

## Molding Emotion While Cognitively Processing Physical and Virtual Realities

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Received: March 05, 2018; Published: April 13, 2018

### Abstract

Emotional arousal is the basic driving force of life and its presence determines the genesis of responses and actions one carries out. Emotional responses occur during sensory-motor contacts with the physical and virtual world. Cognitive processing is the chief method of developing sensory-motor contacts with the real physical world and with the virtual world mentally created. Cognitively molding of emotional arousal is generally carried out positively or negatively, and the sensory-motor contacts are experienced as well as expressed with such emotional effects. The emotional effects created in this manner at the physical and virtual levels serve as the positive or negative motivating influence in each living being. All cognitive processing effects are created at the mental level form the foundation of the virtual world that each person creates and lives with, while altering or creating contacts with physical realities become the second medium for emotional expressions and experiences in life, when responses and actions are emotionally influenced and carried out by each life source. Emotional arousal serves as the life fuel, which could be experienced and expressed through sensory-motor contacts with physical and virtual realities during their processing. Each person builds his or her own physical and virtual worlds of realities, living in both of which are fueled by emotional arousal.

Physical realities are constituted by the presence of entities and their presence and interactions can only be scientifically verified. On the other hand, there may be many experiences occurring in the virtual world of each, which are beyond such scientific verifications, except individuals believe they have experienced such contacts. Both the physical realities and virtual realities create their imageries in the brain, and one may interact with both in the same manner, though one has the option to know that virtual realities are only imaginary. Scientific verification of reality is possible only when reality is physically present. As the brain-mind only experiences virtual realities, using retrieved and created imageries of their physical characteristics, their virtual presence facilitate or control sensory-motor contacts, until they are experientially and/or scientifically established. Thus, multiple neural imageries created in the brain remain as virtual representations of realities, which we call virtual reality, if and until they are physically verified. People in general believe in their own virtual realities and accept them as good as other physical realities. The world of each person gets composed of realities which are physically present, as well as virtually created. They may not make any efforts to understand the physical or scientific evidences of the presence of the realities; instead merely believe in all the realities present as well as those virtually created. As most of the virtual realities are representations of the entities from the physical world with personally designed changes, they may believe even in those virtual experiences which they have not succeeded in physically contacting and verifying. Most of the spiritual ideas are created and conceptualized in this manner and they become part of their virtual world and faith, as they believe that they too form part of realities, which form the foundations of their ideas and faith, even if they cannot directly contact them, unlike several other virtual realities, which form part of real physical world.

**Keywords:** Emotion and cognition; Virtual reality, Neurocognitive processing, Cognitive molding of emotion

### Introduction

Virtual reality is an ancient concept, originally reported as “Maya” in the “Advaita” philosophy of Vedanta school [1-6]. One of the significant meanings assigned to the word and concept of Maya has always been related to illusion, created for resembling the presence of an object, entity, or a response. Maya was originally thought to be created by gods whom human beings accepted as real and believed in them. The presence of Maya was only illusionary, though it may not be known to the individuals, as they accepted it as reality. The belief continues in the same manner among those who accept virtual as real, except we are now fully aware of the presence and the needs of virtual reality, and how the brain creates such virtual imageries, as well as make positive use of them, as in Cyberpsychology, despite the fact of knowing that they are virtual and illusionary. It was earlier difficult to differentiate an illusion from real, and people in general fell for the illusionary effects and erroneously accepted them. They had not known that the virtual merging was only mental process made by mixing varied functions for creating complex and even contradictory ideas, which became paradoxical and even ultraparadoxical. All those events, objects, and ideas creating happiness or sorrow were considered either real or “Maya”. The real entities were indeed beyond all those possibilities, which help provide only illusionary effects in life. There are indeed no physical or scientific dimensions and means for judging such ultimate reality with diverse and opposing qualities, if the contradictions of the reality needs to be physically measured and cognitively judged. Reality being always quantified, it remains a relative measure, even though they are conceptualized to be related or merging with one another. On the other hand, several entities which are mental creations represent merged features and functions at paradoxical and ultraparadoxical levels, and they are only conceptualized and not physically verified. Thus, human mind has created such merged realities of opposite functions and qualities, as such merging help create mixing of functions which man want to be merged together. Most of the concepts of Hindu gods are examples of such merged presentations of ultraparadoxical realities, which are expected to convey some very special meaning of ultimate (ultraparadoxical) reality to the devotees. This is how man has created merged realities which are beyond all scientific limits of verifications. Though ultraparadoxical presence of multiple qualities of realities are not physically possible, they could be conceptualized so at a mental level, and thereby believed to be present at the spiritual level. Thus, black and white, big and small, and all opposite qualities could be thought or conceptualized to be merged, which we call ultraparadoxical level. There are no limitations for merging things at conceptual level, through symbols and ideas, though they may emerge as never possible at the physical levels. Thinking and conceptualizing at symbolic levels have no limitations. It is indeed a different matter of scientific differentiations that there may be many minds which fail to scientifically compare between descriptions as well as illustrations at scientific and spiritual levels, whereas some may merge all known materials at these two levels. Majority of people may want acceptance and merging of these two levels, i.e. the scientific facts and spiritual thoughts. However, the findings at scientific levels could be experimentally verified, whereas the suggestions of the presence of functions at the spiritual level are to be merely believed and accepted. Integration of the two may partly be possible, though they may take divergent routs beyond certain levels.

### Emotional Arousal in Signal Detection and Processing

Enhancement of emotional arousal takes place when new signals are detected in the brain, either from outside or retrieved from within. The signal is generally interpreted within the brain in terms of its significance to the self and the outside world. If the interpretation may give either negative or positive values and effects, and the emotional arousal gets molded or labelled by the same value. Presence of the emotional arousal and its value to the individual may have deep rooted significance. Whenever the individual wants to retrieve the details of the signal and its values to the self, the same emotional arousal is evoked first, which facilitates the retrieval of the related information. If there was no emotional arousal and hence it could not be evoked, the retrieval become difficult or absent, though the individual may be aware of knowing about the signal. Evocation of related emotional arousal is a necessity for the retrieval of related information or name etc.

A person who may practice “Sthita Prajna” learns to avoid the occurrence of emotional arousal whenever new signals are generated from outside or within [7]. Person may make cognitive judgments without generating any emotional arousal and interpret the value of the signal. However, when the same person wants to retrieve the same information (the result of the cognitive judgment), he may not succeed

in retrieving it as it does not evoke a related emotional arousal. Emotional response is therefore an essential need for facilitating retrieval as well as remembrance of a past event or signal. Absence of emotional arousal could therefore induce memory difficulty though it is not a true brain dysfunction. Learning to remain without emotional arousal is a complex and difficult task, and one may succeed only after rigorous mental practice. One may take up the task of training oneself to remain without emotional arousal during specific times in life, though their neurocognitive processing efforts may remain normal. On the other hand, this may also happen because of psychobiological deficits in the genesis of emotional arousal, which could be part of larger disease or inadequacies in processing, which would simultaneously comprise of basic neurocognitive deficits and inadequacies. However, some people may get controlled beneficial effects of emotional arousal through personal practice of meditation and related practices like praying, singing, etc. The cognitive processing of emotional arousal may mold it either in positive or negative manner, reaching mild to extreme levels of molding, which the individual experiences as positive or negative emotions, or a mixture of the two. The positive or negative molding effects could have personally relevant significance to the individual, and such personal significance may further facilitate or debilitate responses and actions of the individual. The associated experiences may become significant life episodes of the individual. When emotional arousal is molded with mere love and devotion and without expectations of personal gains, the emotional state is experienced in immensely sublime, self-inspiring, and transcending manner by the individual. Emotional arousal leading to controlled actions and responses also facilitates long term memory of the experiences and cognitive processing details for the individual. Facilitation of such cognitive molding of emotion may further help, simultaneous facilitation of the emotional arousal as in different forms of meditation, music and dance, which may in turn further enhance the cognitive processing abilities in the brain.

Exercises in neurocognitive processing could be the regular life practice of all while some may create new relationships and ideas, and materialize the same by which new realities are created by the persons. This could become part of a busy and creative life style for them. Their life would obviously be emotionally flooded as the emotional arousal is the strength and the driving force that they employ for all the creative works of relationships and realities based on the relationships. The journey may become distressing and painful, if the emotional arousal gets labelled in negative manner because of failures in work and difficulties in relationship with other individual. One of the major cognitive processing functions is to mold the emotional arousal generated based on the cognitive processing that take place, which would facilitate their retrieval and remembrance at later stages. Absence of emotional arousal triggered by the cueing effects of signals presented, would make the mental retrieval as well as remembrance process difficult and even absent. An emotional arousal linked to what one wants to retrieve or remember is a necessity for its retrieval, without which the individual would find a vacuum while trying to retrieve. Emotional arousal could be associated with positive or negative cognitive interpretations and hence related to similar experiences, which may have a personal significance to the individual. People generally remember the negatively molded experiences and associated pieces of information more easily and more often than positively molded ones. However, one may make efforts in life and adjust cognitive processing styles so that one learns to develop positive emotional arousal more frequently. Those who are engaged in creative works all through their life are also bound to maintain high level of positive emotional arousal. However, if the aim of life is essentially a spiritual achievement, one would also make efforts to maintain emotional arousal in a spiritually molded devotional manner. Devotion is an extraordinary emotional arousal, which may be considered beyond the regular positive or negative cognitive moldings, which may have personally beneficiary or nociceptive effects for the self and others. Devotion is a blissful experience, a mental state, when one believes that he is merging with a higher spiritual force, and learns to become one with that force through expressions of devotion and/or love, which one considered the highest driving force of the universe allowing human beings to take quantum leaps.

### Quantum Leaps

The most intriguing scientific finding in this context has been that of the quantum energy and its movements often described as quantum leaps [8-19], which explain the nature and behaviour of matter at atomic and subatomic levels. The assumption has been that energy or radiation from all sources have uniform structural properties in the form of their particles or waves. How does energy or radiation get integrated into multiple matters is still a matter requiring explanations. Understanding the nature and scope of relativity theory at the energy level, still requires lots more explanations. General theory of relativity and quantum mechanics explain the nature and style of changes or behaviour (?) at matter and energy levels. Many people believe that quantum theory, originally developed by Max Planck [9,10], may also be considered to provide a spiritual level explanation of consciousness as a form of energy. In that sense and context, it may not mean anything else other than a challenging concept, which satisfies eager human expectations. All changes determined as per the relativity theory conditions are deterministic, whereas quantum theory works, and changes occur in quantum leaps, by which forbidden connections may also occur as in 'quantum entanglement'. The human behavioural system is not marked to function only at the deter-

ministic level, as it could also function through quantum leaps, as shown in the changes that occur in a nonlinear manner. The human predictions have been that they could change the world in that manner, from the very past, though they had not known or had not described the deterministic or quantum theories. They had called the simultaneous existence of a higher world, the Parabrahma, which is beyond orderly conceptualizations and disciplined structure present in the world, which they called the "brahma". Parabrahma is conceptualized to have all opposite qualities merged together at the same time and place. As these are conceptual exercises and creations, they are not for any comparison with physical realities at any level. It is indeed a great mental exercise of creation of ideas. Nevertheless, such ideas may often be created even in psychotic states of the mind. It is unique capability that human beings could rationalize (?) and conceptualize such ultraparadoxical possibilities, thousands of years back, and even suggest that the true spectrum of reality not recognized and known, is the ultraparadoxical summation of the physical world, known and created by the human mind. The emotionally inflicted world could burst or function in sacrosanct or blasphemous manner, based on the cognitive molding that shapes the emotional arousal. On the other hand, the Polyvagal behaviour of "flight-fight" triggered by external signals indicates the presence of such leaps occurring without relative cognitive judgments of the input signals. In normal reactions, the cognitive molding helps to give shape to emotional expressions and experiences as per the purpose or objective considered for the actions and the responses, so that the emotional energy could accordingly be channelized. Mind representing virtual realities became a greater personal asset to many individuals, and they learn to live mainly in this world interacting with virtual realities. Errors in cognitive judgments may indeed result in molding emotions wrongly, which could only be prevented when emotional responses are made only after making verified and correct cognitive judgments. The state of mind needed for blocking such inadequate or erroneous cognitive judgments and their emotional reactions has been a mental state of "Sthita Prajna", which one must learn to effortfully maintain, before cognitive judgments and molding of emotional arousal are made.

Sensory-motor imageries, semantic and symbolic concepts are important components created in the brain and form a major part of the foundation of human mind. Cognitive processing is the chief method of creating the mental concepts and sequential and parallel relationships among the components, which are often semantically or symbolically created and expressed by the brain along with sensory-motor imageries created from the signals received from their processing. Great parts of them are represented as reality, with physical properties and qualities, whereas many are imaginary or conceptually endowed attributions and qualities, though the presence of which may be satisfactory and gratifying through virtual reality and reality verifications. The mental entities are recreated as virtual realities whenever one wants them to be present, whereas physical realities must be contacted by moving across space and time. Coming in physical contacts with reality is a sensory-motor experience, whereas working with virtual reality may also contribute to emotional experiences though they are primarily conceptual experiences. There may always be conflicts and non-agreements between virtual realities and physical realities. That the mind could monitor its own detection and other processing methods and thereby create awareness of these creations serve as the immensely important feedback mechanism for developing critical thinking and making corrections, while creating complex logical relationships, and testing them. All of these serve as the knowledge base of the relationships that exist across the multiple events and physical entities of life, and represent changes created in the world and in one's own life. Equally important is the fact of the presence of factors that could contribute to emotional arousal as life force that could be molded in multiple ways by each person or living being. One will not be able to lift even the little finger without emotional arousal or drive and the presence of emotional arousal is a necessity for generation of all movements, decision-making, and implementing all responses and actions. Making physical reality contacts require planned body movements, which could be accomplished only if one is emotionally charged. Presence of emotional arousal serves as the fuel or driving force of life, which human beings are capable of molding positively or negatively for creation of specific experiences and expressions in a blasphemous or sacrosanct manner. The atomic like blasts in life that we may carry out are mentally-conceptualized and actions carried out accordingly, for expressing strong reactions in life, which may be accomplished by a group of people or even a single person. Emotion may be considered the quantum life force, which could be molded as love, serving as the greatest positive force of life, or in any other format that are generally used by people. One could mold it in many other forms for causing differential effects for the self and on others. One could make quantum leaps in life with the presence of strong emotion. Love could take them to greatest and most noble and difficult heights of existence. The multiple systems which human beings created using their driving force have helped them to exceed all the limits of linearity and determinism, and have taken them to immense heights of living and working in multiple Systems they have created for themselves. The Systems, man has created for their living are extraordinary in their functional attributes, and there are no comparable physical systems known to us in the universe, except the repeat changes that recreate the same weather conditions, which have indeed facilitated growth conditions for all living beings. The man-made systems are both linear and nonlinear, as they may affect

specific linear or nonlinear changes in turn at different space and time of their occurrences. The positive leaps have taken them to greater strength and glory, whereas the negative leaps caused inhibition, self-destruction, and destruction of all that were created, which may be followed by opposite effects at a later stage. Emotion molded as love alone has given them strength to act and support actions of all for making goal directed movements in life. No action or response may be automatically initiated by the mere presence of activity in the sensory-motor systems and their action programs, unless the system is endowed with the fuel, which we call emotional arousal. As emotions are cognitively molded, it attains the qualities based on the purposes of actions-responses, facilitating, or inhibiting them. Everyone may cognitively mold and shape own emotional arousal which helps to create individual specific experiences and reactions, which may serve the individual positively or negatively. To start with, painful bodily sensations are identified as negative emotions whereas success in any effort one makes is taken to experience a positive emotion. Pain and cognitive judgments of personal losses could merge into emotional reactions of psychological distress and hurt feelings of failure, when one may engage in aggressive or depressive, but compensatory activities, which may in turn induce further behavioural and psychological problems to the person. The cognitive judgments, one makes may specifically induce corresponding or individually chosen labels to the emotional arousal in the person. The emotional state gets molded by several mutually supportive or addictive cognitive judgments made by one, and the emotional state becomes a corresponding positive or negative state in the individual. The psychophysiological responses of the individual, which form the major experiential components during the emotional arousal form the major identification marks, which mold the drive. Actions and responses are always initiated when the emotional arousal reaches a Critical Level of Potentiation (CLP) [20-22]. The neurogenesis of an action could have started much earlier, when the individual was not aware of the origin of the neurogenesis, and one becomes aware of the initiation of the action only in the final stage when the motor potentials are initiated, when one cannot block the action. One needs to learn to control emotional arousal in the early stage itself, so that a specific action does not get initiated, if the action is not a socially approved one. Living with physical and virtual realities is therefore an essential need of life, and one could get used to both without facing conflicts and difficulties. Learning to use all the components mentally, i.e. carry out various cognitive judgmental processes and accordingly mold own emotion constitute the major strategy of human life.

### Energy Disposition in Emotional Arousal

The most fundamental question has always been what emotion is. Emotion is the life force, which gives the fuel needed for living. As emotion is always recognized as positive or negative, as it is done only after a cognitive molding takes place, emotion has been always taken as a complementary mental state associated with personal feelings, seen behind consciousness, which has been also considered a divine or spiritual life force. Hence its role as a life force was not seen and accepted. Emotion was not considered the source of physical energy needed for the system to be alive and act. Vedic philosophy identified several domains of love and affection which controlled and channelized behaviors (described with nearest meaning in English), viz., Kama (sexual urge, desire), Shringara (romantic love), Maitri (friendship), Bhakti (Devotion), and Atma Prem (love for self). There are also references to vedana and bhava (feelings), dvesa (hatred), raga (love), harsa (joy), bhaya (fear), and soka (sorrow), indicating positive and negative feelings. They believed that there were more precious components like the individual soul and universal spiritual force (Jeevatma and Paramatma), which are believed to control life and the world. Scientifically speaking, they are related to sensory-motor activation and responses that occur during physical and mental intimacy during sensory-motor contacts, closeness or opposite effects with others, devotion, love and satisfaction or opposite effects with the self during achievements or its absence in life. It has always been considered that emotion generated activities lead to pleasure or displeasure depending on the effects produced and recognized during such activities. Soul or consciousness was believed to be beyond the domain of these interactions of mental and physical energy, as the former is considered in contact with a divine power. Love is the strongest emotion advocated for practice with human beings. However, the same Vedic thoughts describes "Sthita Prajna", when emotional arousal is present without being affected by the reactions to the behaviour of other individuals.

There is a section of people in Islam, who considers loving as the most powerful and sublime way of interacting with other human beings. Jesus Christ preached the most extraordinary lesson about emotional reactions that man could suffer even more pain than already in-

flicted, if needed, for the love of others. A realistic approach to the understanding of emotion was constructed in the Buddhist philosophy, where emotion is considered the energy of love one has within, which one could share with or shower on others. Devotion is the strongest emotional arousal, which one may develop within, as described by all religions. As devotion is directed to God, it becomes a strength within, helping the individual in all endeavors of life, provided one accepts that the same God takes care of all others too. The strength of the person is in the quantity of emotional energy or love one has within, which one could share with others and which could control one's behaviour. It shows the strength of the emotion one possesses within, is the true strength of the drive an individual could have for executing multiple actions for goal directed activities in life. However, people generally search for attachment and love from others, which bring about personal happiness. There are also millions of people who mold their emotional arousal aggressively so that they could annihilate others who do not agree with their notions of life and methods of living. The emotional attachment one hopes to build by making use of other's affection or love that one may seek from them, is not as real as the emotional energy one possesses within, which one could share with others. Therefore, one must learn to build the emotional strength within first, and then learn to share it with others in the world. That is how people could store and multiply their emotional strength and use it to accomplish huge tasks in the life system. Application of emotional energy may work in quantum leaps in many tasks for carrying out extraordinary activities for progress and achievement of goals. The emotional arousal could be summed up from many persons, which could become extraordinary and stormy vendetta for achievement. Emotional arousal must be built from birth and cultivated in the early periods of growth itself, then only the drive will be present in the individual for making use of for all goal directed professional and social activities. Any high degree of intellectual capability will not be a substitute for the strength of emotional arousal one may possess. One who has the emotional strength, could easily share it with others, even without receiving any reciprocal feedback. This is indeed when emotional arousal becomes the strength, drive one to accomplish and achieve goals in life. Emotionally sharing responsibilities and assignments with groups is an important capability needed to be developed during developmental stages of a child, which is as important as intellectual development in a growing child. This is indeed different from learning the emotional responses related to fight-flight that one may show to the behaviour of others.

The word "emotion" was first used in French, and it became associated with the modern notions of the word, since the 16<sup>th</sup> century [23-26]. Paul Ekman [27], Ekman and Friesen [27-29] supported the early notion that emotion is a discrete state with physiological basis. The basic state of emotion was considered to constitute anger, disgust, fear, happiness, pain, sadness, and surprise, etc. Emotional responses always meant presence of one of these psychological states with associated physical and behavioural responses. This high degree of emphasis on the mood related changes, blocked the understanding about the primary role of emotion as the driving force in a living system. On the other hand, the motivating effects of an emotional state was always understood, and emotion was always considered a motivating factor necessary for any behavioural performance. Physiological accompaniments in emotional experiences and expressions became a central domain of understanding and investigations, and these effects have been most important for investigations with negative emotions, which have fight-flight components. The need for assessing the emotional responses and their associated psychophysiological changes shifted (?) the importance to knowing more about the negative emotions and their psychobiological effects. Further positive emotions were most often considered a subtheme of spirituality, and the main emphasis has been on the effects of meditation, then on musical performance and dance, etc. Emotional arousal came to be identified as the drive needed for all performances, and the most important theoretical basis connecting drive and performance was first stated by Yerkes and Dodson in 1908 [30]. However, the concept of emotional arousal as a driving force and the understanding of the emotional neurogenesis of actions failed (?) to receive the vital attention that it deserved, as emotion is always molded in different formats by the associated cognitive processes. What one generally observes in the self and others is always the cognitively molded emotion, rather than the unmolded emotional arousal, though everyone is advised to practice "Sthita Prajna" the mental state which helps one monitor such state [31-39]. A cognitive therapist tries to practice such monitoring of adverse effects by altering the cognitive modulation of emotion in patients or even normal subjects. Practice of meditation etc. could also help build such capability within for self-monitoring. A society with adequate social conditioning may indeed help its members to practice life styles and self-controls in positive directions, provided such controls are well established in a growing child.

Other than the theory of relativity, the quantum theory addressed several issues related to the transmission and spread of energy in the universe. Emotion may be considered the best example of live quantum energy, which could take human beings to heights of achievements. Emotion can only be cognitively identified, that too as the effects of the emotional arousal within the body and what the system accomplishes using the drive. Hence it has been identified as pleasure, pain, fear, anger, aggression, agitation, sadness, depression, devotion, love, etc., with each having its own experiential and behavioural expressive features, as learnt and practiced by one. Emotional arousal affects the functional status of the entire psychophysiological systems of the individual. Experience and expressions of emotions become modulated through the cognitive processing methods learned and used by a growing child. Emotional arousal is molded positively or negatively and it is used in all contexts, depending on the needs of the individual to respond or act. Negatively molded emotion may cause discomfort or harm to the self and others, whereas positively molded emotion is needed for all progressive actions, which help in problem solving and achieving success and satisfaction in various endeavors. The first stage of cognitive molding consists of detection of the signals and cognitive judgment of their positive or negative effects on the self and others, which may be followed by deciding strategies for their controls. Cognitive interpretations of the emotional state occur based on the positive, negative, or zero effects generated, and the ability of the self to control such effects and keep oneself away from such a task within. The emotional arousal within may become stronger or weaker as per the adjustment needs and self-adjustments one makes. Emotional arousal and certain flight-fight type of responses may automatically take place in a preattentive processing state of the input signals, without any perception or awareness of reception of the signals in the brain [40-51]. The response is automatically selected based on memory/experience and expressed with accompaniments of severe forms of emotional responses that accompany flight or fight, needed for the biological survival of the system. Therefore, emotional responses may appear almost automatically on the one hand, and on the other hand, it may get modulated from the outcome of cognitive processing. However, the pre-attentive emotional response is a clear indication of the almost automatic neurogenesis of emotional arousal and associated response in a living system. Survival needs may occasionally occur even for human beings during their adjustments with external inputs, when such responses serve to save the individual. That strong responses could be automatically initiated without cognitive processing is a clear indication of the strength and speed of the emotional arousal system. On the other hand, cognitive processing and cognitively controlled initiation of actions could become slow or even nil, when no responses may occur. This is a clear indication of the strength and capability of emotional arousal in initiating certain types of responses, especially when the emotional arousal needed for the initiation and optimum performance in the individual. This is important when emotional arousal reaches Critical Level Potentiation [20] when the responses are automatically triggered, without the control of the subject. As discussed earlier, rise of emotional arousal and its reaching certain critical limit, would automatically initiate motor responses or actions, when the response will not be under the control of the individual. The cortical areas and their cognitive processing functions help carry out the cognitive controls on the emotional arousal, which facilitates its controlled release facilitating execution of the actions in preplanned manner and anticipating specific outcome effects. Everyone must learn this emotional arousal control capability through social conditioning during the developmental stages. Absence or low emotional arousal work as poor drive in the individual which does not facilitate the origin and execution of actions needed for performance. Cognitive controls bring about controlled release of emotional arousal and the related release of actions. Cognitive controls facilitate stepwise release of emotional arousal without which there may be release of emotional arousal in full force leading to uncontrolled and violent actions. Social conditioning is the developmental process which helps the growing child learn such controls. Practices of meditation, music, and dancing, etc. could also bring about such controlling capability in the individual. Their absence may often end in violence in all matters of human contacts. One must learn to maintain the emotional arousal under self-control, which we call cognitive control, without allowing the drive to surpass the critical limits, so that actions would not automatically get initiated without one's knowledge, self-approval, and awareness. Such conditions that lead to automatic and excessive responses against others are common causes of violent behaviour [20] in the society, for some of which individuals face punishments including death penalty in most of the countries. Suggestive effects may play important roles in the exercise of cognitive controls and its release in the individuals [52-54]. On the other hand, if normal perception and cognitive judgment of the input signals are permitted, one could learn to induce only adequate emotional arousal, which could control the neurogenesis of only socially accepted and self-controlled responses and actions. Social conditioning is the social process that trains the individual learn development of cognitive controls on the release of emotional arousal for the release and

initiation of specific actions in controlled manner. Cognitive controls are of multiple types and nature, which facilitate critical processing through sequential and parallel signal processing at the cortical levels.

A word most commonly used to convey the power of emotion is that of drive. Drive is the force one needs for making movements and actions, and hence may be considered equivalent to the “fuel or power of life” that propels the body in various actions or responses. Normally one never gets emotionally tired, though one may get physically tired, as the drive never ceases unless one withdraws from actions because of difficulties or oppositions. Strong emotional experiences and expressions are generally associated with sexual responses, which one is expected to learn to control and express only in socially approved manner. The physical components of sexual excitement and expressions could indeed occur with emotional arousal supported by additional physical excitement. Sexual excitement is caused by the need for physical gratification, which is different from the general emotional arousal that induces all goal directed actions and responses for higher levels of performance and achievements in life. Individuals with high levels of emotional arousal may also have equally high sexual arousal and needs (?) and the higher levels of self-controls they have may however, help regulate such drive in them. The enhancement of emotional arousal may easily be encapsulated in all other bodily and mental activities, encouraging, and intensifying their performance and achievements. The use of physical contacts and relationships are therefore important means to facilitate and maintain emotional experiences and their functional roles in life. Both experience and expressions of love are foremost markers of presence of emotional arousal within an individual. Keeping emotional arousal in an enhanced state may involve encouragement and facilitation of several mind-body responses of choice in a person. These activities may range from pure imaginative and intellectual activities to creative artistic and scientific activities, and engagements in real tasks in life. Socialization is an important method for training each person learn control of own emotional arousal, so that only socially approved responses and actions are carried out by each. As no action or response is initiated without adequate level of emotional arousal, emotionality is an important and vital need of each living being. As love is one of the most cherished, noble, and sublime experience and expression of emotional arousal, which is present even in animals, its absence is an indication of great loss of capability in the being. Absence or decline in the experience of love is another important indication of absence of emotional arousal, which may culminate in the decline and annihilation of the total working system. Reduction and absence of emotion and emotional responses are indeed important signs of losing life strength and drive to live. Emotion is the drive that one could first detect in a new born child, and it may be the last to disappear from the body system before death. The entire developmental stages in a child are employed for training the child learn experiencing and expressing emotions adequately and in controlled manner in various psychosocial situations. Social conditioning is therefore important method for training the child learn to express drive in controlled manner for executing various actions related to eating, exploring, playing around, and engaging in social behaviour. Thus, allowing the child to get excited while handling external objects, with opportunity to play with them, and move-dance around with appreciation from others, get associated with emotional experiential states of joy and satisfaction, whereas opposite states when a child is deprived of external stimulations, challenges, appreciation, and opportunity for the development of personal abilities, may induce states of sadness, loneliness, and loss of drive for explorations. These may be the occasions when a growing child must be trained in cognitive molding of his or her own emotional arousal.

When it comes to emotional experiences and judgments controlled by emotional factors modulated by positive and negative cognitive effects, the changes are seldom linear and deterministically dependent. Value of emotion may help one to make leaps and jumps for supporting those whom one loves or to prevent those whom one oppose. No decisions may be made according to linear principles, when it comes to sharing one’s assets with loved ones. Such non-linear jumps in decisions and actions are common among human beings. However, it may not be a psychological or commercial decision for making profits for the self, that may induce one to make quantum jumps in decision making. The intrinsic value of the decision made may be several times greater than what another decision may have, which propelled one to make such drastic jump in the direction of making a certain decision. Quantum jumps are indeed part of this universe and quantum changes may occur at different levels. Love for another person(s) indeed could be a factor which may induce one make such decisions in life. However, we are not able to make a scientifically valid reason for justifying such jumps and related actions. Love is

indeed such positive energy that drives people respond beyond reasonable limits and carry out extraordinary actions and responses in life. Man has made losses, suffered pain, and even sacrificed themselves for the sake of love of another person or others. As emotion and the emerging love are human experiences and expressions, we may find it unsuitable for application at the quantum level in the physical world, where we like to think of transfer of only some form of physical energy, the radiation of which could be detected by a meter or equipment! Human behaviour could be studied and explained only from nonlinear points of view, who may have unique interactions with other human and living beings and the material world. What man constructs are almost always in quantum leaps and sizes and never merely according to the sizes and basic needs of physical survival.

### Role of Emotion in Remembrance

Retrieval of information is a routine brain function required for recognition, knowing, and remembering experiential events of the personal past. Knowing and recognizing may be purely information and signal (Sensory-motor) oriented, and they may or not have any personal effects in the form of emotional responses associated with them. Normal emotional arousal and wakefulness are needed for recognition of signals from outside, as well as those generated within. Recognition involves matching an external sensory model generated within the primary sensory cortex, with internal models already stored in the brain, and identifying that internal model with which the external model matches [55-58]. On the other hand, remembering past experiences involves the retrieval of the emotional effects left in the individual as well as the recreation of specific sensory-motor imageries, which render remembrance almost as a repeat lively experience. It is definitely likely that all incoming signals and the related information are stored in the brain, but what one could retrieve are generally only those which are of personal importance or interest. Remembrance of actions one participated is possible only when the action has left an emotional effect on the individual. Thus, one may remember the dinner one had several years back on a certain special personal occasion, though one may seldom remember the details of the dinners or meals one has been consuming everyday in the past. Brain Electrical Oscillations Signature (BEOS) profiling is an EEG based technique [59-61], which helps to identify the occurrence of the neurocognitive processes of remembrance taking place, if it is cued by a signal or unit of information presented to a person. Any event, if it has evoked an emotional effect in a person, it may easily be retrieved by the person. We are also familiar with the repression of traumatic experiences, which one fails to retrieve in a normal manner later. The emotional effects are obviously produced by the personally implicated cognitive interpretations of the experience or the event that took place.

### Strength of Emotion

Emotion is indeed a unique type of energy, seen only in living beings. Human beings and animals, or even plants may be considered for the presence of such unique attribution, which has brought in life in each of them. This may explain the nonlinear features of behavioural modes, whether its presence is in animals or human beings, which we need to explain using different principles that determine and configure behaviour. It may even explain the thunderous and stormy effects, on the one hand in their actions, and equally strong devotional and blissful effects, on the other hand, seen in their music and similar art forms in human beings. If we want to call or identify this unique emotional state as consciousness, it is indeed not a problem, if we define it within the domains of emotional arousal, already known to us [57,58,61-64]. Verbal awareness is indeed not the property of consciousness as verbal awareness has been well explained in terms of interaction between the talking brain and the listening brain. Emotional arousal is molded almost permanently and with the strongest force by what we call love. Jesus Christ advised human beings to love one another, as emotion of love has the strongest role to play in human life as love is the strongest driving force man could have, especially when they facilitate love with one another. There are several thousands of people who have devoted their lives to others by giving love, whereas there are still many who spread only negative emotional effects on others. Wherever and whenever love or social obligations are absent, their absence nearly destroy one another, and cognitively they find convenient explanations and even divine justifications for indulging in cruel and destructive actions. Terrorism has become a mass method employed for dealing with people who do not agree with one another in the areas of religious and political relationships. Nonlinearity is considered a part of the universe, seen away from the effects of general relativity theories and presence of only relative sequential effects in the world. The nonlinear effects of emotion are well established out of time and space, as we experience these effects all through our lives.

## Conclusions

Individuals identify emotional expressions in others only when it is behaviorally expressed and cognitively molded. The same may elicit emotional experience when one considers that the behaviour and the expressions from another are directed to the self. Otherwise one may observe and identify the expressions of another as emotional characterized by anger, aggression, fear sadness, etc. Leaving emotion in an unmolded manner was called long back, during the “Vedic times”, a state of Sthita Prajna. Making cognitive judgments and behavioral expressions are important phases of life, which are initiated and deployed by the emotional drive in each living being. The positive or negative values assigned to the drive renders it a stronger force with specific effects and directions. What is truly important about the advice of the Vedic system to everyone is to stay in the state of Sthita Prajna, when one does not automatically emotionally react to the signals from others or cognitively adjudge the signals and react to them. Instead one learns to monitor the signals and understand the meaning with impartial judgments and then decide on the most impartial and objective cognitive appraisal before responding. Astonishingly, the mental world that each one creates is a virtual reality, and it was called by the world of “Maya” or illusion. Individuals who fail to know and adjust with the virtual world or the “world of Maya” face several complex emotional conflicts in their life, as they are unable to differentiate the virtual illusionary world from the real one. Emotion is known to be positive or negative in its valence, which keeps altering according to the contexts of interaction with the external world and the needs of the individual to handle the specific context. Staying in Sthita Prajna state intentionally is a very challenging, intriguing, and complex task for a person, as one must learn to remain away from being influenced by any personal needs, as well as remain without reacting to the needs of others. One must make decisions considering the best interests of the system that one represents and its protection. The challenges in life have served with the highest facilitation for the development and enrichment of multiple intellectual and sensory-motor capabilities, which in turn helped creation of an enormously complex and large world, with the support of emotional drive from within. The intellectual challenges became more demanding and complex than emotional needs, which supported largely a necessity of the need for survival. Emotional support is needed for the development of human relationships, especially for supporting social process changes and new relationships and aspirations. This may require accepting social changes, aspirations, relationships, and styles of living. All these would require moral and emotional supports. Emotional experiences and expressions play the largest roles in the formation of happiness and satisfactions of living. We know what emotion could do in the body and mind, but we have seldom been able to identify what emotion is without cognitively molding it, except knowing that it is a force that propels the body-mind. One may not be alive, if it is absent! The energy utilized as emotion may be a unique manifestation of the quantum energy, which have shaped up in plants, animals, and human beings. There is indeed a need to support it and work for its maintenance and further developments. Supporting this force was earlier done through religious practices, which happened in multiple uniform as the practices have been essentially cognitively shaped as per the convenience and intellectualization of the people involved. Social structures and practices have now increasingly become independent, and there are large sections of people who are coming out of earlier social and religious practices, though they do believe in a higher controlling force and the need to respect and love one another. Supporting emotion within everyone was advised from ancient times, though those practices are almost minimally deployed today, as such emotional effects are generally considered unreliable. The positive and negative emotional states may get reinforced by continuous choice of practices and happenings in the life of a child – individual, strengthening the state of emotional arousal in different styles in each.

There is indeed great need to revise the thoughts about the phenomenon of the state of emotional arousal within each person. Emotional arousal is the energy system of the living organism, without which the system is not functional. Emotional arousal needs to be supported and facilitated for strong development from infancy. Control of emotional arousal through cultural and social methods needs careful consideration and adjustments, so that no one makes efforts to find differences among people based on religion, cast, creed etc. and allow dislike or hate to spread among one another. We should learn to accept emotional arousal as a life force needed in all forms of life, which finds different expressive and experiential styles in human beings, as they have developed an immensely enriched neurocognitive system, by which they could regulate their life force by creating complex processing and actions systems, which could alter reality formats in the universe.

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**Volume 10 Issue 5 May 2018**

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