during my work over the present article: It needed to describe a living system to understand the depth of G. Shipov’s Unified Theory and Unified Mechanics.*

*Welcome to a fascinating Journey!*

## Introduction

We revise human bio-system: how it is organized in terms of biomechanics and psychomechanics and their multiple dimensions.

Biomechanics is the study of biological systems, particularly their structures and functions, using methods derived from mechanics, which is concerned with the effects that forces have on the motion of biological bodies. The ultimate target of biomechanics is to achieve understanding of regulatory systems and master self-control.

One of the fundamental concepts in mechanics is Space where all the events and interactions occur. The nature and essence of Space and its mode of existence have been debated for millennia. Physical space has long been perceived as having 3 linear dimensions: length, breadth and height.

In Newtonian mechanics space, in which events take place, got non accelerated systems (inertial), is three-dimensional with 3 perpendicular coordinates (x, y, z). Mass (an evenly-filled object) is seen equal to its weight and it moves under the action of external forces.

At the beginning of XX<sup>th</sup> century, when Albert Einstein was attempting to understand more about physical interactions, he sought a geometry that could unify gravity and electromagnetism. He proposed a “Philosophy of Geometry” and sent a message to future generations of scientists to study Nature from the point of view of geometry first and then to “fill it with Physics” in a search for a “more advanced quantum theory” [1]. He realized that to construct a successful geometric theory, which encompassed both gravity and electromagnetism, it was necessary to enlarge the number of degrees of freedom.

Drawing on experiments into the distribution of light, Albert Einstein introduced the concept of space-time. As a results, together with Hendrik Lorentz, a new theory of mechanics

emerged. Called Einstein-Lorentz mechanics, it proposed a fourth coordinate  $x_4$  in addition to  $x$ ,  $y$ ,  $z$ . This fourth-dimensional geometry was mainly mathematical, since it did not contain any physical constant. The implications for this mechanics were far-reaching.

The Russian theoretical physicist Gennady Shipov further generalized the four-dimensional theory of Relativity showing that the equations for gravity and general relativistic electrodynamics could be geometrized successfully using the geometry of absolute parallelism (the geometry of parallelizable manifolds) and vacuum equations. He proposed his “Theory of Physical Vacuum” in 1990. This book was referred to by Moshe Carmeli, a Prof. of A. Einstein’s studies at Ben Gurion University and Former President of the Physical Society of Israel, in his letter to the author of this article: *“Dr. Shipov has generalized the ordinary four-dimensional Relativity Theory. He showed that the right-hand sides of the Einstein field equations for gravity and the equations of general-relativistic electrodynamics can be geometrized successfully, if one uses not a Riemannian geometry but the geometry of absolute parallelism. The new field equations he suggests were written as*

$$R_{jm} - \frac{1}{2} g_{jm} R = \nu T_{jm} \quad (1),$$

*...I find the work of Dr. Shipov quite original and creative. His ideas about "**Universal Relativity**" and "Physics Vacuum" are greatly interesting, and are excellently developed by him to a theory, which seem as **a continuation of Einstein's work**”[2].*

G. Shipov found solutions for A. Einstein’s first and second problems and created Vacuum equations that could be written in different forms to describe physics of spin and anti-spin, matter and anti-matter (left and right), etc. [3, 4, 5]. His theory was confirmed experimentally [6].

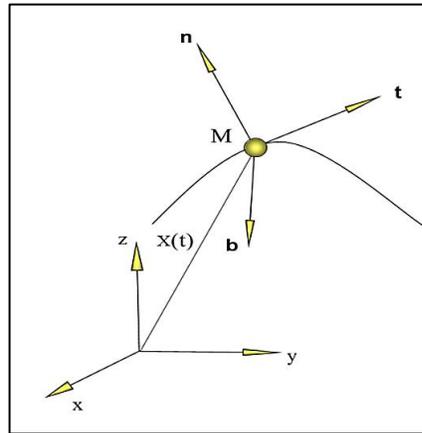
Since 1999, G. Shipov and his team have carried out experiments on a new type of motion and an innovative propulsion system, which resulted in **“Descartes’ Mechanics”** (the title of that article was advised by Prof. Daniel Dubious, Belgium) and the article was published in 2005 by University of Liege, Belgium [6].

The space of events in which events happen, viewed from an arbitrary accelerated frame of reference that is characterized by ten degrees of freedom and is described by Cartan’s structural equations of absolute parallelism geometry A4(6). Such system is represented by ten-dimensional space, where 4 translational coordinates  $x_0 = ct$ ,  $x_1 = x$ ,  $x_2 = y$ ,  $x_3 = z$  describe the motion

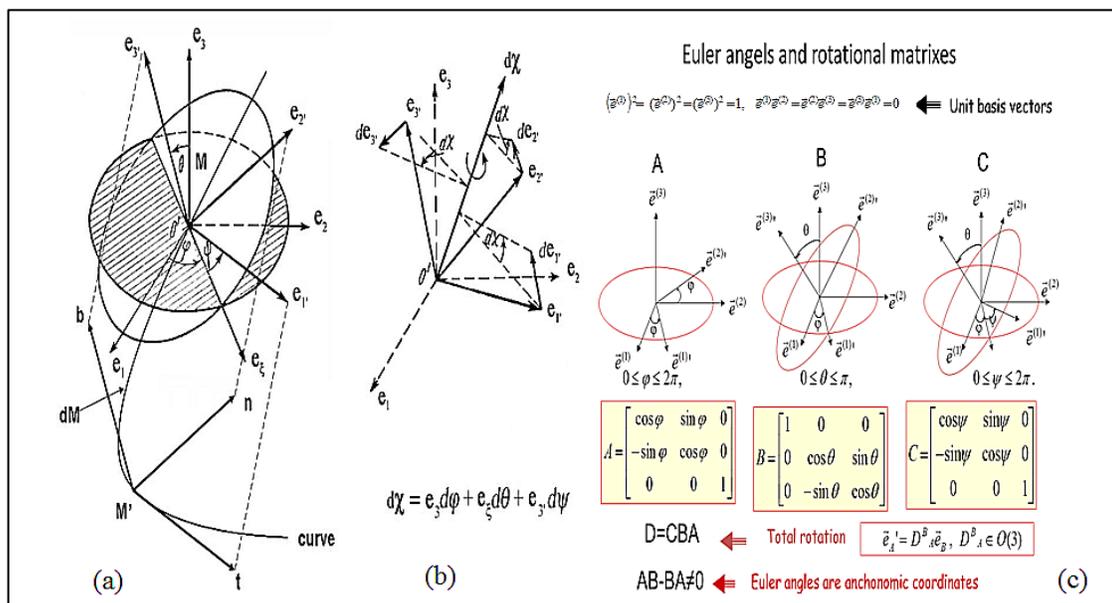
of the origin O, 4-D orientable point, and 6 angular coordinates  $\varphi_1 = \varphi$ ,  $\varphi_2 = \psi$ ,  $\varphi_3 = \theta$ ,  $\varphi_4 = \vartheta_x$ ,  $\varphi_5 = \vartheta_y$ ,  $\varphi_6 = \vartheta_z$  describe changes in its orientation [7].

G. Shipov applied the structural equations of absolute parallelism geometry  $A_4(6)$  that represent an extended set of Einstein-Yang-Mills equations with the gauge translational group  $T_4$  defined on a base  $x^i$  and with gauge rotational group  $O(1,3)$  defined in the fibre  $e^i_a$ .

The events of **material point (oriented – geometrically)** are compared with **physics of orientable material point** and are presented below, figure 1. [7] [8]

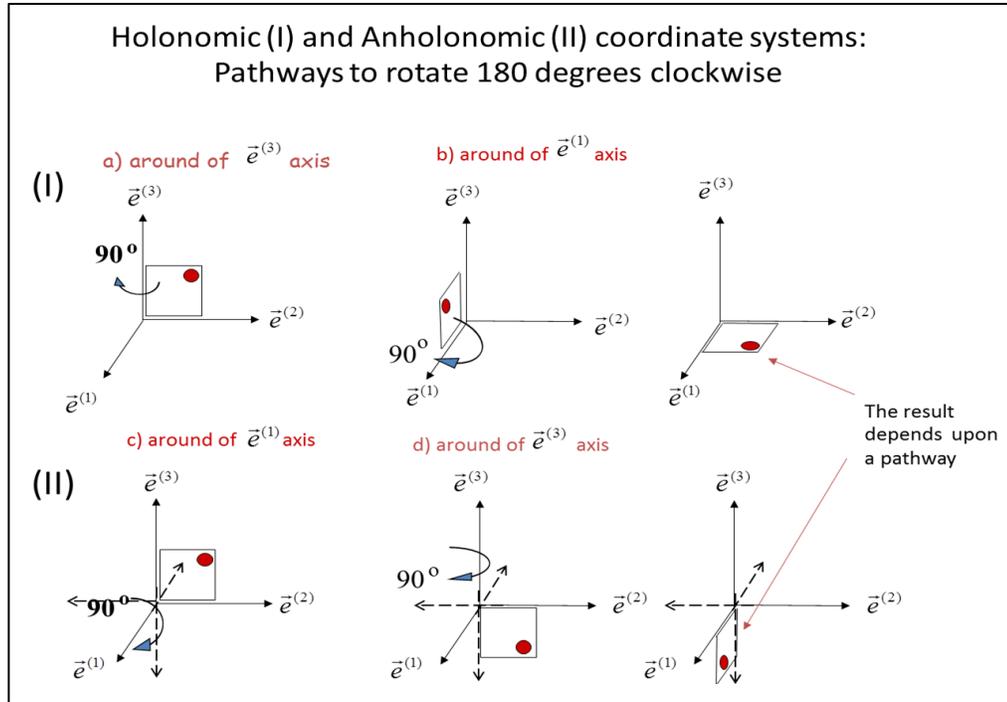


**Figure 1: Trajectory of 3D oriented point.**



**Figure 2: a) Oriented and orientable material point: changing of the orientation of an oriented point at displacement of point M on dM; b) according to Euler's theorem an infinitesimal rotations around the three axes is possible to replace by one rotation at an infinitesimal angle defined by vector  $\vec{e}_\xi = [\vec{e}_3, \vec{e}_3]$ . (1.b) Euler angles and (1.c) rotational matrices. [7] [8].**

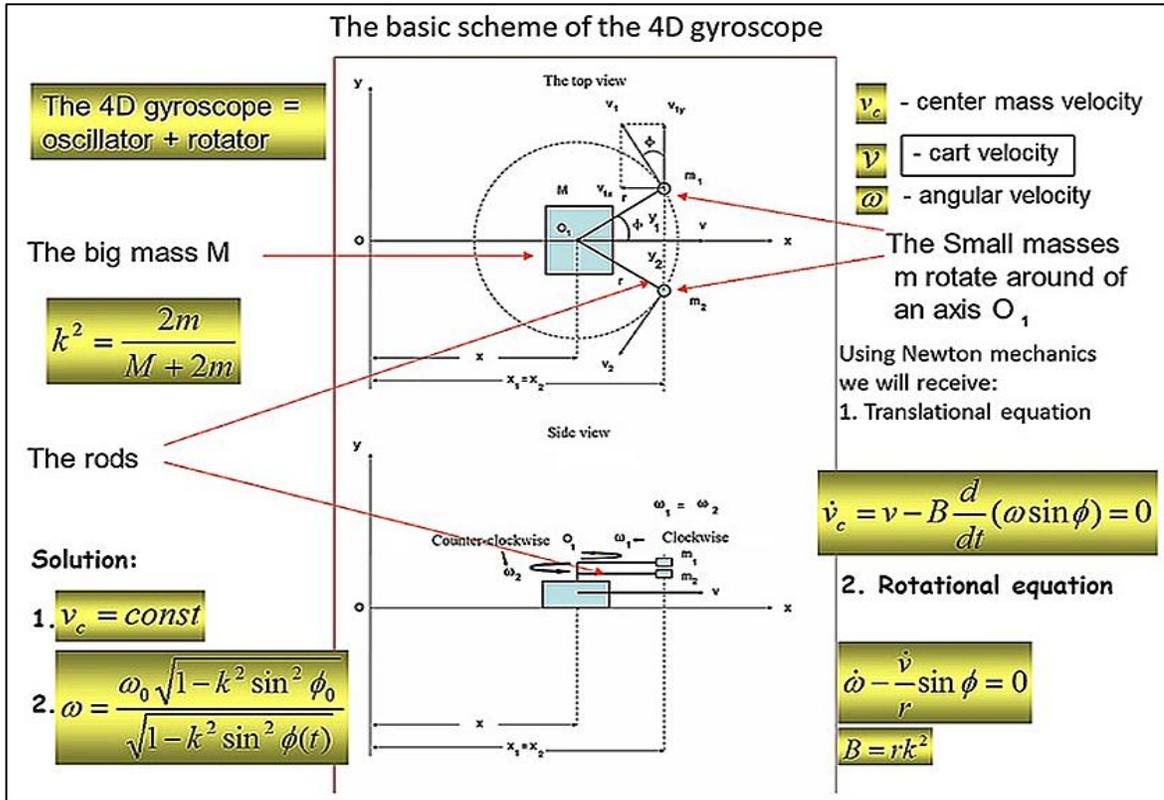
G. Shipov followed the definition of Rene Descartes for motion as rotation. Anholonomic (open – in a simple language) rotational coordinates (Euler angles) were used as elements of the internal space in DM mechanics, which generate a rotational relativity [9].



**Figure 3:** Holonomic (I) and Anholonomic (II) (open, not closed) coordinate systems: pathways to rotate 180 degrees clockwise are compared. We can see more freedom for rotational movements in the second case (II) [9].

G. Shipov describes space as consisting of orientable material points that rotate like tiny gyros. The space of events of an orientable material point is seen as six-dimensional manifold of coordinates as vector bundle on a base.

The visual concept of the orientable material point (with own rotation) can be expanded and presented as 4-D gyroscope [10] with differently orientable small masses or elements rotating around gyro's center.



**Figure 4:** model of 4-D gyroscope with 2 small masses simultaneously rotating in opposite directions around the center of total system. The accelerated motion forward and backwards is created by internal impacts and guided by mathematical application, created by G. Shipov. [10]

In terms of local Lorentz group the Descartes Mechanics describes rotation of 4-D gyroscope by 2 matrices [R,L]. The spatial rotation of small masses are described by matrix R:

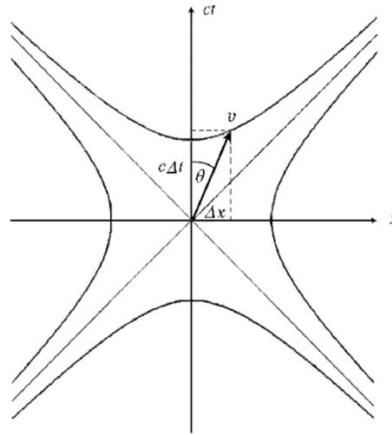
$$R = \begin{pmatrix} 1 & 0 & 0 & 0 \\ 0 & \cos \phi(t) & \sin \phi(t) & 0 \\ 0 & -\sin \phi(t) & \cos \phi(t) & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix}$$

And accelerated motion along its central axis is described by the matrix L:

$$L = \begin{pmatrix} 1 & -th\theta(t)_x & 0 & 0 \\ -th\theta(t)_x & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix}$$

Therefore the device was called 4-D gyroscope.

G. Shipov remarks that Time has a rotating nature as it is seen in graphic image of accelerated motion:



**Picture 4:** Translational acceleration  $W_x = dvx/dt = c(th\theta_x)$  along axis  $x$  there is rotation in plane  $x$ -  $ct$ .

For the first time, G. Shipov introduced a model of a 4-D gyroscope, where 2 small masses simultaneously rotate in opposite directions around the center of the total system. The accelerated motion forward and backwards is created by internal impacts and guided by mathematical application, created by G. Shipov. The inertial propulsion system moves back and forth due to changes in its inner elements in a space–time continuum and also due to internal forces that are created by differently rotating local elements in the system.

**The main results of this research are:**

**G. Shipov in DM mechanics uses Geometry of Absolute Parallelism to describe rotational motion - ten-dimensional reference frame.**

**The motion forward of the four-dimensional, 4-D, gyroscopic propulsion system occurs due to internal energy created by redistribution of internal forces.**

**Internal forces are created by the rotation of the internal components in the system in ten-dimensional space-time.**

**The new type of autonomous motion was defined as an initial stage of Vacuum Teleportation (motion due to redistribution of internal forces and internal energy) [11]**

*In order to heal a human we need to understand how the human system works!*

## **Discussion on Biomechanics**

Motion is an essential property of living systems. We will apply the principles of Descartes Mechanics (DM Mechanics) [6] to describe the motion of a biological system [12].

### **Space perspectives**

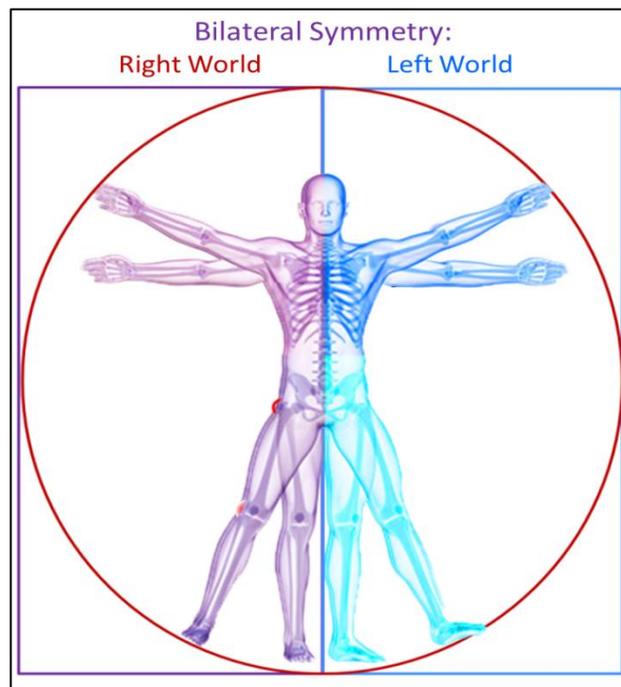
An external observer can describe a static biological object, which does not move, by using a 3 dimensional frame with coordinates  $x, y, z$ .

An external observer can describe a moving object using a four-dimensional frame with the coordinates  $x, y, z$  and  $ct$ .

However if an internal observer (an aspect of self-observation as “I”) has needs to study his own movements, he needs another perspective in order to explore his own internal space and internal interactions. With that perspective, he can better understand the mechanisms of his own movements.

### **Static and dynamic phases**

A simplified representation of a static phase in a computerized image based on Leonardo Da Vinci’s “Vitruvian man” shows static bilateral symmetry of left and right planes.



*Figure 5: A simplified representation of static phase in a computerized image based on Leonardo Da Vinci’s “Vitruvian man” shows static bilateral symmetry of left and right planes.*

Dynamic phase of human motion occurs due to breaking the bilateral symmetry. Human system in motion is complex and its movements occur instantaneously at different levels and in different directions. We need a special reference frame to describe its dynamic phases that form kinetic balance.

### Ten-dimensional frame

Figures 2 and 3 show a working space with six angular coordinates  $\varphi_1 = \varphi$ ,  $\varphi_2 = \psi$ ,  $\varphi_3 = \theta$ ,  $\varphi_4 = \vartheta_x$ ,  $\varphi_5 = \vartheta_y$ ,  $\varphi_6 = \vartheta_z$  to describe spatial rotation of a complex system. While 4 translational coordinates  $x_0 = ct$ ,  $x_1 = x$ ,  $x_2 = y$ ,  $x_3 = z$  describe the motion forward (translational motion). Therefore to describe the space of the total system involved in movement a ten-dimensional frame was used.

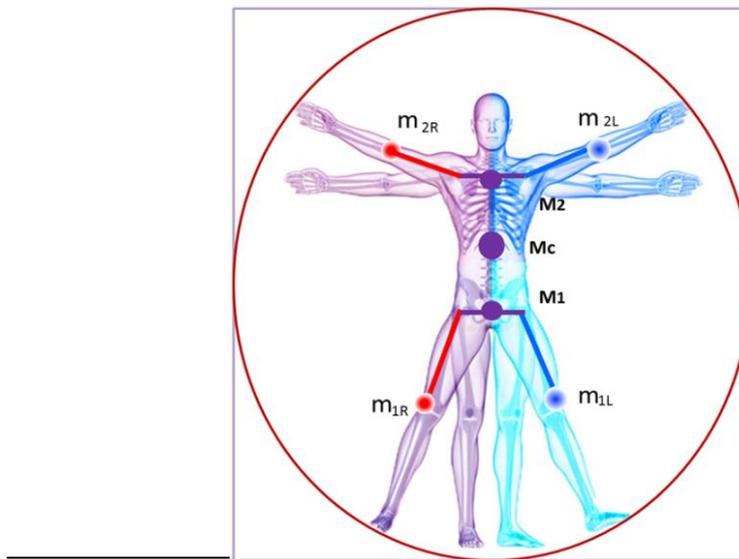
### Type of movements

There are 3 principle types of movements along the base line (trajectory): walking, jumping (leaping), rotating. The other movements represent different styles, modes, combinations of the above.

### Human Propulsion system

We will apply DM Mechanics to revise how human walks.

A human being moving forward is a sample of bipedal propulsion system (2 feet). It is called also locomotion and is associated with motion of the center of total mass (body) to another location in space-time. A center of total propulsion system (Mc) is associated with center of force and the energy interactions in this system.

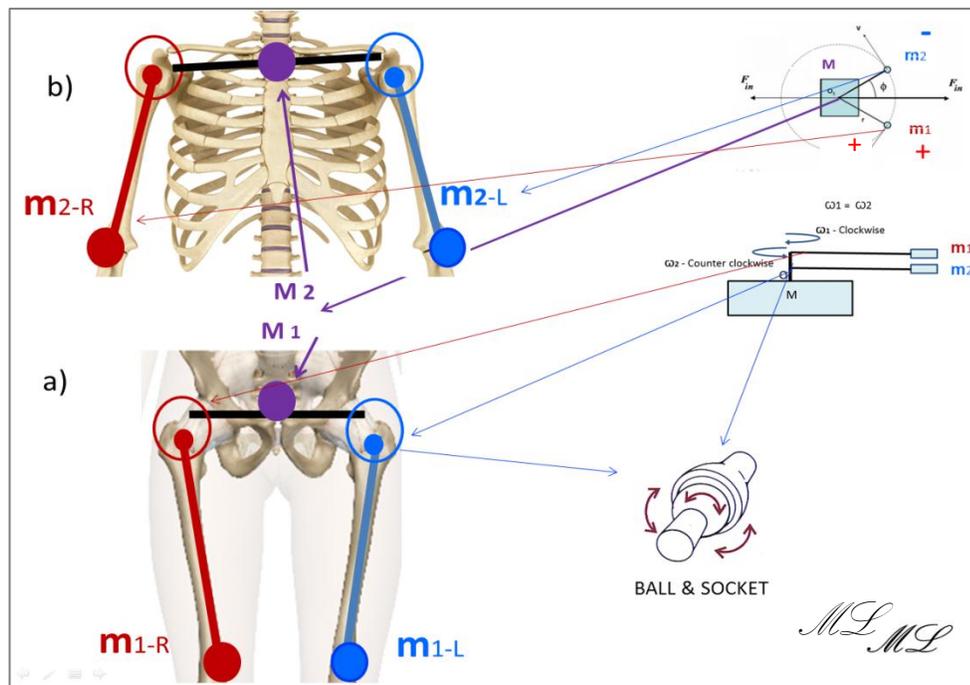


**Figure 6:** A simplified representation of phase space in a computerized image based on Leonardo Da Vinci's "Vitruvian man". It shows motion groups and their centers in Fisher-like projections.

For our analysis the total motion system with center  $M_c$  (Mass – central) is analytically subdivided into local subgroups with centers named  $M_1$  and  $M_2$ , depending on their physical functions and spatial symmetries. At this stage, we will not do not discuss their additional extensions (such as below knees and elbows).

The center of total motion system is designated  $M_c$ . The local pedal group is designated  $M_1$  and the local manual groups is called  $M_2$ . The right side of the body is printed in red. The left side is printed in blue. Central (shared) elements are shown in purple. Lower limb extensions are not marked at this stage.

We draw an analogy between the motion groups  $M_1$  and  $M_2$  and the DM Mechanism of 4-D gyroscope rotation (simultaneous rotation in opposite directions: clockwise and counterclockwise) as seen in figure 3. The smaller components  $m_1$  and  $m_2$  in both systems rotate around their local centers in different directions simultaneously. They are connected to their relevant centers in a way that is similar to “a ball and socket” joint, such as by the head of femur and acetabulum at the hip joint and by the humeral head and glenoid cavity at the shoulder joint.



**Figure 7:** The concept of rotor mechanisms: a)  $M_2$  - the DM Mechanism of a local manual group.  $m_{2-R}$  small mass in a right spatial plane,  $m_{2-L}$  small mass in a left spatial plane. They are connected through a flexible axis using ball-and-socket-like connections which are formed by the humeral head and glenoid cavity at the shoulder joint. and socket” joint, such as by the head of femur and acetabulum at the hip joint. b)  $M_1$  - the DM Mechanism of a local pedal group,  $m_{1-R}$  small mass in a right spatial plane,  $m_{1-L}$  small mass in a left spatial plane. They are connected through a flexible axis using ball-and-socket-like connections which are formed by the head of femur and acetabulum at the hip joint [12].

The ultimate aim in a propulsion system is to achieve maximum control and efficiency of motion.

The Nature tends towards the Symmetry. Therefore the phases of static symmetries are alternated by phases of dynamic or kinetic balance of anti-phases.

The control of human movements and its biomechanical balance and efficiency is quite sophisticated and related to higher hierarchic levels described by psychomechanics.

Therefore, for our analysis, we will subdivide this system into several hierarchic levels according to their causality principles.

Our Biomechanical system includes the description of 3 functional levels: 1) Basic motion by a primary group; 2) Compound motion by two or more motion groups; 3) Universal motion system by innate movement reflexes (wave-like movements, precession and nutation).

The second part, dedicated to Psychomechanics includes 5 levels: 4) Executive control system; 5) Somatosensory or informational system; 6) Strategic; 7) Subconscious; 8) Real-Time.

|     | Science           |   | Levels                                       |
|-----|-------------------|---|--|
| I   | Biomechanics      | 1 | Basic motion by a primary group              |
|     |                   | 2 | Compound motion by two or more motion groups |
|     |                   | 3 | Universal motion system                      |
| II  | Psychomechanics   | 4 | Executive control system                     |
|     |                   | 5 | Somatosensory or Info-sensory                |
|     |                   | 6 | Strategic Mastery of Self                    |
|     |                   | 7 | Subconscious                                 |
|     |                   | 8 | Time   |
| III | Mechanics of Time |   |  |

**Table 1:** *Levels in Biomechanics and Psychomechanics.*

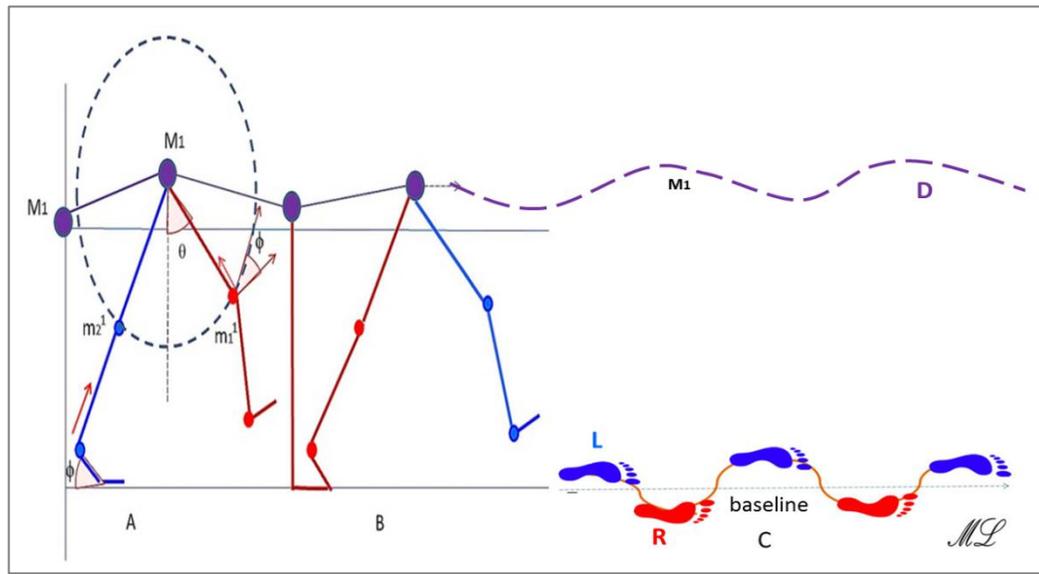
The bio-medical data of psychological states is based on practical research for over 20 years and obtained by use of scientific equipment and devices.

**Level one: Basic motion by a primary group (symmetry)**

Starting with a local motion group  $M_1$ , the stance of origin (the initial position) is standing with bilateral symmetry. The beginning of a forward movement breaks this symmetry. Breaking the symmetry by spatial movement follows by bringing about a state of dynamic balance of anti-

phases. The state of balance is brought about through bilateral movements in space. Therefore the static balance is switched by dynamic balance through anti-symmetric movements.

Human walking movements along the base line are shown in diagrammatic form in figure 8. Locomotion begins with internal impact (intention) that stimulated the inner potential force to push the leg from the ground. It creates an angular momentum in the (in this case “left”) spatial plane, activates antigravity forces and lifts up local center  $M_1$ .



**Figure 8:** Schematic side view of locomotion of pedal groups  $M_1$  with 2 phases - A and B (motion forward along the base line). C –oscillatory movements during walking (to the right - to the left along the baseline), D - wave movements of the center of mass  $M_1$ .

At the same time, internal impact unlocks the potential force of the opposite leg, in the right spatial plane, to lift it up and swing it forward. This creates an angular momentum plus rotational forces, which in turn are transformed into translational motion of the center  $M_1$ .

Thus the center of local group  $M_1$  is being lifted up and moved forward along x-ct coordinate due to counter lateral rotational movements of both limbs  $m_1$  and  $m_2$  in right and left spatial planes. Then these phases are bilaterally switched in planes and repeated in next phases. Alternating movements are synchronized in time and in spatial counter phases (phase and anti-phase).

The gait phases can be logically named as 1) initial phase “break symmetry to push off the ground” and 2) “move forward”. The initial phase evokes antigravity and then is followed by translational movement forward. Then the next cycle “breaks translational movement to push off the ground” and “move forward” translationally. The kinetic balance is achieved by alternating

counter phases of bipedal propulsion system. Symmetry breaking to initiate walking required at least 2 limbs. Maintaining special kinetic balance during the phase of making a step also needs 2 moving components.

The internal operational space of events is described by a 6 angular coordinates system and the center  $M_1$  is propelled in a four-dimensional frame with coordinates  $x, y, z$  and  $ct$ .

The internal energy of the system is created by periodic collisions, impacts and internal transitions of rotational force to translational, i.e. due to redistribution between internal rotational and translational energy created by the inner structures in the system according to the formula  $E=m(\omega)c^2$ , where  $E$  is energy,  $m$  - mass,  $\omega$  denotes rotation and  $c$  - light velocity[8].

The local management of physical movement is wisely performed by musculoskeletal structures (plasticity, rigidity, etc.), while the informational control is remote and associated with higher hierarchical levels that will be described later.

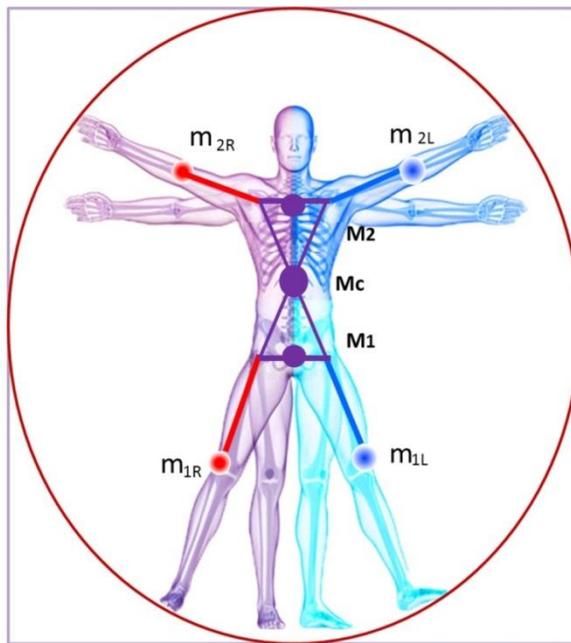
### **Summary:**

- *A human body (vertical stance) at rest is described by a static bilateral symmetry.*
- *A human bipedal propulsion forward is described by:*
  - *breaking a static symmetry and transfer to a dynamic balance of phase and anti-phase transitions,*
  - *motion forward due to internal energy created by instant redistribution of internal forces and impacts.*
  - *motion is described by ten-dimensional coordinate system*

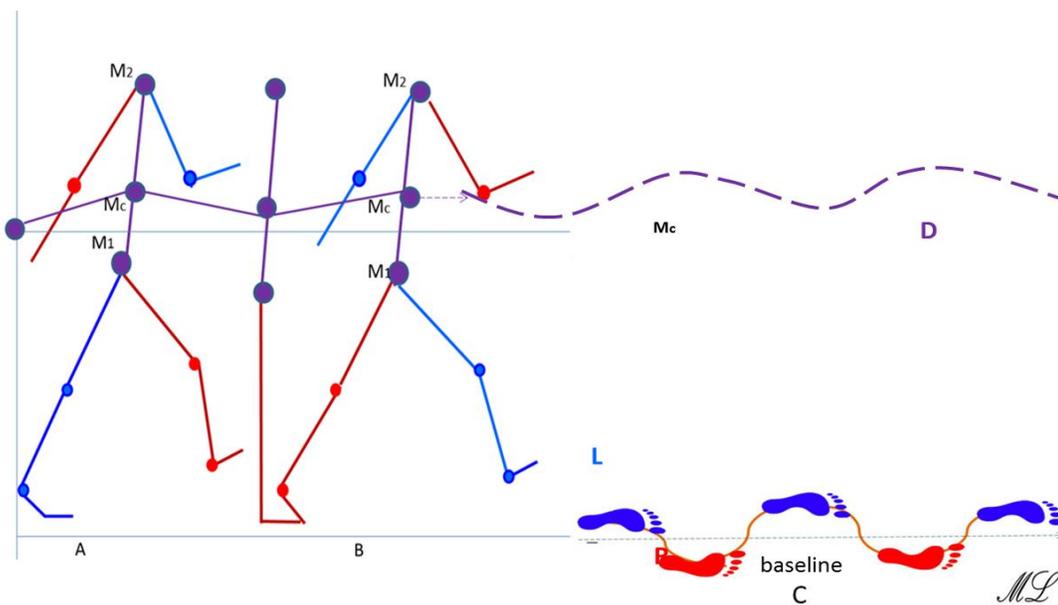
*Descartes Mechanics by G. Shipov contains the proper mathematical apparatus to calculate the physical parameters of motion, its forces, energy, etc. [6]*

### **Level 2: compound system (super-symmetry)**

Let us apply the principles of Descartes Mechanics to a more complex system with two types of symmetric groups  $M_1$  and  $M_2$ ,



**Figure 9:** shows symmetry of a compound system (at rest) with joint center  $M_c$  and two types of symmetric groups  $M_1$  and  $M_2$ ,



**Figure 10:** Schematic side view of a compound motion system during locomotion along the baseline,  $C$  –oscillatory movements during walking (to the right - to the left along the baseline),  $D$  - wave movements of the center of mass  $M_c$ ,  $C$  –oscillatory movements during walking (to the right - to the left along the baseline),  $D$  - wave movements of the center of mass  $M_c$ .

Internal impact stimulated the left leg to push off from the ground. This moment has created angular momentum counteracting the force of gravity and forcing center  $M$  to move upwards.

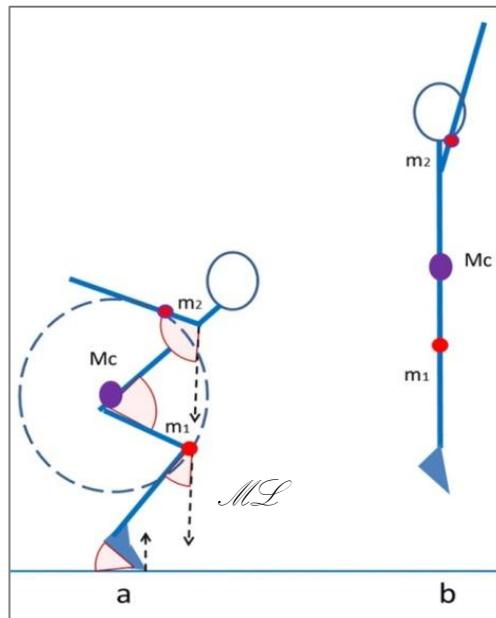
An instantaneous swing of the right arm then creates angular momentum and rotational force to move center  $M_2$  up and slightly forward.

At the same time, the right leg is stimulated to create rotational force to move local center  $M_1$  forward, while the left arm moves backwards slightly in order to create a dynamic balance and also gain the momentum needed to swing the arm forward in a next phase. Then actions are repeated with opposite phases and switched in the planes and repeated.

Therefore the joint center  $M_c$  receives increased levels of energy by both local groups. This powers centers  $M_1$  and  $M_2$  with their smaller components to move in synchronized contralateral movements: phase – anti-phase.

As a result the expanded motion system  $M_c$  functions more efficiently and obtains greater spatial balance and expanded degrees of freedom for its motion.

Another example of a compound system is shown in another type of motion of center  $M_c$ . In this case, two local groups form DM mechanisms with parallel functions when forming force vectors in a squat jump.



**Figure 11:** Caption. A schematic side view of a motion system during a squat jump. The body assumes a spring –like position before the jump. B) Simultaneous counter-directional movements of the local groups  $M_1$  and  $M_2$  push the joint center  $M_c$  up and forward.

In the left part of the diagram (Figure 11.a) , you can see a person preparing to do a squat jump. He is in a position where he is preparing to make a movement. The joint center  $M_c$  is in a

suitable position to make an upward and forward movement such as squat jump. Local group  $M_1$  acts as  $m_1$  and local group  $M_2$  as  $m_2$ .

This is also similar to the DM mechanics shown in Figure 4 and 7.

Both local groups form spring-like mechanisms for making simultaneous counter directional movements to push center  $Mc$  up and forward (b).

The multi spatial effects and impacts of local groups  $M_1$  and  $M_2$  generate energy of center  $Mc$  and increase its efficiency.

The length, height and the groups' styles of jumps are planned according to spatial tasks (height, length). For example, the preparatory phase of a long jump prepares the jumper with stronger collision enabling him to push off more strongly. That stronger push off creates a stronger momentum for the flight phase of the jump. Interchangeable pedal motion can also serve to lengthen the flight and maintain balance.

The joint center  $Mc$  moves forward as a result of instantaneous control of spatial operations of all motion groups. It happens when their components are moving in interchangeable counter-lateral phases (phases and anti-phases) in order to maintain the kinetic balance of the total system while their local centers form a unified center of force.

Internal energy is created within the system by the internal impacts and redistribution of rotational forces created by more groups and components.

The unified center of force is formed around the solar plexus (center of bifurcation of forces around celiac plexus or Plexus coeliacus, also known as the solar plexus). The motion of the system creates and redistributes internal energy. But other factors affect it as well such as: mass, speed, mental or psychological states, e.g. comparing contrast effects of being tired or being inspired, etc.

### **Summary**

*Level 2 demonstrates a complex motion system comprising 2 or more motion groups that are expanding the capacities of the total motion system:*

*Two symmetric groups form dynamic super-symmetry to move forward.*

*The dynamics in super-symmetries is seen as interaction and transitions of asymmetric phases and anti-phases.*

*United groups form new energy centers with a more complex redistribution, more power, more degrees of freedom and more flexibility.*

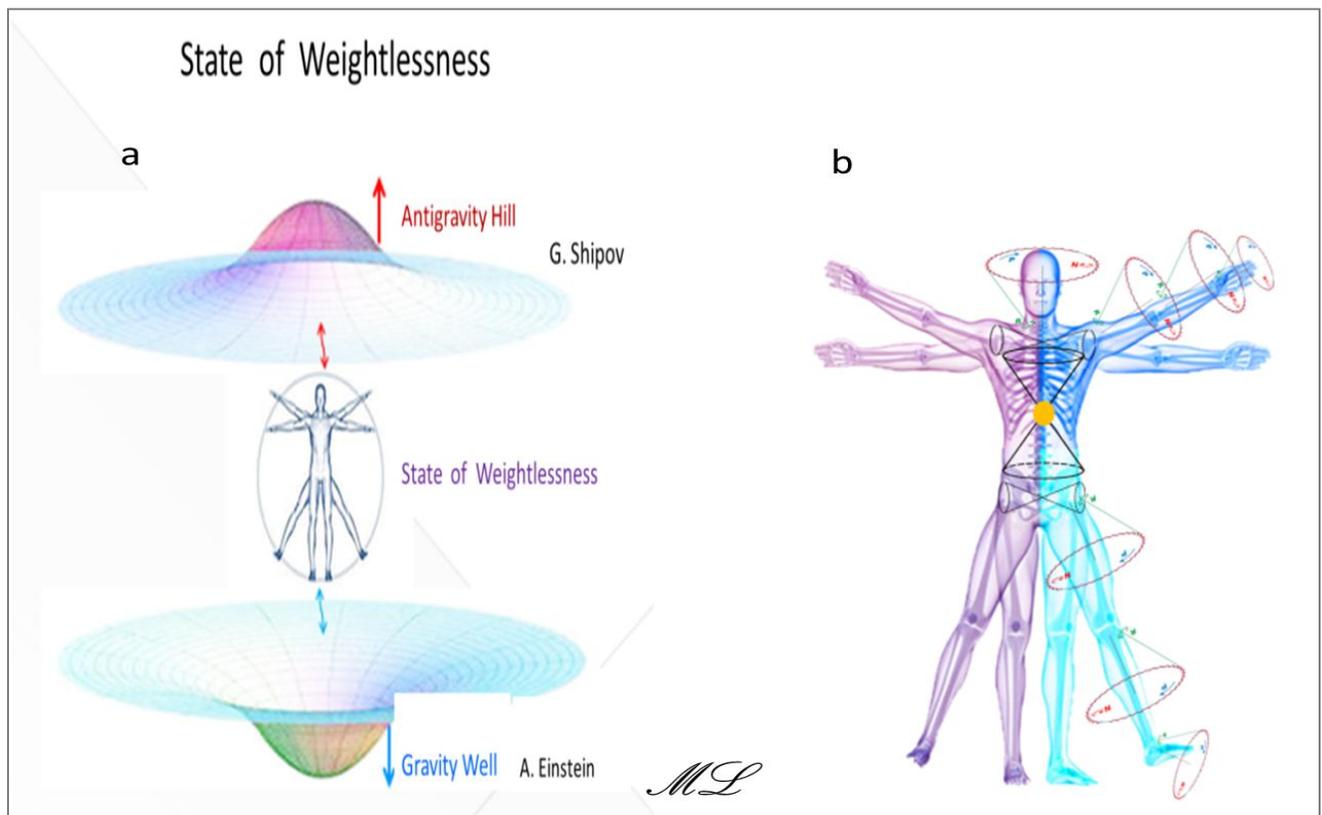
### Level 3: Universal motion system by innate movement reflexes (wave-like movements, precession and nutation). Global movements system.

Precession and nutation, wave-like motion, are natural phenomenon that can be seen everywhere from the celestial mechanics of planetary bodies to the spin mechanics of tiniest components.

They are also characteristics of way humans move. Human motion systems are incorporated into different structures of the human body.

Energy particles in the human body behave like tiny gyroscopes. In the biomechanical systems at immediate locations they are in motion by the vertebra muscular system, whereas their psychomechanical control functions remotely.

If we want to study motion without the impact of gravity forces, we can refer to an example of motion in open space at zero gravity.



**Figure 12:** The state of weightlessness. a) A conceptual view of the state of weightlessness when the forces of gravity and antigravity are compensated at “zero point”. b) A schematic view of the precession of body elements in motion in multiple dimensions.

At zero point gravity, when gravity and antigravity forces are compensated, we observe the phenomenon of weightlessness (figure 12.a). An astronaut moves by operating the spatial rotation of local motion groups and their components. Internal energy is created by internal impacts and redistribution of rotational and translational forces (figure 12.b).

Human motion is characterized by precession and nutation. This applies to macro and micro movements and to both the biological bodies and to the tiniest components of them.

Spatial rotation is associated with instantaneous control over the chrono-biological functions. If we compare the developmental stages of an infant with those of aging subjects, we will observe the retardation of chrono-biological control in aging subjects. Therefore, we may define aging as a loss over spatial control of spin states of micro structures.

The above concepts help us to search for the origins of complicated motion disorders associated with tremors and find the impaired neural pathways or tumors around their energy and informational centers.

Our discussion of 3 levels of biomechanical events and their spatial planes leads us to a next level of discussion about the ways how their control systems are structured.

## **Discussions on Psychomechanics**

Biomechanical movements are operated by higher organizational levels associated with psychomechanics. Psycho-dynamic events can be presented as phase portrait in phase states. Then our levels become comparable to phase planes which form the phase portrait of the phase state of unified psycho-biomechanical system or body-mind system.

We distinguished 5 levels: 4. Executive, 5. Info sensory, 6. Strategic, 7. Subconscious and 8. Real-time. The above numbering was continued.

The levels in vertical hierarchy were structured according to causality principles and ability to maintain its optimum survival.

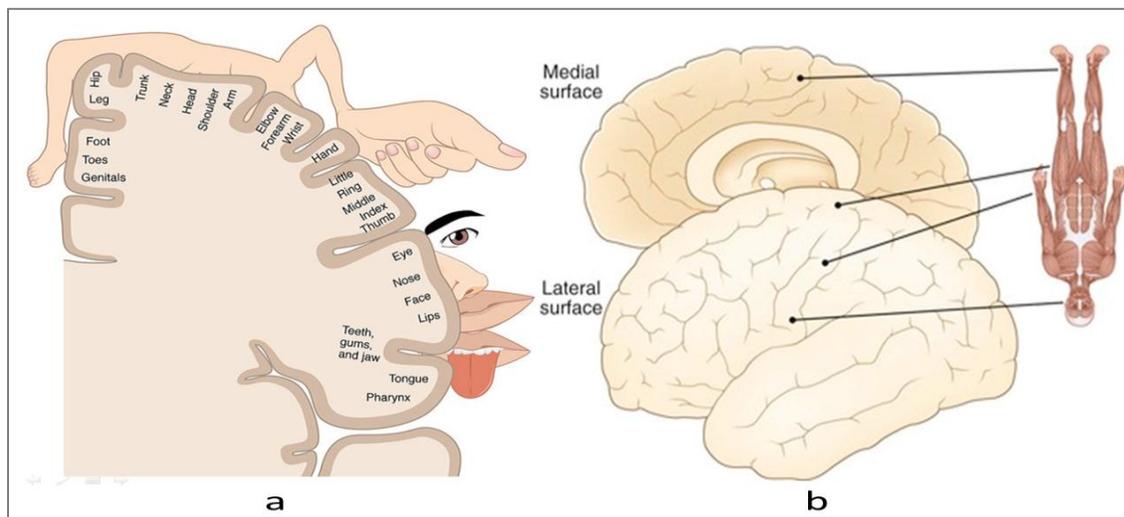
|     | Science           |   | Levels                                | Functions   |
|-----|-------------------|---|---------------------------------------|---|
| II  | Psychomechanics   | 4 | Executive level                       | Control of multiple spatial dimensions by Motor Cortex.   |
|     |                   | 5 | Somatosensory or Info-sensory         | Obtaining multiple sensations at Somatosensory system.  |
|     |                   | 6 | Strategic Mastery of Self (voluntary) | Conditioned by benefits of Self, decision making, choice and will power.<br>Deep listening to self, dynamic will power to develop Self. |
|     |                   | 7 | Subconscious (involuntary)            | Subtle perceptions of life matters, information and energy; intuitive sensing of Universal laws.  |
|     |                   | 8 | Time Reality                          | Living Time Matter  |
| III | Mechanics of Time |   |                                       | Real-Time as resonance of LTM and Time field  |

**Table 2:** Psychomechanics: levels and their functions.

#### Level 4: Executive Level: Motor cortex

The Motor Cortex is the region of the cerebral cortex (of the brain) that is involved in the control and execution of voluntary movements in multiple spatial dimensions.

The motor cortex defined as an area of the frontal lobe, located in the posterior precentral gyros, immediately anterior to the central sulcus. It is referred to the Brodmann Area 4.



**Figure 13:** Caption: (a) Areas of the Motor Cortex drawn like a cross section and compared to areas of a human body. (Wiki image by Henry Vandayke Carter), (b) Another representation of the body on the motor cortex. Face and arms are represented laterally, and legs are represented medially, with cortical representation of the distal legs bordering on the central sulcus.

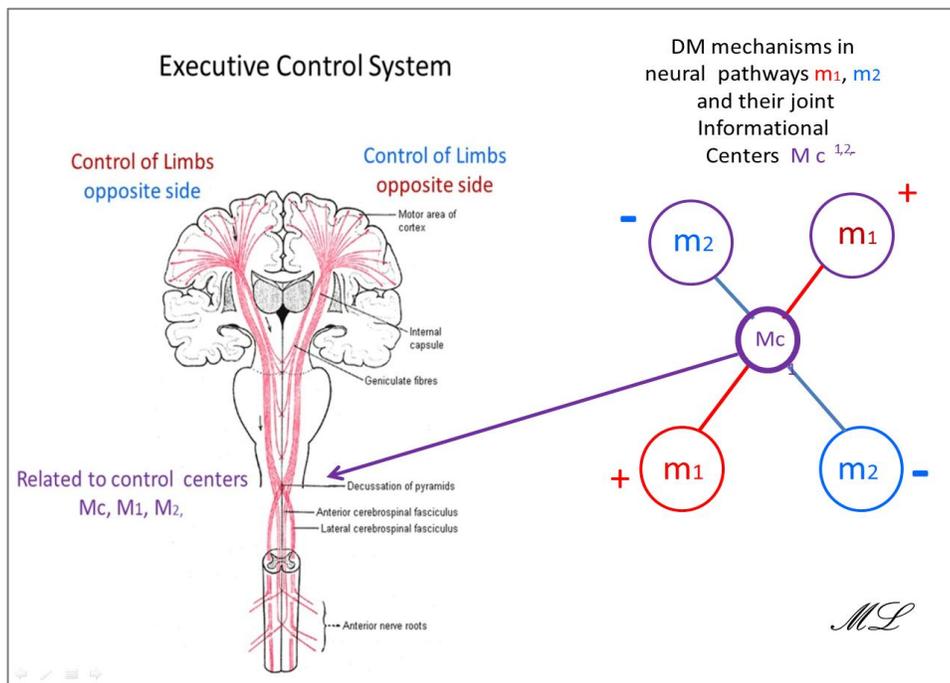
The Motor Cortex,  $M_1$ , is sometimes presented in a way that visually shows its characteristics as similar to a “little man” i.e. a Homunculus. See figure 13.

The bulges in the cortex are lined similarly to the way the areas of the human body relate to each other.

The representation of this area of the Motor Cortex as a homunculus is associated with processing motor and sensory functions for various parts of the body.

Feet are associated with contact with the ground and gravity. The areas related to ‘feet’ are found in the medial areas of Brodmann Area 4. Areas associated with the knees and hips plus spin, precession and wave formations (nutations), are found at the upper edge of the medial and lateral locations.

Areas associated with the arms, hands and fingers are also related to spatial rotational motion and are found in lateral areas. Interactions control occurs via a complex system of pyramidal and other structures that aid in processing and transmitting executive signals.



**Figure 14:** DM principles at the neural structures of Motor Cortex: connections of pyramidal neural structures and their informational centers.

A biomechanical system that functions according to DM principles (figure 12) needs to have a control system with parallels at different levels of subtle processes of neural structures related with perception of reality. It needs to have subtle neural structures (horizontal, vertical, etc.) with variable spin phases and unified informational centers, UIC. Interactive signals from the left and

right spatial planes from biomechanical groups are redistributed to the proper cerebral areas passing through unified informational centers, UIC.

The potential energy impacts come from mental factors, such as plans or ideas to do something, real time challenges caused by performing biomechanical activities, etc. UIC are responsible for redistribution information and energy, for selecting the hierarchic levels such as decision making, intuitive and others. They are arranged in levels and contralateral orders, as it was discussed at primary level 1, combining the activities as at level 2 and adjusting balance (auto-correction) to complex innate functions as in level 3.

Standing, sitting, lying down reveal partial characteristics of body mind system and are related to static states.

The body movements such as walk, jump, rotation (there are 3 principle movements) reveal dynamic states of the system. The disorders of those dynamic states are used for functional diagnostics. An interruption of dynamic functions in Motor Cortex may cause serious health disorders. For example, an interruption of dynamic functions in one hemisphere of the brain (stroke) causes paralysis of the part of the opposite side of the body.

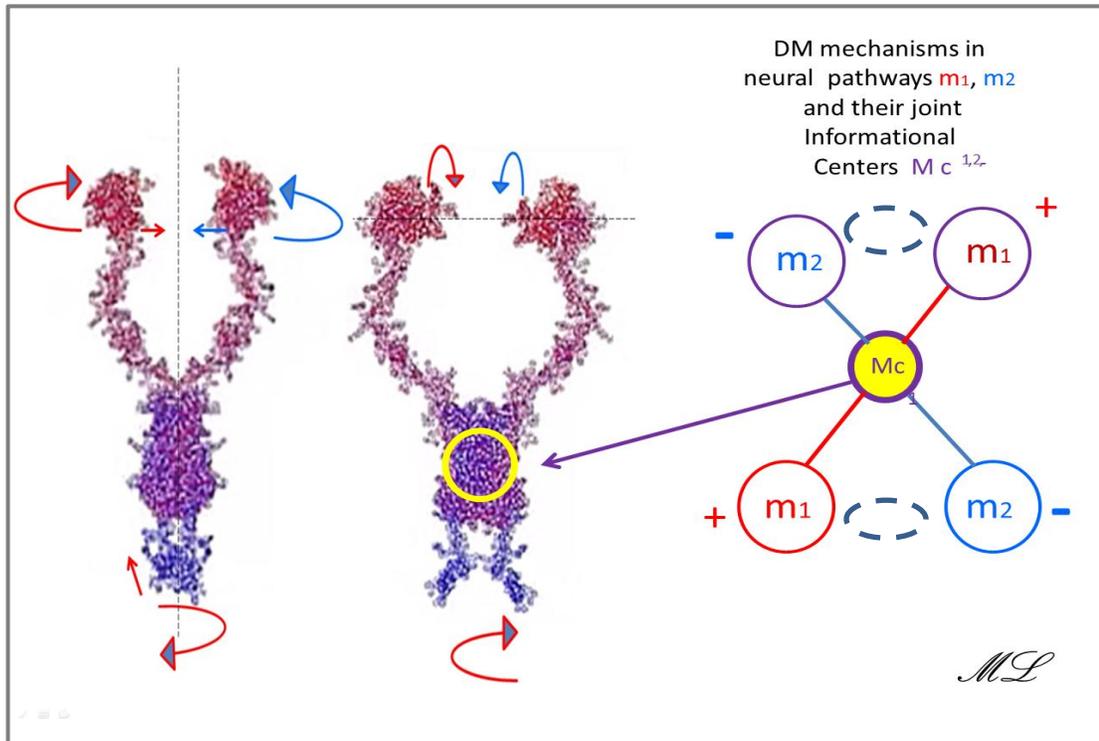
When there is damage in areas of informational and energy exchange (pyramidal decussation) which related to control centers, more serious conditions occur. The case of injury of the fourth cerebral ventricle (important control Center) may be fatal.

Dysfunctions in Motor Cortex affects micro levels such as executive control in molecular dynamics.

Disrupted executive signals in the spatial cerebral areas affect functions of tiny internal structures as well, since their tiny motors and receptors (antennas) receive informational impacts (energy potential) through their unified centers, which are formed by motion of spinning informational particles.

About two thirds of stroke cases are accompanied by changes in the blood sugar levels. If we want to understand this phenomena we have to study the spatial structure of insulin receptors - Interleikin 34 (IL34), that regulate glucose.

A picotechnological model of IL34, created by Yaroslav Kushelev, Russia, represents the structure of an insulin receptor that consists of two mirrored parts comprising two  $\alpha$ -structures and two  $\beta$ -structures arranged in a way that resembles a compound DM mechanism at levels two (compound) and three (precession and nutation). It looks like a pair of forceps that cleaves molecular structures.



**Figure 15:** A picotechnological model of IL34, created by Yaroslav Kushelev, Russia, represents the structure of an insulin receptor that consists of two mirrored parts comprising two  $\alpha$ -structures and two  $\beta$ -structures arranged in a way that resembles a compound DM mechanism at level two. The circles represent electrons. The general shape of the model resembles a pair of forceps. The receptors are involved in catching glucose and regulating it. Interruption of executive level signals inhibits IL34 motion and functions[13].

Figure 15 shows the model where its clusters are rotating according to DM principles. The breaking of neural signals from a higher order of the executive system causes IL-34 a loss of rotational impact and energy potential, therefore, inhibiting its ability to manage glucose molecules. The disruption at Executive level inhibits functions of smaller structures. As a result IL34 functions that manage glucose will be disrupted and blood sugar levels will be temporarily changed. When the proper metabolism is restored the blood sugar levels tend to normalize.

We observe the correlation of executive motor functions with DM principles.

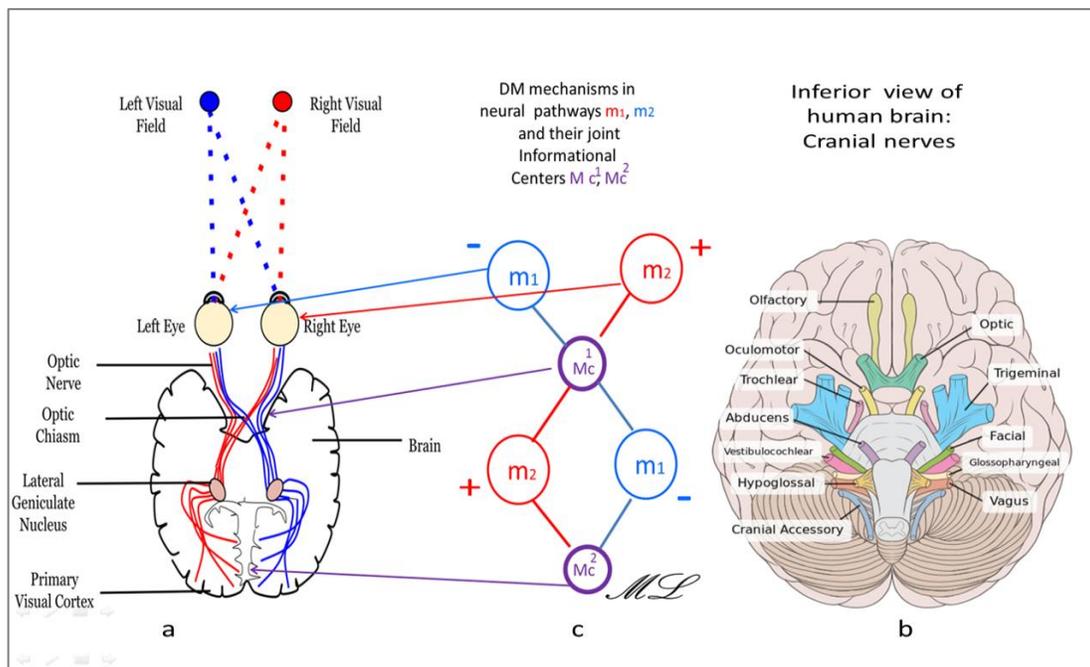
- The unified system works due to the inner energy created by the internal impacts.
- The internal impacts are sent by the higher level signals to the addressee through joint centers, where information is shared, correlated and adjusted.
- We observed the parallel structures and functions in molecular systems (Fig. 15).

The next target is the level that collects and processes the specific sensory information.

## Level 5: Info-sensory (Somatosensory) control

When we need to move a propulsion system to a particular “address” (location), we need to acquire real information about that space, position, surface pressure level, vibration rates, etc., as well as safety (smell, temperature, etc.). Thus the unique propulsion system under discussion has auto control to acquire all the necessary information for its motion.

The organs that acquire information about multiple (anholonomic) spatial structures and their qualities have bilateral symmetries with crossed pathways that form unified centers (Figure 16). These centers manage and redistribute the information and energy: left-right (anti-left – anti-right) and up-down. This information provides sufficient presentation of space and its properties.



**Figure 16:** DM mechanism (c) in: a) Optic nerves pathways; b) Inferior view of the human brain, with the cranial nerves labeled.

## Level 6 Strategic Level: Master of Strategy and Self-control (voluntary activity)

At this level, we address the practical ability to plan individual activities, motivate ourselves or others, evaluate situations and make decisions about implementing them ourselves. These are abilities that are important in sport and other skilled activities involving skilled movements.

Strategic level 6 is dominant at the level of conscious activities and has an impact on other levels 1-5. Complete involvement in the activity requires directing and focusing of all levels and structures towards success for the planned program. In sport, for example, the new program of

action needs to be considered in mind, then performed in mind, step by step by visualized motions until it seems smooth and efficient. Only then, will it be accomplished smoothly physically. It is important to remove all mental blocks (at the info center) which could obstruct the successful physical completion of task.

As an example of functional activities at level 6 we can make a reference to unique skills or abilities of people, who have been trained to move or lift extremely heavy weights. They have been trained with the technique to remove mental blocks (lack of confidence, doubts, etc.) in order to acquire mental freedom. It is used for other unique (and seemingly miraculous) tasks and performances as well.

Limiting mental blocks are closely associated with self-image or self-perception in Real Time (to be discussed later). An inflated perception of Self/Ego results in confused states. Inflated self-esteem makes people suffer unduly from insignificant “threats” to their impaired perception of their inflated self. They can be upset about unimportant issues such as the color of the shirt or a casual comment, etc.

In case of retardation of perception of Self (Ego) can contribute to other type of negative situations. A person with that type of self-esteem may not value himself. As a result, he may develop a desire to found out what other people feel or how they might suffer. An absence of morality can make him lack in empathy and behave in a cruel manner.

The voluntary decisions can be verified by personal knowledge, experience as well as by intuition or at subconscious level.

Therefore our discussion leads us to a next level 7.

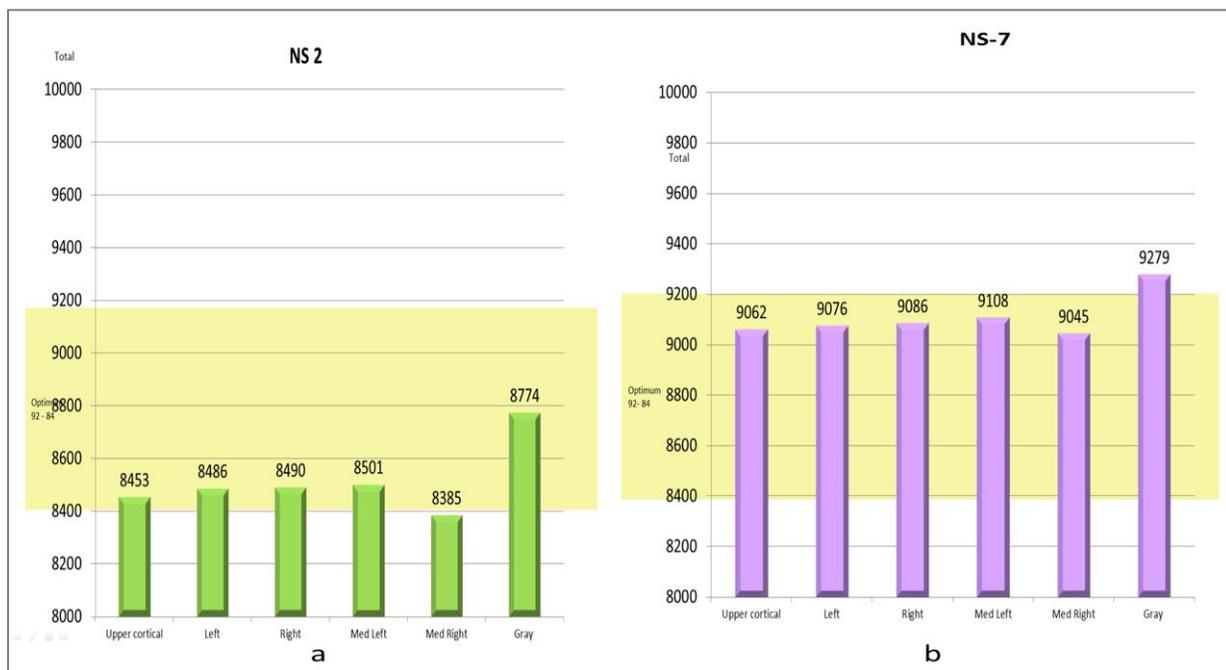
### **Level 7: Subconscious (involuntary activity)**

Psychological states at level 7 are associated with intuitive perception, living awareness, instinctive adaptation, intuitive reactions and innate power of immunity and instinctive reactions.

According to Rene Descartes, these qualities belong to sublime perception that is hidden from ordinary levels of perception and is not subject to changes and constitute “the treasure of human mind”.

In the case that regulation at this level is impaired, the hidden states tend to produce counter impacts upon on each other. Sometimes that can be sensed as internal protest (the awakening of an internal Judge), depression or even suicidal thoughts. The negative impacts can be produced by internal or external conditions.

Our method and equipment allowed us to capture a psychological portrait of a female subject, aged 23, who suffered from depression and had made 3 suicidal attempts (figure 17). The yellow range at the background indicates what the optimum (healthy) level would be. The green graphs demonstrates the level of depression (17.a retardation of life awareness) and the lilac graphs (17.b) show the alarmingly high levels of anxiety and convulsive impacts (awakening of the Internal Judge), especially at molecular level where molecules function like tiny antennas. Neural signal 7 (17.b, NS-7, lilac color) is associated with subconscious and is essential for auto-control system and could be named an “Internal Observer”. The alarmingly high level of NS-7 is comparable with awakening of an “Internal Judge”. The state of the awakening of the “Internal Judge” indicates a significant increase of personal sufferings that could continue for the rest of the life.



**Figure 17:** Psycho states in a case of a 23 years subject after 3 attempts to end her life path: (a) green graph – level of retardation of awareness and associated with depressive states, (b) lilac – acceleration of neural signaling related to level 7, associated with awakening of “Internal Judge”. The yellow range at the background in (a) and (b) indicates what the optimum (healthy) level of regulation would be.

All the obtained results were discussed with each subject and compared with his/her self-perception. In each case, the patient confirmed that his subtle sensations coincided with our data.

The neural signal NS-7 associated with the subconscious is important for the auto (non-voluntary) control system of a living system and can be described as an “Internal Observer”. The alarmingly high level of NS-7 signals is related with the awakening of the “Inner Judge,” a state

that is associated with an increase of personal suffering that can last for the rest of the personal life. Therefore this suffering may lead to thoughts of ending the life by suicide.

Hyper excited levels of neural signals NS-7 are frequently associated with the abuse of alcohol, certain chemical substances, etc. Hyper levels of NS-7 levels can serve as an indicator for diagnosing susceptibility to seizures, epilepsy, stroke, and other diseases.

Depressive states are complex, as we could see above, and need additional research. Hundreds of millions of people suffer from depression. By 2030, according to forecasts, depression can become one of the main causes of disability.

The neural signals of NS-6, NS-7 are of great interest both for scientists, doctors, and for individual self-study.

A unique feature of these signals is the fact that they are associated with the perception of Real-Time events by the Psy system of “I”. Therefore, their mechanics need to be analyzed together with the information that we provide in the next section - on level 8.

## **Level 8 – Time & Real-Time**

The flow of Time is perceived by human consciousness as “always now” (always being now). It is related to the reality both inside the biological system and outside of this system.

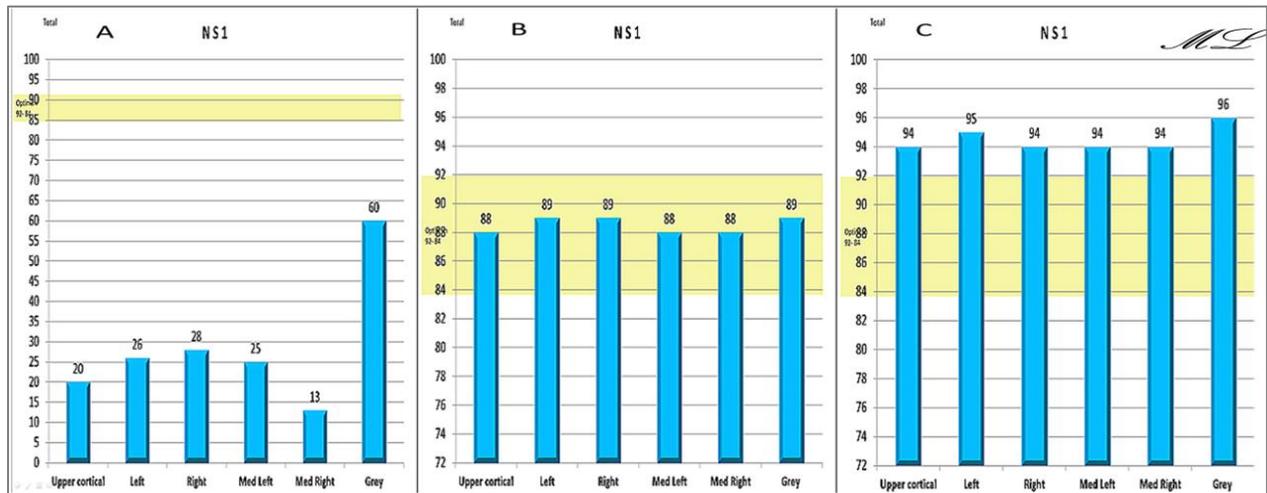
The “Living Time” begins its psycho physical cycle to form human system, when the fetus is conceived (or, perhaps, when parents starts to dream about child) and it continues until the phase, when the physical body stops (or changes) its functions. With the age the Living Time functions in a biological system slow down as in heart beats, cycles of the cellular respiration, regeneration, etc.

Time acts as a “Living Time Matter”, LTM, inside the biological system. It acts as a field outside that system. *(Note that “Clock” is a technical term to denote measure of Time process. The most precise clocks have been considered atomic clocks. Their precision have been based on the hyperfine transitions in hydrogen-1, caesium-133, and rubidium-87, etc.)*

Time has rotational nature as it is seen in figure 4 (page 7). As an informational matter with a spin, LTM participates in composition or decay of every tiny particle in living system and impacts their biological structures: density, formation of functional groups, their static and dynamic properties.

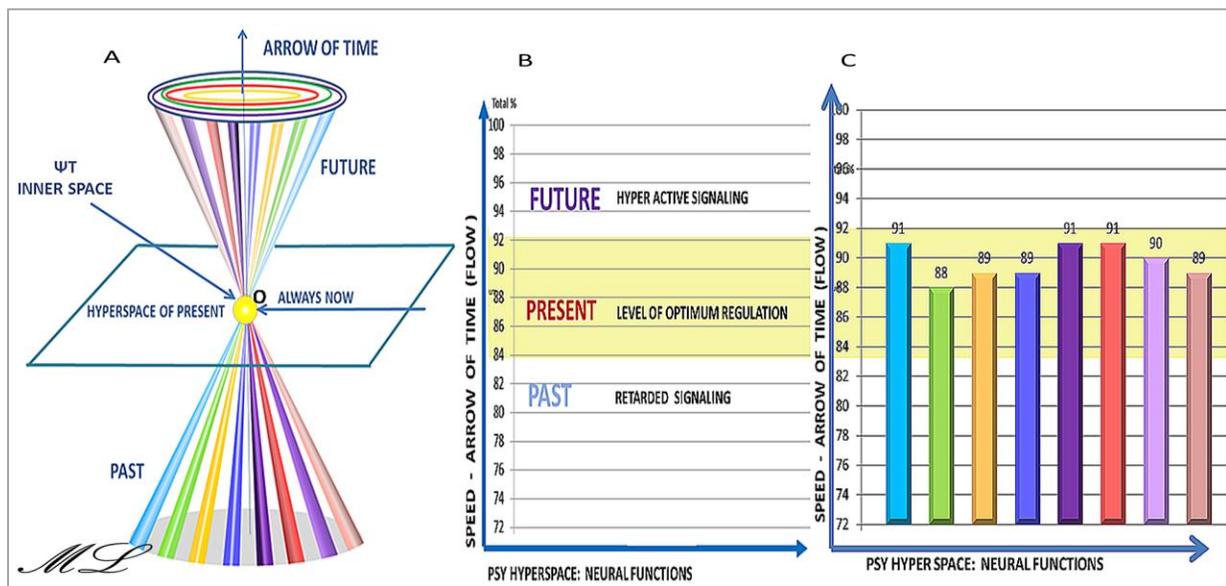
The acceleration or retardation of LTM cycles impact physical cycle to form human system. For example, our earlier study revealed that the Preterm Cesarean Section, PCS, affects neural

signaling in children born by PCS. We observed the long-term retardation of their immune and adaptive neural signaling.



**Figure 18:** Neural signal NS-1retated in innate immune system: A. Retarded level of in PCS children; B. Optimum level; C. Accelerated level of NS1 in cancer cases. The yellow range at the background in indicates what the optimum (healthy) level of regulation would be.

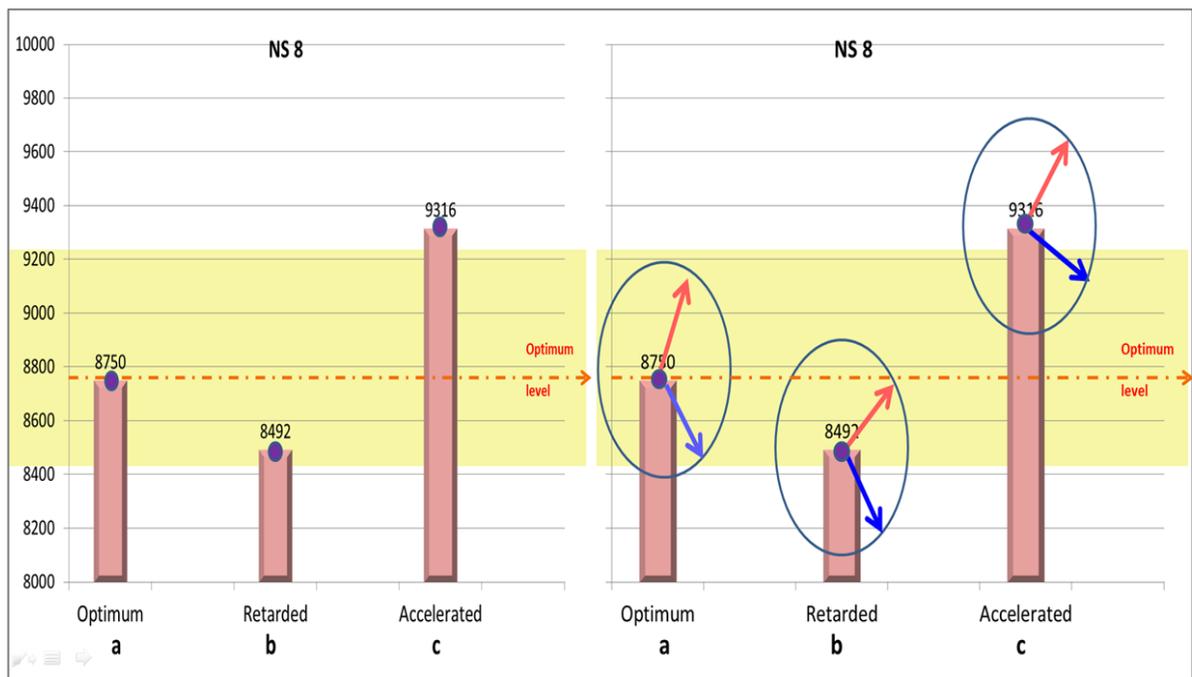
We had been able to detect and study 8 types of Neural Signaling pathways formed by LTM, presenting different Psy phases. They create an individual Psychological Phase Portrait (Psy ID).



**Figure 19:** (A) PSY-cone, point of origin O presents a real time capture of neural events of inner system (individual perception, state of consciousness). Arrow of Time is associated with perception of reality and aims from Past to Future. Hyperspace topologically contains information of real time (Present). (B) PSY-cone unfolds its plane into our working space - PSY inner space, where we can analyze neural pathways. (C) Color bundles are related with the types of neural signals presenting the plurality of mental states. The range colored as yellow at (B) and (C) shows the Psy states at optimum regulation or healthy states. [15]

It is easier to visualize if we use a concept of Psy-Cone for Time-entangled neural events and mental states [15]. The center O, point of origin, presents a Real Time plane of neural events. An Arrow of Time is associated with perception of Real Time and aims from Past to Future. Color bundles are related to the types of neural signals presenting plurality of mental states.

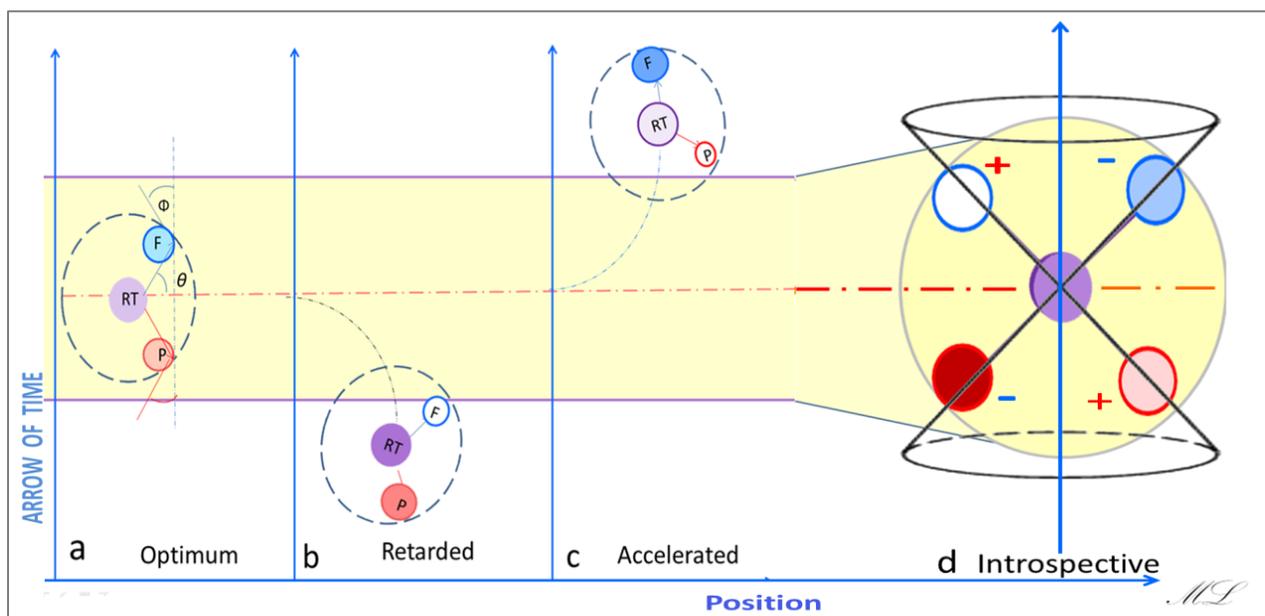
We will apply the DM principles. Let us take the graphs that registered the Neural Signal-8 (colored as light pink), related to perception of Time, NS-8, for 3 types of identities: a) Optimum, b) Retarded, c) Accelerated (confused).



**Figure 20:** Neural Signals NS-8 for 3 types of identities: a) Optimum, b) Retarded, c) Accelerated (confused). A purple dot marks an Info center. Vectors show differences between the Optimum and deficient states.

We will mark each digital expression as its informational center (purple dot) and use vectors to show the differences between the Optimum and deficient states (figure 20).

Now we will generalize the Mechanics of Time as follows:



**Figure 21:** Informational device: perception of Real-Time and regulation of living processes – a) Optimum; b) Retarded; c) Accelerated. RT stands for Real Time, P – for Past, F- for Future, Orange dotted line marks optimum (balanced) level; d) Cross section – Introspective view of a resonance mechanism: Real Time (purple) & different types of imaginary events.

**The resonance momentum of LTM with the external Time Field occurs at the optimum phase, providing information interactions and stability of living systems.** It defines Present Reality or Real-Time and is perceived by human consciousness as **Being Now**.

The retardation of perception of Real Time refers to “staying in the past” (vector to the **Past**). Retardation is associated with a slow response in most types of physical and mental activities. This includes a sense of fear of the reality taking place, a desire to go back in time that leads to the stressful states as a result.

The tendency to avoid the **Present** and advance to the **Future** (“leap into the future”) is associated with agitated and confused mental states (vector to the future) and affects physical health and well-being. It usually relates to anxiety, tendency to epilepsy, seizures, could be induced by intake of chemicals, alcohol, other habits, etc.

Each neural phase works according to the same principles: functions at optimum level or retards or accelerates. Thus their phases compose an individual Psychological phase portrait.

The internal living structures are resonating with the external Time fields of the larger systems through their Psy systems and receptors according to the DM principles as shown in Figures 20 and 21.

The Time continuum of a larger system acts as a field for its sub systems, where their time events occur.

The Time continuum is described as the Past, Present and Future.

**The Present time is defined as an ever continuous momentum when the internal living-time matter of a biological system resonates and tunes with the external Time-field through a complex Psy-system.**

**The Past** time relates by humans to their memories about former events, experience, etc. The Future is perceived as forecast of potential events that may occur or may not.

The multiple tiniest structures form their own subsystems or the ‘parallel worlds’ following both the internal mechanisms and the rules of their larger Universe.

A change of the external environment and Time fields impact Living Time Matter and the formation of different molecular structures as we could learn from NASA TWIN study.



**Figure 22:** Identical twin astronauts, Scott and Mark Kelly, are subjects of NASA’s Twins Study: about 7% of Scott Kelly’s genes may have permanently changed their expression in space.

Identical twin astronauts, Scott and Mark Kelly, are subjects of NASA’s Twins Study. Scott (right) spent a year in space while Mark (left) stayed on Earth as a control subject, giving NASA a unique opportunity to see how space flight changes the human body and brain.

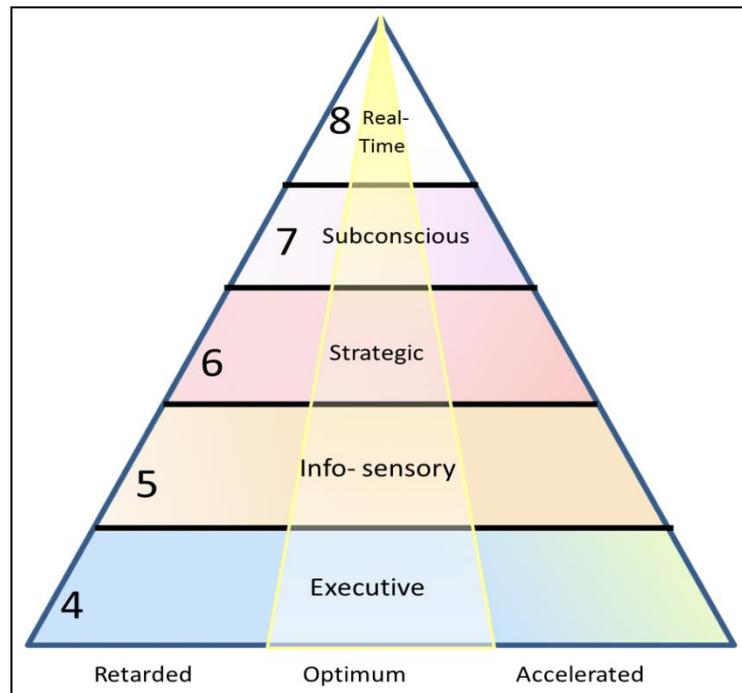
The fascinating results has been uncovered: about 7% of Scott Kelly’s genes may have permanently changed their expression in space. Scott’s telomeres (endcaps of chromosomes that shorten as one ages) actually became significantly longer in space. Additionally, a new finding is that the majority of those telomeres shortened within two days of Scott’s return to Earth. Another interesting finding concerned what some call the “space gene”, which was alluded to in 2017.

Researchers now know that 93% of Scott’s genes returned to normal after landing. However, the remaining 7% point to possible longer term changes in genes related to his immune system, DNA repair, bone formation networks, hypoxia, and hypercapnia. This change of gene expression contributed to the understanding of how spaceflight affects the molecular level of the human body.

NASA’s Human study project “TWIN” revealed unique data how external environment affected the living systems - retarding rotation and folding of proteins, genes, molecules, influencing the interaction of internal forces, etc. The research results had also shown that the healthy living systems living systems have an enormous ability to tune to home environment and restore the stability of their internal system.

### Summary

We have presented a new concept to study the living systems applying DM principles to Psychomechanics.



**Figure 23:** System of Psychological states according to the principle of causality.

The discussed system and method allow to analyze the interaction of psychological states, using the concept of Real Time as a key value resonating with Psy states (‘I’). The analytical

model starts at Real Time (level 8) when we plan a strategy (level 6 - Strategic Mastery of Self) controlled by intuition (level 7- subconscious, “Internal Observer”), verified by a necessary data at the level NS 5 (Info sensory). Then the planned task should be executed by level 4 (Executive) and implemented by biomechanical levels 1-3.

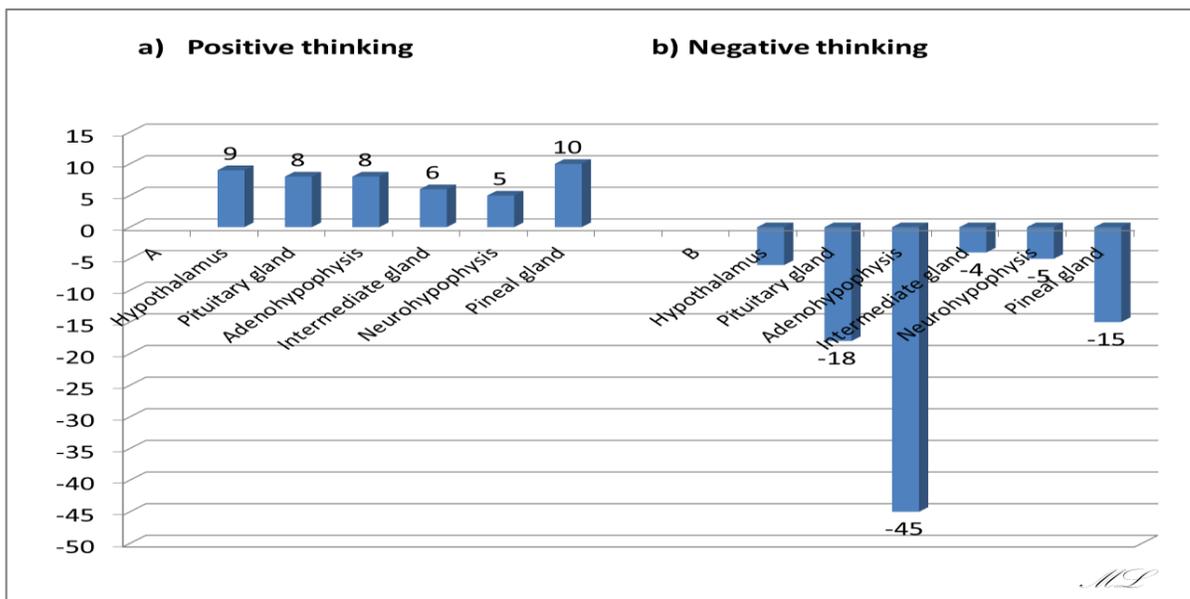
The above systematic approach for analyzing different psychological and physiological conditions and their interactions can be used for clinical cases, R&D in different spheres of human life activities as well as for self- improvement.

## Discussions on case studies

We will discuss several cases on interactions between psychological and physiological states including the tiniest structures that follow the discussed principles.

### I. “Hate and Happy” case study of power of thought impacts on physiological states.

We carried out a simple experiment on what is happening, when people concentrate on positive or negative events. The healthy subjects had been asked to remember the most happy and the most hateful events in their life. According to protocol they were scanned for brain waves data before the experiment and after having thought for one minute about the most happy event in their life. The similar protocol was done before and after one minute of thinking about the most hateful event in their life. The results were revealed as follows:



**Figure 24:** a) One minute of positive thinking about the most happy event activates the endocrine system about 5-10%; b) One minute of negative thinking about the most hated event suppresses endocrine system down to 45%.

Our experiment on power of thought revealed that each minute of positive thinking activated hormone system - Hypothalamus, Pituitary gland, Pineal gland (Figure 24.a) about 5 to 10 percent.

Each minute of negative thinking dramatically retarded hormone system functions (Figure 24.b) down to 45 percent. The difference was impressive.

Every minute of positive thinking activates LTM and enhances life processes. Only one minute of negative thinking dramatically retards LTM acting as anti-LTM or anti-life matter.

It uncovers the secret why happy people recover faster. People with a negative way of thinking destroy the stability of their psychological and physiological system and not only, as we will see from the following study.

**II. A case study on negative thinking performed by others:** Psy phases impact both on physiological states and on the psychological environment of other people. The negative thinking disrupts both human internal system and impacts the external psychological environment.

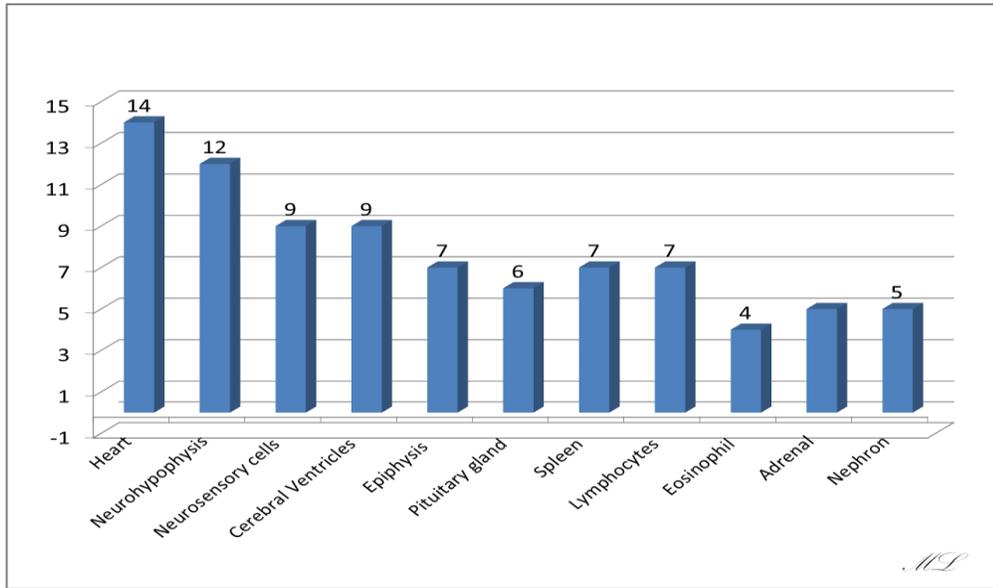
Housman, Michael and Minor, Dylan from Harvard Business School researched a phenomena of ‘Toxic people’ and described it as “toxic” behavior, viewing “toxic function” of both the person and situation. “Toxic” people induce others to be toxic [16]. This state is not curable – concluded the researchers.

Subjects with negative thinking unconsciously destroy the stability of their living systems, and also affect the stability of other living systems and their environment.

This study serves as an example of resonance phenomena between living systems and field formations in the world around them, as shown in Figure 21.

**III. The study of impacts of 30 minutes of chanting in a Thai temple on physiological states.**

The case study on the 30 minutes of chanting session revealed the positive energy influx and activation of the Heart area (+14%), followed closely by Neurohypophysis (12%) responsible for neural uplifting effects with further positive influences on the white blood cells functions, immune and hormone systems.



**Figure 25:** The results after 30 minute of a chanting session.

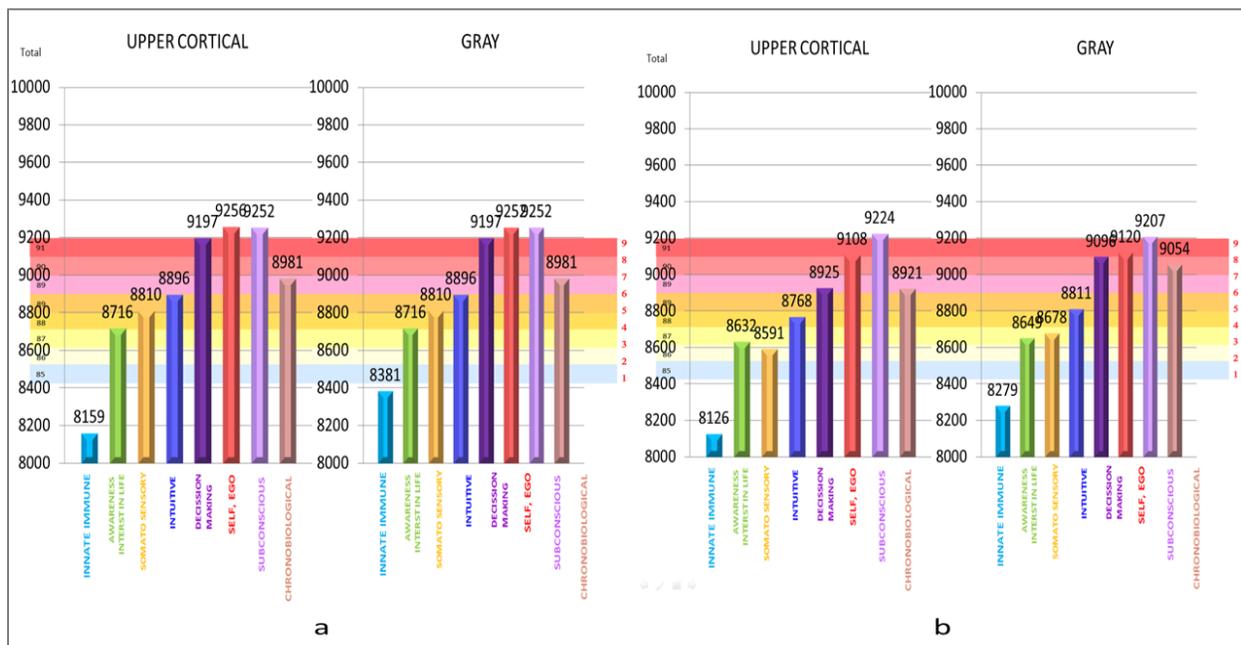
In case if we associate human organs with Chakras, we may describe that the chanting produced strongest effects on Heart Chakra followed by activation of “Third eye” (Neurohypophysis) with positive impacts on Body and Mind.



**Figure 26:** The impact of chanting session compared to energy centers “Chakras.”

#### IV. A case study of impacts of physical activities on psychological states.

We have selected the jumping activities as a sample of the effects of Gravity forces on Psy states. The brain scan has been performed before and after one minute of jumping high by a professional ballet dancer.



**Figure 27:** Psychological effects before (a) and after (b) one minute of jumps.

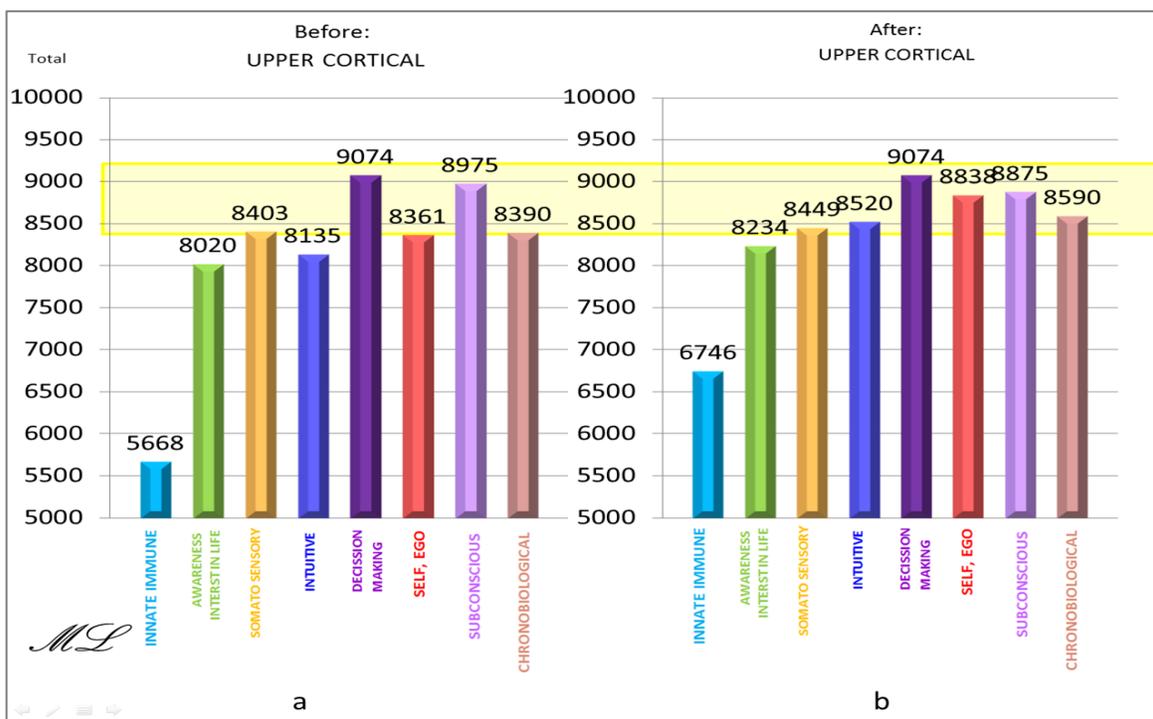
After jumping for one minute, the subject felt more balanced compared to the initial state of nervous system fatigue (NS-1) and hyper excitation (NS-6,7) before jumping. Physical activity led to relaxing effects in the brain cortical area (Upper cortical area): NS-5 neural channel (dark purple color) - which is responsible for choice and making decisions, NS-6 neural channel (red color) - associated with the feeling of “I”, self-perception. The hyper level of the NS-7 signal associated with the stress conditions at hidden levels of the subconscious has slightly decreased.

A cluster of hyper signals NS-5, NS-6 and NS-7 could lead to nervous breakdowns. Physical activity helps to relax and balance psychological stress.

## V. Case study on psychophysical impacts of healing methods.

Thai Traditional massage, TTM, is universally accepted for its healing effects. Thai Traditional massage which is known for its special balancing techniques: combination of static and rhythmic pressure along designated lines "Sen" and stretching the entire body. TTM special techniques help both to relax and to activate biomechanical and psychomechanical channels in a human system.

We decided to investigate TTM impacts on psychological system. We have selected a healthy subject, aged 36, who was feeling tired and stressed. After two hours of TTM the brain scan revealed the following impacts:



**Figure 28:** Psychological effects (a) before and (b) after therapy session with Thai Traditional massage

The graphs show a considerable increase in activities of immune innate and adaptive signaling (NS-1-light blue and NS-2- green); subtle well-being (NS-4 navy blue); the subject was seen enjoying an increase in the self-perception (NS-6 – red); activation of Real-Time life processes (NS-8 light pink); an enhancement of somatosensory perception (NS-3 yellow color). While NS-7 (lilac) became slightly relaxed towards a more balanced state. The level related to voluntary indexes (decision making, choice, etc.) were not changed (NS-5 purple color).

The above results show that the regular use of TTM considerably enhances immune system (innate and adaptive) and subtle sensations, improves Self –perception, reduce anxiety states and convulsive reactions.

## Summary

The expression that our dreams create our reality looks more enlightening after the above discussions. It leads to an understanding of the mechanism how we can create our own well-being: positive thinking creates positive Real Time. Understanding how the resonance of LTM and Time fields works, helps us learn more about such subtle phenomena as positive or negative energy and information, psychophysics of well-being and staying at optimum balance and health, which means staying Young for longer periods in active way.

Biological system can stay healthy and remain younger when all the proper levels are allied to dynamics of health and well-being. Living system designs its own Reality to stay at optimum state and learn how to overcome the obstacles towards that Dream.

The discussions will be continued.

## **Conclusion**

Hundred percent of World scientists recognize the Grand Challenge in science as Physics of Life [17]. The progress in the study of living systems will not be made without a thorough understanding of the underpinning physical mechanisms. And the mechanics of living systems is the key but the least understood due to its complexity.

In our paper we tried to answer the main questions about biomechanics, psychomechanics and mechanics of Time in living systems.

Applying the fundamental principles of Cartesian mechanics to living systems, we studied the multidimensional levels of spatial structures that form motion systems, from simple to most complex, their forces, energy redistribution and interactions.

Applying the results of over 20 years of bio-medical research in psychomechanics and neurology we have analyzed vertical levels of Psy-control in living systems according to the principle of causality, energy and informational transitions comparable to DM principles.

The mechanics of Real-Time was researched along with resonance mechanisms, interactions and phase transitions in living systems as well as their interactions with external environment providing the stability of living systems. It is shedding more light also on the aging mechanisms and helping to answer important questions of staying young for the longer times.

Real-time mechanics allows you to take a different look at the super-causality principle of life processes and the period of time allowed for living systems. The ability to use this knowledge is one of the main characteristics of "free will". There are many important issues to study, because if the Universe gives rise to living matter and fields of Time, then the Universe is alive.

The discussions were supported with the description of practical research results and case studies.

## **Conflict-of-Interest Statement**

The above work is an original and independent research and has no conflict of interest of any kind.

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