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Consciousness, free will, transformation science, ancient samkhya philosophy of cause and effect

Abstract

The existence of free will has been discovered by neurological studies. However there is a lack of research in what initiates the firing of free will within the nerve endings. This paper addresses that issue using ancient knowledge about consciousness, three energies or gunas that characterize materiality, prana, and transformation. The premise is made that regular pranayam breath practices are key methods to initiate the firing of nerve synapse in the brain to develop free will and transformation

Keywords: consciousness, matter, samkhya, free will, energetic, transformation

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Introduction

Some people claim that there is no free will in life. For those persons, there probably is no free will, choice, opportunity, or transformation. It can be a depressing situation. Samkhya philosophy offers a new opportunity of investigation for the modern mind. Samkhya was written by Kapila more than 2500 hundred years ago, prior to the era of Buddha. It is atheistic and dualistic. It gives a complete explanation of creation, the life principle, the principle of materiality composed of three energies, the makeup and functioning of the mind, the factors that lead to a person's transformation away from mental suffering and painfulness, and the concept of liberation.[1]

Samkhya consists of two independent, eternal, co-existent principles and is therefore dualistic. Non-duality occurs rarely in the human person. Even in meditation when the thoughts are stilled, there is a dualism between self and observation of the stillness. As long as there is a sense of self and objects or other, there is duality.[2]

Debate: science and consciousness

Science has yet to solve the mystery of consciousness. By that is meant: Is consciousness a separate principle or an integrated component of materiality or nature. Neuroscience seems to be closing in on discovering the type of relationship that links consciousness and matter. Studies that track the brain's neural activity and the synaptic jump between nerve endings suggest clues. Studies about the brain conducted by Peter Tse at Dartmouth opens up the question about the root of the firing of neurons. What is the process that initiates the firing, or synaptic jump between nerve endings? Professor Tse argues that free will can be pinpointed by the microscopic workings, the firings found within the nerves. He finds philosophical roots to affirm the human free will in psychologist William James and in Charles Darwin.[3]

If free will exists, what is the root of the free will that is observed in the brain? What enlivens the firing of the nerve endings?

Free will in the context of this exploration means one-pointedness, clarity, ability to direct attention and choose responses, including more creativity. It means control over the mind's ordinary pattern to have reactionary responses, and to jump from one thought to another without connectivity.

Consciousness, matter, and breath

Two separate, eternal principles characterize Samkhya. These are consciousness *purush* and materiality *prakriti* often referred to as nature or matter. The two principles are described as ever existing in proximity of each other, though they do not interact. Each is eternal and separate, and they have a relationship. Matter works because it is in the proximity of consciousness. Consciousness enlivens the otherwise inert matter. Consciousness is like an inspiration that ignites matter to express its potential.[4] Relative to the premise of this paper, nerve endings are enlivened by the consciousness within prana and pranayam breath practices.

Consciousness is transported within human form and all organisms by way of the movement of prana. Breath plus consciousness equals prana. Breath is related to air and wind, and these carry what is in their vicinity.[5]

This is the path by which consciousness pervades the body and the mind. It is carried to every corner and space from large to small, including minute tissues and unseen nerve endings where synapse occurs.

The relationship between consciousness and matter is the same as the relationship between a living and dead body. At the time of death, the breath and consciousness leave the body.

Consciousness

The characteristic of consciousness is to pervade, and it is the principle of illumination, unseen. Perhaps it is like the unseen principle of electricity that is behind light. Consciousness remains an undivided principle of oneness, no matter how many forms it enters. Consciousness within is no different than the consciousness of the macrocosm. Consciousness within is like a magnet around which matter accumulates.[6]

Internally, consciousness brings awareness to the mind, to the intellect, thought, feeling, and sense of self. It acts like a mirror, reflecting what is presented to it. The mirror never changes, though one might experience a change as a result of observing one's reflection. Reflections bring an increase in awareness.

The sun could be compared to consciousness because its light brings objects into awareness. However the sun has form and consciousness has no form. Rather, consciousness is the illumination that enlivens the sun's characteristic of light.

A further description of consciousness could include investigation of the phenomenon of air. It pervades everything. Air is knowable because it has discernible qualities. Amount of dampness or cleanliness can be cognized, even measured. Imagine each molecule of air having

a small mirror (consciousness) inherent in its structure. This tiny spot of consciousness belongs to the expansion of consciousness that exists everywhere. Differences exist between air and consciousness because air is discernible. There is no materiality to discern in consciousness. It is the inherent principle of illumination.[4]

The power of illumination can only be inferred. Because we can feel the moisture in the air, kindness, friendliness, warm-heartedness, the presence of a free will, a freedom, and the understanding that synapse occurs in the brain-awareness of these phenomena is due to consciousness. The ears hear and the eyes see because there is a spot of consciousness within their tiny tissues, making them enlivened, giving life to their physical form.

Materiality, tangible and subtle

The principle of matter *prakriti* is the opposite of consciousness. It is composed of innumerable configurations of three energies *gunas*: light *sattwa*, motion *rajas*, and dullness *tamas*. In Samkhya, these three energies perform the activity in everything, even in the unseen such as thought.[6]

Working consciously with these energies, a person can bring about change and free will. Breath belongs to the domain of matter. In pranayam, consciousness and breath are attached. Breath carries consciousness throughout the body and mind. Every tissue, space and subtle nerve ending is enlivened.

Light and knowledge in combination contain the largest amount of consciousness. It is the energy of light combined with intelligence that inspires the will to desire change. The thoughts of having more choices and freedom from mental pain become the desire for free will. The question then becomes how to develop free will.

Two eternal principles and three mutable energies

The following outline summarizes the characteristics of the co-existent, separate, eternal principles: consciousness *purush* and matter *prakriti*.

Consciousness

a. Immutable and Formless. Known by inferring that something exists beyond the physical and mental.

b. Pervading Illumination that Enlivens Matter

c. Instrumental to Creation, But Not a Cause.

d. Eternal, Supreme Spirit

Materiality / nature

i. Mutable Cause of All Manifested Phenomena

ii. Eternal, Supreme Matter-When the Energies are in Equilibrium

iii. Consists of 3 Energies:

  a. Sentience, Light, Purity *Sattva*

  b. Action and Activity, Intelligence *Rajas*

  c. Inertia and Dullness *Tamas*

When creation begins, the three mutable energies of matter begin to operate. It is the action energetic that falls first out of equilibrium. It is the only energy that has motion, and it initiates all change. The three energies continually work together, and their combinations are innumerable. One of the energies predominates in every configuration, except in equilibrium.[4]

An example: There are three types of sleep, each dominated by one guna. A sound, deep, restful sleep is sattvic. Upon awakening, one feels refreshed and one-pointed. A restless sleep is rajasic. Upon awakening, one does not feel refreshed. A heavy, unrefreshing sleep is tamasic. Upon awakening, one wants more and more sleep. Each type contains all three gunas. The body belongs to the tamasic factor. The mind belongs to the sattvic. Its influence makes the mind peaceful and one-pointed.

Universal mind – dynamics of creation

The first stage of creation is known as *hiranyagarbha* or cosmic egg. Hiranyagarbha contains all of creation's mutable principles as universal mind. The principles evolve, mutations form, and the cycle expands. From a scientific perspective of atoms, molecules, DNA, and minute unseen nerve endings in the brain, could these arise from a universal pool that is the same pool as universal mind described in Samkhya?

Evolution of the principles create first the sky, oceans, plant, and animal life. The same mutable principles created the human form, characterized by the most refined intellect. Each species evolved separately. Humans are the only species capable of evolving their minds. They can take up specific practices, develop awareness, study, make intentions, and go beyond the painful situations and sufferings that occur in life, a transformation.[5]

The energy of action *rajas* has a full range of activity from soothing to heating. In the first stage of creation, *rajas* are associated with intellect *buddhi*. Combined with light *sattva*, these two give rise to intelligence. Could *rajas* as the first energy that fell out of balance, be associated with the Big Bang?

Creation of humankind

The first formation of the universal, cosmic mind is the "I-Sense." This purity of identity evolved into the descended manifestation of "I - Am" which is characterized by attachments. This includes ownership to objects, and to qualities, such as "I am hungry, I am happy, I am intelligent, I am a parent, I am a teacher," and on and on.

The formation of the psycho physiological continued in accordance with the operation of the three gunas. The "I- Am" developed into three types of ego: *Sattva* ego of sentience and light, *Rajas* ego of action and activity, and *Tamas* ego of dullness and inert matter. All of these formations are needed in order to delineate a complete creation for a full life, the ability to involute and experience universal mind, and the ability to attain consciousness and liberation.[5]

Sattva-predominate ego manifests into the human mind, the powers of perception, and purified emotions. The fact that we can read, learn, and solve problems is an activity of *sattva* energy. *Sattva* is closest to consciousness as it has the qualities of light and knowledge.

Rajas-predominate ego manifests into the powers of action to change and transform, and into the identifying, individual experience. Accomplishment in a specific job involves action *rajas*, along with identification with the work and its rewards.

Tamas-predominate ego manifests into the qualities of the senses, attachments, emotional discontent, nerves and tissues associated with moisture, heat, air, the non-physical sensations such as pain and pleasure, and all gross-knowable form. The material body is a phenomenon of *tamas*.

Overeating, oversleeping, obsession with drugs, drinking, sex, or any addiction belongs to the energy of *tamas*. Excesses increase

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attachment to the object, and this builds more attachment. Excesses trap the psychophysiology and lead to dullness and inertia.

Functions of prana

Pranayam is an intervention of breath practices that works with the three gunas within. It can change the configuration or code of a particular pattern of behavior, mind-set, or even an addiction. Pranayam increases one-pointedness. When this ability to direct attention is applied to one's work or to relationships, transformations occur. These become a mirror of what is happening within. Examples from my study are given later.

Pranayam works through a system of five pranas located in different parts of the mind-body. Their function is to initiate the processes of the psycho physiological. The domain of the pranas includes the nervous system, and thus the firing of nerve endings.

One of five breaths is also named Prana, the one in the heart, lungs, and frontal lobes of head. Apana is located in the navel and lower portions of the body for eliminative. Samana or the digestive and nutrient breath, resides between the navel and the heart. Udana, the breath of intelligible sounds for communication, is located in the throat, nose, and brain. Vyana, or diffused breath maintains general circulation, and the physical and emotional balance. It is located in the extremities.[5]

Pranayam breath practices make use of all three gunas. The nostrils belong to materiality *tamas*. The moving breath belongs to action *rajas*, and the breath united with the unseen nerve endings increases *sattva*, that has an affinity with the totality of consciousness.

Neuroscience and the gunas

Tse refers to pre-synaptic action as the causation factor that triggers neuronal circuitry. Could the causation factors that trigger neuronal activity be the operation of the three gunas?

Samkhya philosophy is based on cause and effect. If causation factors in neuronal circuitry are characterized by the gunas, these could be the pre-determined cause that acts like an automated code, giving rise to a specific type of neuronal firing.

The cause determines the response or effect. In the example of a father who immediately expresses anger when approached by his son, there is a code set up in the father's mind that kicks in at the sight of his son, or even at the thought of his son. This response is due to a pre-set inner code, pre-determined by rajasic and tamasic energies. If the father was operating from the standpoint of free will, the father would respond according to the present moment. He would not automatically react due to a pre-determined code of anger.

If a person wants to kick the habit of oversleeping, a *tamas* dominate activity, a pre-synaptic setup can change the person's behavior when it is time to get up. More *rajas* and *sattva* predominance would help to counteract. This author suggests that pranayam can change the characteristic of the firing. Tse would use methods that are scientifically measurable. Still, the scientific methods that change the circuitry are characterized by a predominant guna.

The gunas are not ethereal energies of illusion. Rather, Samkhya philosophy holds that the gunas are the substratum of all creation, every phenomenon. If so, they would have to evolve into every atom, particle, the chemistry of thought, tiny nerve endings, and synapse. It may be a leap in thinking to consider everything as phenomena caused by light, action, and inertia, yet worthwhile consideration.

Brain, energetics, and pranayama

Science is confirming a location of free will in the brain. The firing of neurons in synapse demonstrates this process.[3] Could the actions of light, motion, and dullness be responsible for the firing? Can the movement of prana influence the movement in the brain of these energies?

Ancient breath practices pranayam are a key method to activate the flow of prana. Pranayam knits the breath with the nerves. In turn the processes of the body and mind are initiated. This includes activation of brain cells. It is entirely possible that pranayam helps the nervous system and brain to develop qualities. Will power is a quality associated with one-pointedness and firmness. If free will develops, choice, and opportunities are natural outcomes.

Pranayam is a two-part word. In Sanskrit, prana means life, and yama means death. Together pranayam means giving life to protect from death. This includes prevention of decay of the physical and mental. At different stages of life, there is a gradual change that lessens the mind's concentration power.[6] Regular pranayam can keep this force intact. It also reduces the need for physical exercise.

A study: effects of regular pranayam

This author carried out a study to investigate the effects of pranayam on long time regular practitioners of pranayam.

The mixed-methods study examined the perspectives and experiences of long time practitioners regarding their daily pranayam breath practice. The aim was to explore the influence of pranaayam on focus and attention, and its collateral effects on everyday life, especially work and relationships.[7]

Nine subjects working in different professions were interviewed. Then they responded to twelve statements using Likert Scales. The interview data was analyzed for themes, while the mean, median, and mode was calculated for the Likert Scale data. The qualitative and quantitative data were then compared to each other.

The analysis of the interview transcripts revealed 7 themes: pranayam procedures, focus and concentration, influence on work performance, influence on relationships, health and diet, spiritual views, and the single most salient influence of pranayam on everyday life. The analysis of the Likert Scale showed high levels of agreement with the interview data in the areas of focus and attention span; clarity; ability to overcome feelings of suffering and grief; physical and mental stamina; ability to experience kindness and compassion; discipline or self-regulation; quality of relationships; preparation for deeper levels of meditation; enhanced performance for the rest of the day; ability to experience deeper insights; ability to make changes; and agreement that sitting in quiet meditation after pranayam increased its influence.

Below is a description of the essential themes that were assessed in the 12-statement Likert Scale, (Table 1). Nearly all the responses were in the range of Strongly Agree or Agree at the top of the five-point scale. There were a few responses of Neither Agree or Disagree. There were no responses at all in the lowest two categories of Disagree or Strongly Disagree. A description of the 12 themes on which the participants marked their degree of agreement or disagreement follows:?

1. Increase of attention and concentration
2. Increase of clarity
3. Helps to overcome feelings of suffering and sorrow

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4. Stamina to work longer without tiring
5. Enables increased ability for kindness and compassion
6. Helps increased discipline or self-regulation
7. Improves quality of relationships
8. Prepares one for deeper levels of meditation
9. Influences performance for the rest of the day
10. Leads to deeper insights about life
11. Helpful to make a change in one's life
12. Silent sitting meditation enhances the influence of breath practices.

The Likert Scale in Table 1 is read from a vertical position starting with the statements at the top. The value assigned to each response is: Strongly agree, 5; Agree, 4; Neither agree nor disagree, 3; Disagree, 2; Strongly disagree, 1.

The statistical result of each statement's mean, median and mode fell in the range between 5 and 4.

MEAN = Arithmetic average of set.

MEDIAN = Middle number in set arranged from lowest value to highest.

MODE = Number that occurs most frequently in a set.

Results of 5 and 4 indicate a high correspondence of agreement that a regular pranayam breath practice influences the participant's mental, psychological, and other aspects of daily life.

Table 1 Likert Scale: Graph of Mean, Median, Mode

			Q	U	E	S	T	I	O	N		
	1	2	3	4	5	6	7	8	9	10	11	12
Resp A	4	4	4	4	4	4	4	5	4	4	4	5
Resp B	5	4	4	4	3	4	3	5	4	4	4	4
Resp C	4	4	3	4	3	4	4	5	3	4	3	4
Resp D	5	5	5	5	5	5	5	5	5	5	3	4
Resp E	5	5	5	3	4	3	4	5	4	3	4	5
Resp F	5	5	5	5	5	4	5	4	5	5	5	5
Resp G	5	5	5	5	4	5	5	5	4	4	4	5
Resp H	5	5	5	5	5	5	5	5	5	5	5	5
Resp I	5	4	5	5	4	4	5	4	4	4	4	4
MEAN	4.78	4.56	4.56	4.44	4.11	4.22	4.44	4.78	4.22	4.22	4	4.56
MEDIAN	5	5	5	5	4	4	5	5	4	4	4	5
MODE	5	5	5	5	4	4	5	5	4	4	4	5

Quantitative Findings of the Likert Scale

The main implication of this mixed-methods study is that a regular practice of pranayam breath procedures can be beneficial. The most provocative result was the influence of pranayam on the ability to direct attention. Examples included enhancement of focus on a work task, improved interactions, holding a conversation without interruption of extraneous thoughts, a good sense of self, less reactive irritable responses, mindfulness and increased awareness, the state of presence, and peacefulness in everyday life.[7]

Criterial causality and gunas

Tse writes about criteria causality as a way of developing a strong will. This consists of setting up physically realized criteria in advance for behaving in a certain way given certain types of future input. Tse explains that the nervous system can change the physical ground for which a future choice is made. Criterial decoders are setup by changing weights on synapse by either using a rapid or a slow long-term potentiation.[3]

A synapse would be *rajas* dominate due to its movement. It will either change the *sattva* constituent toward *tamas*, or change the *tamas* constituent toward *sattva*. The gunas have a continual interplay. Something has to monitor and regulate the interplay in order for it to remain stable in a specific combination. This would be the mind affected by neuronal activity, pranayam, and other factors, all having a base of light, action, and dullness or inertia.

Tse refers to making arbitrary linkages of neurons that connect input and output of behavior that makes the human mind both abstract and flexible. It allows neurons to alter realization of future physical events in a way that escapes the problem of self-caused mental reactions. This is done by pre-setting the code of a neuronal firing and changing the weights on a synapse.[3]

Participants report behavioral changes

If neurons are changed and strengthened in pranayam practice, it is a way to set or reset the code of the mind for future behavior, self-determination, and free will. Could pre-setting a code arbitrarily with weights on a synapse give the same results as regular pranayam? Both affect the neurons and the synapse.

Findings from my study of subjects who do regular pranayam revealed that behavioral changes occurred for them. Examples follow.

The attorney participant joined his wife who regularly complained about his late arrival to the breakfast table. Instead of his ordinary defensive, reactionary response, he found that pranayam gave him an option. He listened calmly and felt no need to argue. This improved the relationship. He felt that improvement in relations was a collateral benefit of pranayam practice, and this was due to increased ability to direct attention at will.

The business owner had a son as an employee. It was a particularly difficult relationship characterized by angry outbursts. After doing regular pranayam meditation, he found that he approached situations differently. He was a better listener and had patience. He began to model to his son the process that needed to be learned. This style of relating improved his relationship with his son.

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The filmmaker reported an increase in stamina. After morning pranayam practice, he was able to hold the camera steady for long periods without tiring. He was able to interact with many crew-members without losing his attention on the work.

The physician stated an increase in compassion. He was able to grasp a larger understanding of the effects from symptoms on his patients' total life.

The dietitian reported improved interactions with clients. She was able to interview and counsel without arguments. General increase in good feelings about herself was reported.

The engineering manager reported an increased ability to handle arguments in meetings. The pranayam increased for him a clarity and creativity when facilitating decision-making among team members.

Both methods, presetting a code and pranayam practice, provide options for transformation, for behavior change, new choices of relating, one-pointedness, and free will. Each person is unique and has different interests about methodologies. Some will have an effective response by using the pre-setting of code. Others will prefer the self-determination gained from pranayam, and the benefits of regular meditation practice.

Free will and consciousness

Free will is a developed mental ability that operates in the psycho-physiological. Consider the mind as an operation of the senses, the intellect, and the ego.[2] This is a general view of the mind both in western psychology and in ancient Samkhya. Free will is available to everyone, but may not seem possible, especially if the mind is rooted in rumination of thought, and there are behavioral attachments that are obsessive.

Imagine what is taking place in the mental structure of persons with addictions and also post trauma stress disorders.

The senses become overworked, the mind is fighting the senses. The ego is busy fighting the intellect. The senses collect data from the environment and from memory. This data travels to the intellect where it is identified and analyzed. The ego performs the role of acceptance or rejection, and it forms a relationship toward the object of addiction. If the mind feels that it has no choice or options, it submits to the object of addiction. In turn, grasping desires overtake the psycho-physiological.

What is carrying the data, the analysis, and the emotional grasping? It is the breath that carries everything within the psycho-physiological.[5] If the breath is not under ones' control, then it is difficult to have options. One feels more like a victim.

On the other hand, if the prana is directed to unite with the nervous system, an inner strength develops that stabilizes the nerves and the emotions. Grasping falls away. Free will increases, and choice and options become forefront. The mind becomes sattvic, more focused, intelligent, attentive, self-regulated and interested in a lifestyle that leads to wholesome feelings about self and life, a transformation.

Increasingly, science and society recognize awareness as an aspect of mind. This is a jump from the mindset of the Cartesian Legacy that consciousness and mind is identical. Psychological discussions now include a presumed distinction between mind and consciousness. The dictionary of the American Psychological Association defines free will as the power or the capacity of a human being for self-direction. It states that inclinations, dispositions, thoughts, and actions are not determined entirely by forces over which people have no independent directing influence.[8]

Rao states that so far free will has not been proven to be a manifestation of brain processes. Alternative models are warranted. When attention reaches the domain of consciousness, the mind regains its natural spontaneity. The mind is no longer controlled by the bombarding senses and stimuli. The mind begins to exercise free will over cortical processes and the influences from the world of objects. The mind's wanderings come under volitional control.[6]

Neuroscience is basically concerned with understanding cortical processes in relationship to mental functions. When behavior change becomes the aim as in Professor Tse's studies, it opens the opportunity to explore in a new way the relationship between the mind, consciousness, and free will. It also offers a new way to study the Samkhya relationship between the materiality of light, action, dullness, and consciousness.

The Samkhya viewpoint affirms that everything is contained in the cosmic egg in a subtle, unseen dimension. When objects become apparent to the psycho physiological, they are in dense form. This suggests that all materiality including thoughts, dreams, imaginations, and objects become known or manifest to the brain and the body by way of a network of fine nerves. These nerves connect the mind, subtle senses, intellect, and ego. It is the network of nerves that carries the guna configurations. It is through prana that light, action, and dullness or inertia become apparent to the psychological.[6]

In the Indian Encyclopedia on Samkhya, it states that reflective discerning and rational objectivity is operative equally in will, as in cognition. In willing, it is the objective awareness of *what I ought to do*. In cognition, reflective discerning is *what ought to be*.[5]

Powers or capabilities form a kind of willing. Rational objectivity is the awareness of attaining the maximum. Meritorious behavior, knowledge, nonattachment, and power are composed of *sattva* constituents. Demeritorious behavior, ignorance, attachment, and impotence are composed of *tamas* constituents. *Rajas*, or action is required in order to facilitate change, awareness, and transformation. Pranayam is a type of action.[5]

Prana and pranayam

Pranayam is control of the breath and the movement of prana in the mind-body. It is not simply inhalation and exhalation. There is awareness of each inhalation and exhalation, which means breath and mind are working together. Otherwise, exercising or taking a hike each day would bring the benefits of pranayam. The purpose of pranayam is to make the breath smooth and deep, with no pressure or feeling of tightness. Then the mind becomes still.

Pranayam is effective when it is done regularly. Even twenty minutes a day can make a difference. The aim is to stop unnecessary thoughts and increase ability to direct attention. When the nervous system is affected with pranayam, there is an increase in ability to concentrate. Will power too helps to control thought. When pranayam and will power work together, it is a best combination. Fighting with unwanted thoughts can make them become stronger.

If pranayam is done irregularly, the systems of the body have to keep adjusting. It can be upsetting to the nervous and digestive systems. It is best to study pranayam from a knowledgeable teacher. There are basic, simple methods, advanced methods, processes that need guidance, and there are contraindications.

With the development of stillness, thoughts become more manageable. Rumination and the mind jumping from one thing to another, no longer occupies the mind. Awareness, clarity, freedom to choose, and free will naturally occur. The process is a freeing experience.

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Prana in the macrocosm or universe has an effect according to several factors including time of day. At sunrise and sunset there is a surge of prana (air + consciousness) that circulates. It may be that heat from the rising sun increases the circulation of prana. It is a common observation that many things move at sunrise. Flowers open, and species stir. Yoga and natural lifestyles recommend arising early to receive this valuable energy.[1]

Summary and future exploration

Conclusions

It is a novel result to come up with parallel findings between science and ancient knowledge. If both come up with the same or similar findings, this is a breakthrough for knowledge. It is entirely plausible that regular pranayam breath practice affects the nervous system. In turn, this influences the firing of neurons, resetting-code, and giving rise to increased consciousness, free will, and transformation.

Future work

In future studies, it would be interesting to investigate whether the character of the firing neurons differ in a mind characterized by free will and in psycho physiological states of addiction. Other studies could investigate the three-fold operation of light, motion, and dullness in relationship to neuronal circuitry and synapse firing.

Author's biography

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Conflicts of interest

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