

The Technology of Yoga - An Imperative Scientific Implementation to Harmonize the Diversity of Human Society: A Review

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KEYWORDS Yoga. Human Mind. Mental Vibrations. *Praana*. Vortex Points. Guru

ABSTRACT Yoga is one amongst the six basic philosophical systems of India. It is defined as “the restraint of mental modifications”. It is a practical science based on the laws of *Samkhya* Philosophy that govern the evolution of the universe, can be extended for the evolution of an individual; thus the individual is a microcosm of the macrocosm. Yoga is above caste, creed, and religion; a positive system for the unification of the humanity. In yogic technique the breathing system is brought under control which ultimately keeps the mind under control, makes it free from unwanted vibrations either being induced internally or influenced externally. This finally leads the mind to vacuous (thoughtless) condition and checks the mental pollution or thought pollution that works in obscurity, negatively throughout the human environment. Yoga enables to overcome the effects of *Gunas*, which are the root of all changes, the foundation of reality, the essence of everything and responsible for the diversity and nature; thus causes the harmonization of the human society. Every Yogi works as a broadcasting centre of calmness and serenity, that influences, the whole human diversity in positive track.

INTRODUCTION

The six *Darsans* constitute the basic philosophical system of India, founded by different sages. They are *Nyaaya* (system of logic for acquiring right knowledge - founded by Goutama); *Vaisesika* (study of the characteristics that distinguish a particular thing from all other things - by Kanaada); *Samkhya* (study of the principles of cosmic evolution by rational analysis - by Kapila); Yoga (ways and means by which the individual can know the reality by direct experience - by Patanjali); *Mimaamsaa* (correct interpretation of Vedic ritual and texts - by Jaimini) and *Vedaanta* (inquiry into the nature of the ultimate principle (*Brahman*) - by Badaraayana). These six *Darsans* are in no way contradictory or antagonistic to one another, for they all lead to the same practical end, that is knowledge of the absolute and liberation of the soul. All the *Darsans* agree that, knowledge is the path to freedom and that Yoga is the method to attain final liberation (Bernard 1989).

Yoga is defined as “the restraint of mental modifications”. *Samkhya Darsana* is the philosophical basis of Yoga, while the later being very practical. The laws of *Samkhya*, that govern the evolution of the universe, can be extended for the evolution of an individual; thus the individual is a microcosm of the macrocosm. Yoga has

eight limbs, viz. *Yama* (moral restraint), *Niyama* (self culture), *Aasana* (posture), *Praanaayama* (breath control), *Pratyahaara* (control of senses), *Dhaaranaa* (concentration), *Dhyaana* (meditation) and *Samaadhi* (super consciousness state).

These eight limbs can be further elaborated as follows:

Yama (Five sections): *Ahimsaa* (Non-killing); *Satya* (Truthfulness); *Asteya* (Non-stealing); *Brahmacharya* (Continence); *Aparigraha* (Nonreceiving).

Niyama (Five sections): *Soucha* (Internal and external purification); *Santosh* (Contentment); *Tapa* (Mortification); *Swaadhdhaaya* (Study); *Isswara Pranidhaana* (Worship of God).

Aasana: Posture of sitting which should be firm and pleasant.

Praanaayama: Controlling the motion of the exhalation and the inhalation.

Pratyahaara: The drawing in of the organs by giving up their own objects and taking the form of the mind-stuff, as it were.

Dhaaranaa: Holding the mind on to some particular object / concept.

Dhyaana: An unbroken flow of knowledge in that object (referred above).

Samaadhi: Giving up of all forms (that is external part is given up in meditation), reflects

only the meaning (unexpressed in any form) A self realisation condition. The super concentrated state of *Dhyaana*

The above eight sections *in toto* are known as '*Raajayoga*', which has a greater purpose for self-realisation through conquering of the internal nature. By the practice of the different parts of yoga, the impurities of mind are being destroyed; knowledge becomes effulgent up for discrimination. Moreover, out of the above eight limbs, one has to practise the former four and the latter four are the results of some one's efforts (Padhy 2006, 2011).

In the last century, there have been efforts to understand the physiology of meditation. Clinical examination of subjects under meditation records the following physiological changes in their body such as: reduction in oxygen consumption, carbon dioxide elimination and the rate and volume of respiration; slight increase in the acidity of the arterial blood; a marked decrease in the blood lactate level; a slowing of the heart-beat; a considerable increase in skin resistance and an electroencephalogram pattern of intensification of slow *alpha*-waves with occasional *theta*-wave activity (Wallace and Banson 1973). These findings of the modern science on yoga is meagre compared to the vastness of the system.

OBSERVATIONS AND DISCUSSION

Human Mind: A Unit of Cosmic Ecology

According to *Samkhya* philosophy two ultimate realities of the universe that is *Purusha* (Spirit) and *Prakruti* (Matter), serve as the source out of which all things have evolved. The *Purusha* is the soul of the universe, the animating principle and subjective aspect of nature, eternal, indestructible, all pervasive, the ultimate principle of intelligence, who guides and directs the cosmic evolution. *Prakruti* is the original cosmic substance, the primal nature out of which all things have come and into which all things will finally return. The *Purusha* is neither produced (self-existent) nor produces, while *Prakruti* is also not produced but produces. They exist as logical principles of the universe, as something cannot be created out of nothing.

Prakruti is enriched with three essential constituents called *Gunas* (Quality). Such as *Sattva*, *Raajas* and *Taamas*. Before creation the three

Gunas were in homeostatic balance. More details about *Gunas* are presented later. For some unknown reason (may be wish of God ?) there was disturbance in the balance of the *Gunas*, they started interacting on each other and variation in their combination and composition is responsible for manifestation, diversity and led to evolution. In the beginning Six universal principles (*Tattvas*) evolved such as:

- 1) *Mahattattva* (Cosmic intelligence - the capacity to expand, reveal and assertion to fulfil the ultimate destiny of nature - the undifferentiated energy takes a definite direction).
- 2) *Ahamkaara* (the individuating principle - state of self-consciousness, self-identification - a necessary condition before the onset of any action).
- 3) *Maanas* (principle of cognition - I am this: the individuating principle realises its existence - cosmic mind).
- 4) *Indriyas* (power of perception (1) Abstract knowing organs: *Jnanendriyas* - to hear, to feel, to see, to taste, to smell and (2) Abstract working organs: *Karmaendriyas* - to express, to procreate, to excrete, to grasp, to move).
- 5) *Tanmaatras* (The Sense Powers - subtle elements: sound, touch, form, flavour and odour - makes the *Indriyas* functional).
- 6) *Mahaabhootas* (Sense particulars - the ecological factors: ether, air, fire, water and earth).

Out of the above six, the earlier five are metaphysical in nature and the latest one is physical. Among the metaphysical factors *Mahattattva*, *Ahamkaara* and *Maanas* constitute the universal mental sphere. The human mind is a miniature of the cosmic mind where all the above principles interplay in similar rhythm as in the universe. The fourth factor *Indriya* is strictly biological and through the *Tanmaatras* (fifth factor) the metaphysical and physical factors are precipitated and coordinated by mind. This way the human mind is a part of the universal mind. Each mind is connected with every other mind and each mind, wherever it is located, is in actual communication with the whole world. This is how, the whole world can be considered as a single mental sphere; similar as it is regarded as a single biosphere.

Gunas: The Basic Quality for Diversity

The Sanskrit word *Guna* means quality, the property essence of all things. In the universal condition, the cosmic substance *Prakruti* (the nature) consists of three constituents or Powers called *Gunas*, named as *Sattva*, *Raajas* and *Taamas*. The Existence of *Prakruti* cannot be realised in the absence of *Gunas*, as one cannot expect the presence of fire in the absence of heat. So any individual, may be a plant, animal or a man, is a product of nature, must carry the *Gunas* as a Psychological basis. They are the root of all change, the foundation of reality and essence of all things. The *Gunas* never separate from each other rather intermingled with one another, nor function separately. They coexist in everything and support each other. But one or the other among them may predominant in action. Variegated arrangement of the *Gunas* account for the manifestation of the nature, similar to the arrangement of atoms accounts for all the elements (Padhy 2014).

In the universal condition of the nature, the three *Gunas: Sattva, Raajas* and *Taamas* respectively work to reveal, to move and to restrain; in the phenomenon world they signify adhesion, cohesion and disintegration; from the psychological point of view they illuminate, activate and obscure; on the basis of moral plan they express as emancipation, affinity and sin; in the nature they manifest as pleasure, pain and indifference and are attached to happiness, action and heedlessness. In general *Sattva Guna* is the power of the nature that reveals all manifestations; *Raajas Guna* points to energy or the abstract principle of activity or the power of activating or exciting, without which the other two *Gunas* cannot manifest their quality; and *Taamas Guna* is the abstract principle of restraint or the binding potency of nature. From the mental point of view, characters like compassion, concentration, courage, detachment, faith, enlightenment, forgiveness, gay and pure action are the expressions of *Sattva*; argumentation, attachment, back biting, craving of the senses, desire to kill, desire to buy and sell, doubt, envy, disrespect, egoism, falsehood, gambling, insulting criticism, irregularity in conduct, jealousy, lack of shame, quarrelling, selfishness, treachery, temptation are the expressions of *Raajas*; and *Taamas* leads to carelessness, delusion, ignorance, Laziness, sleepiness, want of faith, and discrimination etc.

The dominance of *Gunas* in a human mind is mostly controlled by two factors: (1) internal and (2) external. The internal factor is the *Samskaara* of a person, that is the mental impressions of his last life that he is carrying forward. The external factor is the basic environment around us which influences the internal system to react accordingly. Mostly, contamination of *Gunas* in a human body occurs through the food intake. Through ingestion only the external environment in the form of *Guna* pricks the mental sphere and dominates over it. That is why, food is given so much importance in Indian culture. The type of food, the person from whom it is accepted or procured and the source of earning to prepare the food are the factors responsible to carry the *Gunas* and contaminate one from another, through the process of giving and accepting. The same principle is also applicable to the exchange of physical commodities.

Classification of Mind

Human mind can be classified into five types based on their activity and expression such as *Moodha* (idiot), *Kshipta* (fickle), *Bikshipta* (disturbed), *Ekaagra* (concentrated) and *Niruddha* (vacuous). Out of the above five, the first three stages are mostly controlled by internal factors. However, the habits of a person as well as the external surrounding also contributes to this phenomenon. A *Moodha* mind is unable to differentiate good and bad and flow with the environmental situation without his self-identity and integrity. The *Kshipta* operates so fast that he hardly gets time to look for the consequences of his actions; he commits mistakes time and time again. The *Bikshipta* is unable to concentrate on a specific item and jumps from one to another creating chaos in every sphere and unable to accomplish any work perfectly. A concentrated (*Ekaagra*) mind is also the internal strength of a person as well one can cultivate this habit to be so. To explain concentration, it is the basic difference of mental power between men and the animals. All success in any line of work is the result of concentration. Man has greater power of concentration than animals and there is difference in their power of concentration even amongst men. Of course, many animals show greater power of concentration than man, but this is a behavioural character than psychological. Amongst man, the difference in the degree

of concentration stratify them as the lower or higher - a sociological implication.

Someone concentrates upon a thing or action which he loves. The great trouble with concentration is that, we do not control the mind; it controls us. The external factor that we love, draws the mind into it and holds it as long as it chooses. Even people with greater capacity to work longer are designated as workaholics; a negative terminology for concentration at a work place. The danger of concentration is such that the mind is unable to detach even at its will, that causes great suffering. So, along with the development of concentrations one must develop the power of detachment. Powers to attach and powers to detach are the two equal parts of concentration, should be followed with balance.

The *Niruddha* is a thoughtless mind which is so calm that thought vibration never raise in it. The thoughtless mind is the highest state of mind; a state of *Yoga Samadhi* (apex state of Yoga) and the ultimate state of mental culture. In such a mind the reality of the self, the *Aatman*, is realised. Such a mind can be compared with a television screen without picture. From practical point of view, when a Yogi wants to know about a fact (may be past, present or future), he concentrates the theme of the fact on his *Niruddha* mind. The vibrations relevant to that fact appear before him, just like pictures on a screen.

Through the sense powers (*Indriyas*), mind perceives the subtle elements (*Tanmaatras*). Above the normal sense powers there exists a sixth sense, which can be called as super metaphysical state. Activities like: unknown telepathy, known telepathy, thought vibrations to influence others, mass mobilisation, perception of thought vibrations and events of past, present and future by yogic power or dream experience and expression of sixth sense in animals and certain human beings come under the category super-metaphysical expression. In some subjects these activities are expressed naturally; but, in all of us this power is in obscurity and can be developed with little concentration and effort to understand. These metaphysical manifestations of the mind are well realised in every cross section of the society. Yet it is not well analysed from functional and scientific point of view. Even, blessing and cursing someone, also comes under this category (Padhy 2006).

Mental Vibrations

The mind vibrates on and on and not exceptional during sleep, as someone experience a dream. Mental vibration so released from wireless human mental broadcasting centre travel with lightning speed far and wide in all directions. They enter into the minds of other persons and produce in them similar thought vibrations. So, a vibration of peace, poise, harmony, spiritual and joyful waves produce similar thoughts of harmony and peace. On the contrary, vibrations like jealousy, revenge and heartedness enter the minds of thousands and stir in them similar thoughts. That is why people of similar thoughts are attracted towards each other. This universal law is continually operating whether we are conscious of it or not. Every one of us has his own mental world, own mode of thinking, understanding and acting. As the mode of thinking differs from person to person, it may lead to friction and misunderstanding (Padhy 2006).

Thought is very contagious. A sympathetic thought raises a sympathetic reciprocation, of anger produces a similar vibration and a cheerful thought of someone produces cheerfulness in others. This is how a mind interacts with another mind and the mental environment. For example, in a social environment we come across certain persons, their presence itself is painful for others; the interactions with a pious person automatically induces calmness and serenity; a crowded surrounding many a times is intolerable and we find a way out of it; when we enter to a *Pujaa*, we get a different vibration compared to a night club etc. etc. We have to watch our mental vibration in every situation when we come across sense-objects and work accordingly. One can acquire the power of mind watching with little effort.

Gita says (2,62,63):

"The man dwelling on sense - objects develops attachment for them; from attachment springs up desire, and from desire (unfulfilled) ensues anger."

"From anger arises infatuation; from infatuation, confusion of memory; from confusion of memory, loss of reason; and from loss of reason one goes to complete ruin."

The above are the chain of reactions that occur inside the mind when it comes in contact with a sense-object.

The thought vibrations released from a mind never perishes, rather gets recorded in the ethereal environment. They reach the cosmos, colloid and combine with similar vibrations present earlier in the surrounding, again rebound to the place of origin being reinforced. Further, such vibrations activate the mind again and again in the similar direction and like vibrations are multiplied, which ultimately dominate in the mental sphere. This is how positive or negative vibrations grow in human mind, influences the other minds and stratifies in a community or society. By this, the mental vibration works as a human ecological principle such as “good for good”, “negative for negative” and so on. The whole scenario is such that, as if, we are immersed in an ocean of thought vibrations; forcefully directed to think in a specific line and unable to protect our mind from such attacks. So, everybody is experiencing the power of thought unconsciously to a greater or less degree.

Thought has got tremendous power. In positive implication, they can heal diseases, can transform the mentality of other persons, can be used to communicate with other minds and many other works. One must be careful of his own thoughts. Whatever is sent out of one mind, comes back to the centre of origin being reinforced. So every thought we think works like a boomerang. Any good or bad thought has three effective spheres (1) it effects the thinker at its own mental environment, (2) effects the person who is the object and finally it effects (3) the mankind by joining with the cosmic mental atmosphere.

There is a common saying “as a man thinketh so he becometh”. This is the greatest law of thought. Thinking positive of self that ‘I am young’; ‘I am capable’; ‘I am strong’; ‘I am pure’; ‘I can do it’ etc. has a strong effect on the mental sphere and psychology; accordingly the body metabolism is reflected and channelled. This is how ageing process can decline or can make someone strong, able and pure. Similarly, mental expressions for worry, fear, anxiety, grief, anger, cheerfulness, treachery, depression, gloom, peace, harmony, joy, health, power, strength and beauty etc. are reflected on the face of a person and his eyes speak the inner truth in him. The facial expression truly advertises the inner state of mind. In our daily life the mental energy is misdirected in various worthless worldly thoughts. To conserve this energy and orient it

in right direction one should monitor his thoughts positively. Even it is advised not to store useless information in the brain and one step ahead not to learn whatever has no use to someone (Padhy 2006).

Deep Inside the Mind

In a human body, the soul is encased successively in three bodies (1) the external gross corporeal body (*Sthoola*), (2) the middle astral body (*Sukshma*), (3) the inner causal body (*Kaarana*). The causal body is a matrix of 35 ideas or thought forces, out of that, 19 elements compose the astral body and 16 elements form the physical body. Further details on this, is beyond the scope of this paper.

The actions and events performed in a person’s life time leaves an indelible trace in the subconscious region of the mind which finally gets recorded in the causal body in the form of *Karmic* seeds. These seeds are the *Samskaara* (the balanced statement of deeds of past life experienced in the present life) carried in the subconscious memory as experience of one’s past life and grows into a character or destiny in the present life. *Samskaara* is the theme of the inner mental environment or the mental impression resulted as the effect of *Karma* transmitted from life to life and forms the bondage of the soul. As a universal factor, the internal environment is also governed by three *Gunas* (quality); the property essence of all things as described earlier.

The mind as a whole is called *Antahkarana* (the internal doer). It is the internal instruments of mind, the seat of thought and feeling, the thinking faculty or the mind as a whole. In fact, the sense organs (*Indriyas*), the mind (*Maanas*), the determinative faculty (*Buddhi*) and egoism (*Ahamkaara*) all form a group known as *Antahkarana*, the latter is influenced by the *Samskaara* and the *Gunas*.

Through the sense organs, the mind first perceives the sense objects in the form of sense powers (*Tanmaatras*). By this, a desire to have the sense object is implemented. A desire stimulates a thought; a thought embodies itself in an action (*Karma*). So each thought is an endless chain of cause and effect; each cause having an effect and each effect having a cause. Every action (*Karma*) produces two-fold effect, one on the individual mind and the other on the envi-

ronment. This way a mind remains in connection with the global mental sphere.

The mind is otherwise termed as *Chitta* - the mind stuff. It is divided into three categories in accordance with its respective functions such as *Buddhi* (intelligence), *Ahamkaara* (ego) and *Maanas* (Mind) as described earlier. Each has its distinguishing character, individual function. But actually each one is only a separate department of a single functioning unit without a tendency of being separated to individual parts. The *Chitta* is defined as the organised totality of conscious experience. Its distinguishing feature is awareness and capacity to know its environment. It has twofold behaviour, that is (1) conscious and (2) unconscious. The individual is aware of the first behaviour and record it as experience; while the second one is subconscious experience that occur without the awareness.

The *Buddhi* is the seat of intelligence or the initiating capacity of the individual. It is the capacity of determination. It is the basis for knowing, willing, feeling and resolving. It dwells upon a thought that rises in a mind (*Maanas*). It is analytic in nature.

The *Ahamkaara* is the individuating or arrogating principle. It is responsible for the position and identity of an individual. It accounts for the mental attitude of 'I know', 'I exist', 'I have' etc. It is a self-conscious principle. It relates to all the experiences that had by the mind (*Maanas*) and intelligence (*Buddhi*). It has the function of accepting or rejecting the demands or wishes made by the impulses, for its benefit as a whole.

The *Maanas* is the mind in real sense what a common man understands. It is the unit of performing mental processes. It has the rational directing power behind all actions. It is the seat of desire and associated with the five knowing senses (*Jnaanendriyas*) and working senses (*Karmendriyas*). It is the seat of all conditions of thought, imagination, dreaming, affection, desire, moods and temper. It is instrumental through which thoughts enter from the subjects. It constantly vacillates between objects.

In toto, the *Maanas* perceives and presents the *Ahamkaara* - arrogates; and the *Buddhi* discriminates, decides and resolves which finally leads to rise of an action (*Karma*). These three aspects constitute the *Chitta* as a whole. The waves of thought in the *Chitta* are called *Vrittis*. According to the predominance of the *Gunas*,

mental vibrations are induced which indulge someone to execute a *Karma* (resultant action); an ecological basis of performance of right and wrong. The *Vrittis* are manifested in the following forms - scattering (activity), darkening (dullness), gathering (struggling to centre itself), one pointed (tries to concentrate) and concentrated. *Chitta* creates the world according to its own thought (*Sankalpa*). In a different explanation, *Chitta* is always trying to get back to its natural pure state that is thoughtlessness; but the organs draw it out. To check this outward tendency of *Chitta* is the first step in Yoga. Yoga checks, controls and stops the root function of the mind that is thought (Fig. 1).

The Purpose of Yoga

The term 'Yoga' comes from the root Sanskrit word *Yuj*, means to join. Yoga is the practical science of realisation, its philosophical basis is *Saamkhya Darssan*; the latter is the study of principles of cosmic evolution by rational analysis. The laws of *Saamkhya*, that governs the evolution of the universe, can be extended to the spiritual evolution of an individual. The individual is being assumed as a microcosm of the macrocosm that is, the universe. Mathematically, yoga means addition; the meaning is often spiritually referred to joining of the self (*Aatman*) with the almighty (*Paramaatman*), the union of individual spirit with the universal spirit. When the Hindu mythological icons are deeply looked into, the three supreme Gods viz: Brahma, Vishnu and Shiva, those who represent the cosmic ecological principles of creation, maintenance and destruction, they perform yoga to implement their yogic power in proper direction to balance the nature.

The initial aphorism of the famous treatise, the *Yogasutras* by Patanjali presents the aim of Yoga, that is

"*Yogah Chitta Vritti Nirodha*"

Meaning: Yoga is restraining the mind-stuff (*Chitta*) from taking various forms (*Vrittis*).

The waves of thought in the *Chitta* are called *Vrittis*.

Indian yoga system is so much elaborated, that it itself forms a school of thought. Yoga is not only from physical point of view, as often considered and advertised nowadays; but mostly aimed to control the mind. Indian sage scientists have experimented that, the mind (*Chitta*)

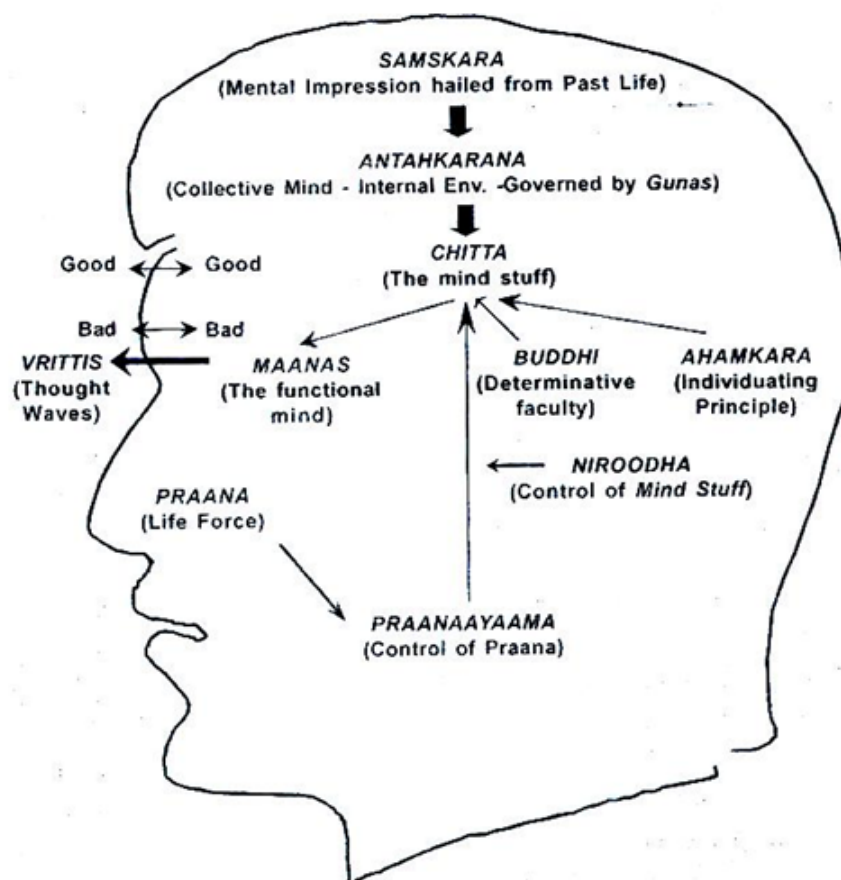


Fig. 1. Interactions inside the mental environment (Padhy 2006)

has coordination with the breathing of an individual. Between mind and breath (*Praana*), the former is an abstract principle and the latter is physical one. If any one of them is disturbed the other gets automatically disturbed; otherwise calmness of any one induces calmness in the other. In a normal life, if someone becomes angry, worried, frightened or sexually excited the *Chitta* gets disturbed, followed by violent breath. So, yoga is a system to synchronise the mind and breathing leading to calmness and serenity. But, it is difficult to catch the mind being abstract.

Arjuna asked (Gita 6/33-36) :

"You have told me this Yoga of peace and unity of beings; but my mind is restless, I do not understand what you say."

"For the mind, Krishna, is powerful, fickle, violent and uncontrollable. Harnessing the mind, is like harnessing the wind."

Sri Krishna replied :

"The mind indeed is all that you say, Arjuna, but determination helps; and renunciation curbs it."

"Without determination, no man can reach Yoga, but the self-disciplined, struggling nobly, can achieve it."

In yogic technique the breathing system is brought under control (*Praanaayaama*) which ultimately subdues the mind, makes it free from unwanted vibrations either being induced internally or influenced externally; finally the mind leads to a vacuous condition. Such a yogic mind is most powerful, acquires the power of creation, maintenance and destruction. Stoppage of vibrations in a yogic mind stops the recording of *Karmic* seeds in the astral body. As the *Yogi* performs all his *Karma* without being attached, the possibility of rebirth becomes remote and the soul migrates in the line of salvation.

Praana: The Vital Energy

Among the eight limbs of yoga, the *Praanaayaama* holds a central position around which the other limbs are associated. *Yama*, *Niyama* and *Asana* are necessary to be practised to accomplish *Praanaayaama* while *Pratyahara*, *Dhaaranaa*, *Dhyaana* and *Samaadhi* are the results derived out of it. The word *Praanaayaama* is elaborated as *Praana* (life force) + *ayaama* (to control). Patanjali has specified broadly that controlling the motion of exhalation and inhalation is *Praanaayama*. In fact, breath is the vehicle through which the universal *Praana* enters into a living system and controlling the breathing is only one of the exercises through which one gets into the real *Praanaayaama*.

According to the philosophers of India, the whole universe is composed of two basic components: one, the *Aakaass* (Ether) and the other *Praana*, needs elaboration. *Aakaass* is universal and omnipresent. *Aakaass* (1) being prime along with (2) *Vaayu* (air), (3) *Tejas* (fire), (4) *Aapa* (water) and (5) *Kshiti* (earth) constitute the five *Mahaabhootas*, the earliest possible recognition of the ecological factors. Each of the *Mahaabhootas* is conditioned and evolved from its immediate predecessor placed in order of proceeding as ether, air, fire, water and earth. Each element has its own special property in addition to the general qualities of the other element, from which it is evolved. *Aakaass* possesses the property (*Tanmaatras*) sound (*Sabdha*); *Vaayu* - sound and touch (*Sparsha*); *Tejas* - sound, touch and form (*Roopa*); *Aapa* - sound, touch, form and flavour (*Rasa*) and *Kshiti* - sound, touch, form, flavour and odour (*Gandha*). Scientifically, if we consider the factors in the order of decreasing tangibility; for anything to be solid (*Kshiti*), it must have been liquid (*Aapa*) previously; for liquefaction heat (*Tejas*) is required; to generate heat some combustion of gases (*Vaayu*) is required and all these interplay occurs in space (*Aakaass*). So anything that can be sensed and exists, are from the products of the original substance *Aakaass*. It is beyond all ordinary perceptions which can only be viewed when taken in a gross form. At the beginning of creation, there was only *Aakaass* and at the end, all solids, liquids and gases will disintegrate into *Aakaass* again.

Praana is the infinite and omnipresent manifesting power of the universe. By the power of the *Praana* only, *Aakaass* is manufactured into this universe. *Praana* is the universal energy manifested as a force like gravitation, magnetism, electricity, heat etc. In a living system the actions and functions of the body, the nerve currents, the thought process, the pumping action of the heart, the flow of blood, expansion and contraction of chest etc., are the manifestations of the *Praana*. The sum total of all the forces of the universe, either physical or mental reiterated to their original form *Praana*, turn to the potential energy at the end of the creation.

If the Yogi understands the *Praana* perfectly, realises its generalised manifestation of force and could control it, as a result all the powers of the nature comes under his control. He, who controls his *Praana*, is capable to control his mind (and body); following the generalised formula by which all the other minds that exists, comes under his control. The *Praana* is the vital force in every living-being (*Bhoota*) when considered from biodiversity point of view. Since, all the eco-systems are interconnected to each other forming the whole globe as a single eco-sphere; similarly, all the life forces are intermingled to form the Biosphere / *Praana* sphere. Thus by following the process to control the life force through *Praanaayaama*, a Yogi performs the *Bhoota Yajnya*; a symbol of his obligation for the biodiversity around him (Padhy 2011).

Vortex Points in the Human Body

The science of yoga states that in every human body there are 72,000 interconnected spiritual nerves (*Naadi*) which connects a human body with the whole universe, as if, the total nature interplay inside a corporeal frame.

A saying from Kathoupanishada (2,4,10) states that, "What is even here, that is there; which is there, the same is here, from death to death he proceeds who here beholds the difference."

Amongst these Yogic nerves, one is the most important named as *Sushumna*, responsible for perception of the self (*Aatman*), is placed within the spinal column being extended from the lowest vertebra upto the brain. Two more spiritual nerves, *Edaa* (the left) and *Pingalaa* (the right), carry the energy current for the maintenance of the body, in turn both run with *Sushumna*.

The central nervous system (*Sushumnaa*) inside the spinal cord has six spiritual energy centres which has a metaphysical structure named as *Chakra* (wheel) or *Padma* (lotus) in yogic language. In English, they are called as Vortex (Fig. 2). These vortices are: (1) *Mulaadhaara*: Placed at pelvic plexus or Coccygeum ganglion, (2) *Swaadhishtaana*: Hypogastric or abdominal aortic plexus, (3) *Manipura*: Solar plexus, (4) *Anaahata*: Cardiac plexus, (5) *Bissuddha*: Cervical or carotid plexus and (6) *Aajnyaan*: Cavernous plexus and a seventh Chakra at the top of the head. The *Chakras* / *Padmas* / vortices are ornamented with different number of petals with which the different *Devataas* (energy) are associated.

These *Chakras* also recognised as the centres of the gross ecological factors or *Mahaabhootas* as discussed earlier, have a co-ordination with the body physiology and as well, the energy concerned with each vortex is named after a *Devataa*. The seventh *Chakra* is called *Sahasraa*, the highest one (thousand petaled lotus) at the top of the head. *Mulaadhaara* - carry the phenomenon of earth : *Kshiti Tattwa* -

The point of waste excretion that enters the soil / colon system. *Swaadhishtaana* - Phenomenon of water : *Aapa Tattwa* - The point of water excretion / Renal system. *Manipura* - Phenomenon of fire : *Tejas Tattwa* - The point of oxidation / digestive system. *Anaahata* - Phenomenon of air : *Vaayu Tattwa* - The point of oxygen acceptance / respiration. *Bissuddha* - Phenomenon of vacuity : *Aakaasaa Tattwa* - The point of sound vibration / vocal system. *Aajnyaan* - Phenomenon of unlimited energy : *Surya Tattwa* - The point of thought vibration / mind. The *Chakras* are conceived as the relational manifestation of the *Mahaabhootas*, control the total activity of human body.

From a physiological point of view, these seven vortices are situated on the seven ductless glands in the body's endocrine system. The lowest or first vortex centres on the reproductive glands; second on the pancreas; third on the adrenal glands; fourth on the thymus gland; fifth on the thyroid gland; sixth on the pineal gland and the seventh centres on the pituitary gland at the frontal base of the brain (*Sahasraa*) (Fig. 2)

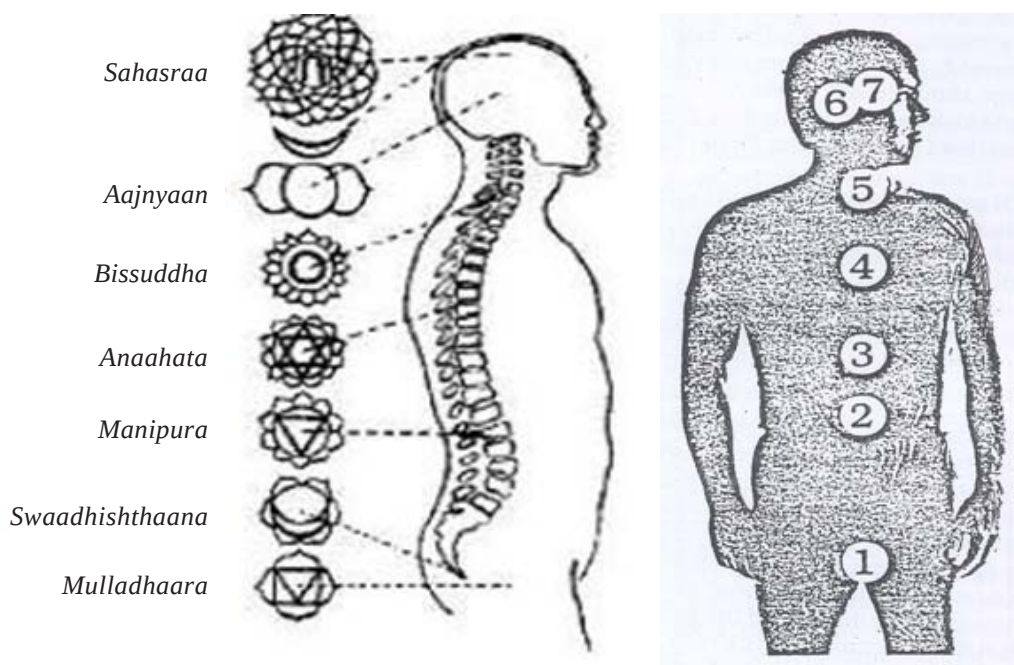


Fig. 2 . Location of the *Yogic Chakras* (A) and *Endocrine Glands* (B) in a human body (1) the reproductive glands, (2) the pancreas, (3) the adrenal gland, (4) the thymus gland, (5) the thyroid gland, (6) the pineal gland, (7) the pituitary gland (Modified - Padhy 2011)

The vortexes revolve at greater speed, permitting vital energy - *Praana* to flow upward through the endocrine system.

Awakening the Kundalini

The *Sushumnaa* starting from *Mulaadhaara*, passes through the *Padmas* and reaches at the *Sahasraa*. It is realised that the whole vital energy of the human body being connected with the universal energy, is concentrated in the *Mulaadhaara*, named as *Kundalini*. By yogic manipulation the dormant *Kundalini* energy can be activated and driven through the *Sushumnaa* to reach the *Sahasraa*. Elaboration of this special yogic technique is beyond the scope of this communication. Broadly, the yogi mentally directs his life energy (*Praana*) to move; upward and downward through the six spinal centres; that energizes the *Sushumnaa* which facilitates to give passage (way) for the movement of the *Kundalini* energy. Since all the *Devataas* in different energy forms are positioned on the *Padmas* of the *Sushumnaa*; the concentration and mental movement of the yogi, is regarded as the highest grade of worship. This completes the *Deva Yajnya*. As the Yogi progresses with his practice, the different energy centres come under his control; explained in yogic language that the particular *Devata* is worshiped, or the power concerned is brought under his control to which he conquered. This is how the Yogi directs that power to work for his self upliftment as well as benefit of others (Padhy 2011).

As the *Kundalini* power travels from vortex to vortex and finally reaches the brain (*Sahasraa*), layers after layers of the mind gets revealed for the Yogi under vacuous condition. The yogi attains divine wisdom, super consciousness, perception and realisation of the universal spirit. In yogic language, the *Sahasraa* is the place where the divine foot of Guru is established. This explanation is symbolic and can be coordinated with the obligations of a yogi for the source of knowledge. The rise of *Kundalini* energy can also be achieved through immense love for God (*Bhakti*- Devotion) or through strong renunciation (*Bairagya*) or by the mercy of his Guru through blessings. As a general principle, wherever there is any manifestation of supernatural power or wisdom in a human being, there must be a little current of *Kundalini* in its way to-

wards the *Sahasraa*. Excitation of *Kundalini* and following its own way is the end point of any worship to achieve the supreme stage of knowledge.

All energy in a human body can be transformed into a highest form called the *Ojas*, as per the Yogis' claim. The *Ojas* which are stored up in the brain, is very powerful and responsible for the intellectual and spiritual power of a man. The yogi is capable of transforming all his electrical and magnetic powers of the body into *Ojas*. It is claimed that the sex energy (*Virjya* / *Reta*), which gives immense sensual pleasure on release, can be converted into *Ojas*, when checked and controlled its way out. Such a yogi is called *Urrdhwa-retaa*, who has upwardly directed sex energy. That is why continence on sex and chastity is given prime importance in yoga, as well in all other religious orders of the world. The monks give up marriage, avoid sexual perseverance into their mind and adopt different yogic techniques to transform their sex energy into *Ojas*.

Among the limbs of yoga, *Dhaaranaa* is holding the mind on to some particular aspect, and *Dhyaana* is an unbroken flow of knowledge on that. In Yoga, the practice of rhythmical breathing (*Praanaayaama*) makes all the motions of the body perfectly rhythmical. The physical breathing exercise puts impact on the body's physiology through the respiratory centre to control other centres. Similarly, the mind has co-ordination with the breathing of an individual. Between the mind (*Chitta*) and breath, the former is an abstract principle and the latter is a physical one. If any one of them is disturbed the other gets disturbed automatically; otherwise calmness of any one induces calmness in the other as discussed earlier. The yogi reaches the mind with the help of the breath, as the synchronised breath leads to calmness and serenity. Ultimately, the mind comes under subdue and gets free from unwanted thought vibrations either induced internally or influenced externally and finally leads to a vacuous condition. Such a yogic mind is very powerful, acquires the power of creation, maintenance and destruction at a will. In such a state of mind, the perception of the self (*Aatman*) is realised and all the doors of knowledge of the Universe gets opened for a yogi, if a perfect condition of *Dhyaana* is achieved. Gita (6/25) has presented this condition as: '*Na Kinchidapi Chintayet*' (Make the mind thoughtless).

Seek a Guru

Patanjali's 'Yoga Darssana', the authoritative compendium on yoga, is presented in the form of aphorisms; but discussion of any topic goes with the story of six blind men visited an elephant and explained its shape and size as they have perceived. In India, there are a good number of Yoga schools of thought. They differ from each other from their performance point of view; but the basic philosophy and aim of achievement remains the same. It is difficult to explain any Yoga technique through this article, as there are ethical restrictions. Often, it is misinterpreted that the techniques are the monopoly of a school of thought or Guru. But, the reality is far off from the misunderstanding as a disciple is expected to learn the Yoga lessons from a bonafide Guru, practice them under his direct supervision; otherwise, failure is inevitable. All the spiritual sciences are called "Guru Mukhi Vidya" - that means the lessons are to be verbally transmitted directly from teacher to be taught, not even through a book. Practice of yoga, by reading books or learning from unauthorised persons or from any media, is dangerous and negatively reflective.

Yoga, being expanded up from simple mathematics of addition upto realisation of the ultimate reality, can be correlated in this communication as a symbol of *Pancha Yajnya* (Padhy 2009). In the five sacrifices, one is expected to offer for his source of knowledge (*Rrushi Yajnya*); for his parents and ancestors (*Pitru Yajnya*); for the ecological factors, from whom he gets the unclaimed gifts (*Deva Yajnya*); for the biodiversity around him (*Bhoota Yajnya*) and for the fellow human beings of his society (*Nrru Yajnya*). This Vedic based *Pancha Yajnya* philosophy depicted in Manusmruti, finds a practical root in the practice of yoga, that enables a yogi to offer his sacrifices automatically being unattached; thus he respects and completes his ecological responsibility.

The yogi controls breath, the life force (*Bhoota Yajnya* - Sacrifice for biosphere); diverts his vital sex energy into a super form, the *Oojas* (*Pitru Yajnya* - sacrifice for the secured flow of

genetic system); activates the vortexes (power points) that exists within the spinal column (*Deva Yajnya* - sacrifice for different environmental powers) and finally attains the supreme knowledge of self-realisation (*Rrushi Yajnya* - sacrifice for the source of knowledge). All these are possible in a human body if practised with self-regulation (*Nrru Yajnya* - sacrifice for humanity), for upliftment of self and all concerned. This enables the yogi to offer his sacrifices automatically being indifferent and unattached; thus he honours his environmental responsibility as *Pancha Yajnya*, the highest ecological philosophy of ancient Indians (Padhy 2011).

ACKNOWLEDGEMENTS

This paper is devoted in respect to Sri Narendra Damodar Das Modi, the Hon'ble Prime Minister of India, who opened the School of Yoga for the whole world by the creation of a 'Yoga day' in the human calendar.

My special hearty thanks to Dr. M.K. Bhasin, former Professor and Head of the Department of Anthropology, Delhi University, who has thoroughly reviewed and encouraged for the publication of this manuscript.

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Paper received for publication on November 2016
 Paper accepted for publication on December 2016