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Some Exotic Phenomena in the Realm of Human Behavior: Attention Dominated Matter, Waves, Energies and Processes

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Abstract

Objective sciences while deal with closed systems and space-time mediated interactions and processes, the spirituality, on the other hand, deals with pure consciousness. It is the domain of psychic world and processes in whose study the roles of all three in the trio of space, time and consciousness are required and that too, at times, on the comparable footings. Modern science does not have much to say on the details of the phenomenon of consciousness. The Vedic wisdom, on the other hand, although has a lot to say in this regard but only difficulty is to bring this wisdom down to the level of a computable platform. To this effect, a logical and practical framework, based on some undeniable facts about human behavior and experiences, has already been used in several contexts, like in psychophysics, psychomechanics, psychochemistry and in the personality theories. The main aim of this Article is to demonstrate the viability of a philosophical atom-like (patomic) model of a human Being, designed earlier on the basis of Vedic science, in somewhat lesser known and almost dying disciplines of knowledge, like astrology and occult sciences, due to their poor predictive power. Attempts are also made to find somewhat deeper foundations of the Ayurvedic system of medicine and to trace its links with Naturopathy and Teletherapy in transparent terms using the proposed concept of mind waves. In fact, on the lines of brain waves in neuroscience in the bottom-up approach, the concept of mind waves in the top-down approach is introduced here, perhaps for the first time, with a view to understand the same absolute reality. A plausible interpretation of several phenomena, like the K-effect and several others which fall in the domain of occult sciences, is also sought in the present scheme of study.

Keywords: Essences of life, Patomic model, Meditation variable, Dressing rules, Cosmic connections, Epi-fields and mind waves

INTRODUCTION

Lessons from Indian Philosophy

Essences of Life and their Arrangement

Indian philosophy clearly emphasizes on the existence of a human Being in three forms, namely gross (G), micro (\mathcal{M}) and causal or astral (C), whose domination in human behavior and experiences accordingly defines the bodyconscious, mind-conscious and soul-conscious (spiritual) personalities in a society. These three forms, through their working constituents, namely biological body (B) and senses of knowledge and action (SE) of G; mind (\mathcal{M}), intellect (I) and ego (E) of M, and the only soul (SO) (or spirit or the innermost existence) of C, in fact are responsible for the entire gamut of human behavior and experiences [1] in the outer world of physical objects and stimuli (WO). As per philosophy of Srimad Bhagvad-Gita (SMBG) (cf. Verse 7.4) [2], WO is basically described through the five minimal, i.e., panca mahābūtās (PMs) or five cosmic elements, namely earth (E_a), water (W), air (A), fire (F) and ether (E_t). Further note that here while mind stands for the faculty of emotions, intellect for the faculty of reasoning, and ego for the self-sense or the faculty of memory, they all, including the five cosmic elements, B and SE, are considered as inanimate objects in their nascent form. In fact, latter

become functional only in the presence of the soul SO or when they are illuminated by the consciousness as a characteristic of SO (which will be later termed as consciousness energy (or 'cenergy')). Also note that SO, as a part of a bigger source of consciousness, offers the purest version of the latter; otherwise, its polluted version, termed here as the Being (b), '*Jiva*' or 'the life principle' is a highly composite structure of all other 'essences of life' (EOLs) described above. In fact, b is capable of identifying itself with any EOL in which it resides.

Thus, symbolically, b is the union of G, \mathcal{M} and C, viz., b = G U M U C, where G = {WO, B, SE}, M = {M, I, E}, and C = {SO}, or b is a set consisting of all these EOLs as elements, namely b= {WO, B, SE, M, I, E, SO}. The presence of all these EOLs in a human Being defines it as a perfect creation of God; otherwise, Beings with one or more

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missing EOLs do exist in this world but at least must have the EOL, SO, in them. As representations of WO, two more existences of a human Being, namely societal (S) and natural (\mathcal{N}) in addition to G, \mathcal{M} and C, are suggested earlier [3], mainly to analyze the complete personality of a person. As a matter of fact, when a child is born, he is born in a particular social (family) as well as Natural environments and these two factors further contribute to the horizontal growth of his personality. The working of these EOLs (except SO) is further fine-tuned when analyzed through the window of three gunās, namely sattva, rajas, and tamas. This, in turn, further helps in characterizing the personalities.

With regard to the gradation or arrangement of these essences of life, SMBG (cf. Verse 3.42) further suggests their setting in the order of their increasing subtlety, i.e., $WO \rightarrow B \rightarrow SE \rightarrow M \rightarrow I \rightarrow E$, (all in the insentient

domain), \rightarrow SO (in the sentient domain), and also in the space of meditation (but in a directed sense). As a matter of fact, the description and the arrangement of these EOLs in an atom-like form (in analogy with atomic model of matter), termed as 'patomic' (philosophical atom-like) model of human Being, turns out to be a viable tool to account for the entire gamut of fundamental processes pertaining to human behavior and experiences. For further details, we refer to our earlier works [1,4,6]. In particular, a variety of aspects of human behavior have been studied in this framework. For example, the subjects of psychophysics [3], personality development [7,8], psychomechanics [9] and psychochemistry and human interactions [10], have been studied and brought thereby to a computable platform.

In order to understand the role of attention in the working of a human Being with reference to the physical world and associated processes, note that physical theories successfully work for (i) closed systems, (ii) space-time mediated interactions and processes, particularly with reference to the contact and action-at-a-distance (AAD) type forces, (iii) inanimate objects, etc. They badly fail when the living objects (which basically are the open systems, having freewill or will power and dealing particularly with actionat-a-time (AAT)-, and/or action-at-a-distance-time (AADT)-type forces) are involved in the process. Thus, the theories of physics (or for that matter of any other objective science) are inadequate as far as the understanding of human behavior, actions and experiences in totality are concerned. Further, psychosciencs do have explanation of a large number of behavioral phenomena, but mainly for the normal-class of observations. On the other hand, it has been observed that some persons when willingly or unwillingly put under certain abnormal conditions, the behavior of the individual, in both the situations, turns out to be different from the normal one. An explanation of such exotic phenomena, which fall in the domain of parapsychology or of occult sciences still remains far from the logic of modern

science and, if exists, it is full of ambiguity. The fact is that the modern science, even today, is not rich enough to account for the phenomenon of consciousness in general or for AAT- and/or AADT-type forces in its theories, in particular. In such a situation, any attempt in the top-down manner but has bearings on a logical setting of philosophical concepts, like the one that of patomic model of human Being, can be a natural choice.

Following the studies of June G. Bletzer (http://www.worldmysteries.com/sci 4.htm) group, the following 16 classes of exotic phenomena are identified on the basis of some similarities noticed perhaps in their noticeable effects: (i) Telepathy, tele-empathy; (ii) Clairvoyance, Precognition, Premonition; (iii) Remote viewing, Psychometry, Psidetectives; (iv) Dowsing, Earth radiation; (v) Deja Vu, psychic archaeology; (vi) Out-of-body Experiences (OBE), near-death. Experiences (NDE), Dreams, Psychic dreams, Telekinesis-Hallucinations; (vii) Hypnosis, (viii) Psychokinesis, Levitation, Teleportation; (ix) Psychic healing, Influencing plants, Influencing weather; (x) Prophesies, Divination- augury, Oracles; (xi) The pendulum, Reading cards; (xii) Automatic writing, Quiz a board; (xiii) TV Psychics, Communication with animals; (xiv) Trance mediums, Spirit doctors; (xv) Psychic photography, Psychic audio contacts, Haunting, Poltergeists, and (xvi) Reincarnation. Of course, all of them are not independent.

Keeping this huge variety of exotic phenomena in mind, it appears that an objective scientist tries to understand the world of outer EOLs, i.e., of B, SE and WO (which also includes the world of PMs) using his inner EOLs, i.e., M, I and E, whereas an occult scientist exploits the world of inner EOLs, i. e. of M, I, and E in the other person using his outer EOLs, while both remain in the common background of their consciousness fields of SO.

An Overview of Earlier Works

a) Meditation and the intensity of meditation: When a person sits in meditation, the depth or the degree of achieving a focused attention on a thought is characterized by μ . In some sense, μ is a collective representation of the parameters responsible for the roles of inner EOLs, namely m, i, and e corresponding to mind, intellect and ego, in a decision-making process towards the success of a task. Note that μ can never be zero for a live person but it can be infinite for a super enlightened person, i.e., for the yogi-category of persons [3]. For a common man, however, µ can lie between some minimum value and infinity. As a first step towards the quantification, our common experience reveals that the intensity of meditation is (a) inversely proportional to the frequency f of life-breaths, (b) directly (inversely) proportional to the number of positive (negative) thoughts N₊ (N), (c) inversely

proportional to the time duration τ assigned to complete the task, and (d) directly proportional to the capacity C of controlling the mind by an individual from its running into the sense-objects. Symbolically, one can write,

Intensity of meditation or of focused attention

$$(\mu) = \frac{\kappa C N_+}{\tau f N_-} \tag{1}$$

where κ is a constant of proportionality. For further details about the formula (1), we refer to [9].

b) The dressing of PMs and other EOLs with consciousness (Epi-physical matter): As per SMBG (cf. Verse 7.4) both

PMs and EOLs in their nascent version belong to insentient mode of Nature. In order to make the PMs perceptible by EOLs or the EOLs functional, their nascent versions need to be exposed by the cenergy (consciousness) of SO; this converts them into a so-called 'epi-physical' or a 'dressed' entity. For such dressings in increasing orders with consciousness (as an effect of increasing intensity of meditation), a *panci-karan* rule for PMs and a *tri-karan* rule mainly for inner EOLs, are proposed [1,3]. To demonstrate the dressings of *mahābhūta* E_a and inner EOL M, we write here the lowest, second and n-th order dressings through recurrence type relations as

$$\begin{split} \widetilde{E}_{a}^{(1)} = &\frac{1}{2} E_{a} + \frac{1}{8} W + \frac{1}{8} A + \frac{1}{8} F + \frac{1}{8} E_{t} \quad \widetilde{E}_{a}^{(2)} = \frac{1}{2} \widetilde{E}_{a}^{(1)} + \frac{1}{8} \widetilde{W}^{(1)} + \frac{1}{8} \widetilde{A}^{(1)} + \frac{1}{8} \widetilde{F}^{(1)} + \frac{1}{8} \widetilde{E}_{t}^{(1)} \\ , \\ \widetilde{E}_{a}^{(n)} = &\frac{1}{2} \widetilde{E}_{a}^{(n-1)} + \frac{1}{8} \widetilde{W}^{(n-1)} + \frac{1}{8} \widetilde{A}^{(n-1)} + \frac{1}{8} \widetilde{F}^{(n-1)} + \frac{1}{8} \widetilde{E}_{t}^{(n-1)} \quad . \end{split}$$
(2a, b, c)

$$\widetilde{M}^{(1)} = \frac{1}{2}\widetilde{M}^{(0)} + \frac{1}{4}\widetilde{I}^{(0)} + \frac{1}{4}\widetilde{E}^{(0)}, \\ \widetilde{M}^{(2)} = \frac{1}{2}\widetilde{M}^{(1)} + \frac{1}{4}\widetilde{I}^{(1)} + \frac{1}{4}\widetilde{E}^{(1)}, \\ \widetilde{M}^{(n)} = \frac{1}{2}\widetilde{M}^{(n-1)} + \frac{1}{4}\widetilde{I}^{(n-1)} + \frac{1}{4}\widetilde{E}^{(n-1)}, \quad (3a, b, c)$$

and similar expressions for other mahābhūtās and other inner EOLs. Here $\widetilde{M}^{(0)}, \widetilde{I}^{(0)}, \widetilde{E}^{(0)}$ correspond to their respective nascent versions. In the case when n is equal to infinity, the corresponding entity takes a seed-like form and stays in an ocean of consciousness, also termed as 'cosmic consciousness field' and denoted by Φ_{cc} . This concept is while elaborated below, other details on dressing rules etc. are referred to our earlier works [3,11].

The soul as a second quantized (discrete) version c) of a cosmic consciousness field Φ_{cc} : A plausible interpretation of some selective Vedic Sutras [12] and of some Verses in SMBG has led to the concept of cosmic consciousness field in analogy with the quantum fields of modern physics. In this allpervading subtlest possible consciousness field, not only the cosmic elements (paňca mahabhūtās) in their primordial form but also the cosmic versions of mind, intellect and ego, in their seed-like form, are embedded. In fact, the primordial forms of PMs or the seed-like forms of inner EOLs, termed as epifields, are considered as ever present in the allpervading cosmic consciousness field Φ_{cc} , which basically are the infinitely dressed versions of the respective entity with consciousness. The space and time and their mediated four fundamental physical fields are the later offshoots of these epi-fields. Conceptually, a kind of second quantization process in this cosmic consciousness field takes place that gives rise to individual souls as discrete (quantum-

Manuscript Scientific Services Journal of Psychology and Psychiatry Research (JPPR) like) versions, which in turn carry all the features of this subtlest possible fundamental field. These discrete versions of pure consciousness in conjunction with the devolving epi-fields with reference to their varying orders of consciousness, give rise to a variety of polluted quantum-like versions in Φ_{cc} itself. For further details we refer to earlier works [13].

In this work, while the consciousness-carrier-waves will remain in the background, we shall mainly investigate the attention dominated matter, waves, energies and the processes with an eye on their practical applications in the daily life of a common man. To this effect, first we briefly review the phenomenon of consciousness in the next section. In Sect. 3, a discussion of attention dominated matter with reference to idol worship in Indian temples is presented in a scientific spirit. In this context, we investigate and analyze the worship of panca mahābhutās in different cultures and try to find an answer of the question, as how the idol worship in an Indian temple adds to the positive thinking of a devotee? In Sect. 4, we study some attention dominated waves and energies with reference to matter waves in quantum physics, brain waves in neuroscience, and the newly introduced concept of mind waves. The role of mind waves is discussed in Sect.5 with reference to some nonphysical processes and exotic phenomena, like teletherapy and reiki. Attempts are made to give still deeper foundations to the subject of Ayurveda. The concept of dressing of tridosas, namely vāta, pitta and kaph (the socalled the pillars of Ayurveda) with consciousness, is

introduced through a *trikaran* -type rule in this section. Once again, we revisit plausible explanations for some known classes of exotic phenomena in the present scheme of study in Sect. 6. Finally, concluding remarks are made in Sect. 7.

For a quick and ready reference, we list below the symbols and abbreviations used in the text: [AAD = action-at-adistance; AADT = action-at-a-distance-time; AAT = actionat-a-time; b = Being (or *Jiva* or life principle), B = biological body, *C* = causal body, E = ego or self-sense; EOLs = essences of life , FOUs = faculties of understanding, Φ_{cc} = cosmic consciousness field, G=B + SE, *G* = gross body, I = intellect, faculty of decision , M = mind, faculty of emotion, \mathcal{M} = micro-body, mindset function, μ = meditation variable/parameter , PMs = *panca mahābhūtās*, SE = senses of knowledge (perception) and action, SMBG = *Srimad Bhagvad-Gita*, SO = soul or inner-most existence, τ/t = *tanmātrā* (quantum of interaction), WO = worldly objects or outer world of objects offering stimulants].

THE PHENOMENON OF CONSCIOUSNESS

Human Being in Cosmos: 'There is No Such Thing as an Individual'

The Western philosophy by and large revolves around the individual and hence it may be a bit difficult for its followers to digest the phrase stated in the heading. On the other hand, in the Indian context there exists a deep Vedic wisdom that supports the above phrase at the most fundamental level, particularly when the Being b appears as a second quantized (discretized) version of the cosmic consciousness field Φ_{cr}

in which a variety of epi-fields (like that of cosmic mind, intellect and cosmic memory including that of five cosmic elements) are embedded in 'seed-like' forms. Of course, this kind of discretization yields identical field quantum of SO in all Beings, which at a later stage, gets polluted by differently dressed epi-fields of different categories with consciousness (cf. Sect.1.2). Thus, the later role of consciousness in fact makes non-identical Beings or individuals in the Universe. Also, on the basis of the past history of evolution of various EOLs, not only in the spacetime but also in terms of the level of development of the faculty of understanding (as a result of continuous dressing of inner EOLs M, I and E) makes each of us as a distinct individual; otherwise at the level of SO there is no such thing as an individual. Faculty of understanding (FOU) is basically a set, in general of differently dressed or charged inner EOLs with consciousness. Individuality, in fact, starts manifesting when b starts residing in any of E, I, M, SE and B states of the patomic model, while enjoying the same WO. At this stage, it is reminiscent of the following beautiful metaphor as cited by Indian saint and poet Kabir only a few centuries ago.

With regard to the existence and the individuality of a Being in this Universe Saint Kabir emphasizes that it is the same situation as that of a clay pot filled with sea-water and placed again in the water of the same sea. As and when the boundary of the pot is broken, it becomes the same sea-water all over and there is no concept of inside-outside with reference to the pot-boundary. Exactly the same is the case with Beings in this all-pervading field of cosmic consciousness. One can say that the water inside the pot may be the polluted one, then so what? Sea itself is the best purifier and purifies the pollution appropriately according to its nature. Similarly, cosmic consciousness field Φ_{cc} takes care of various evolutes of mental domain (or vāsanās and sanskārās in Sanskrit) of a person through the re-adjustment of epi-fields in terms of their orders of dressing. Further lessons one can have from the above example are the following: (i) There is no such thing as individual at the SO level, but the individuality starts due to distinct orders of dressing of EOLs of each individual; (ii) One can overcome or minimize the dirt of pollution of SO by constant meditation (self-observation) and subsequently by realizing the subtleties of both world and cosmic orders and thereby establishing cosmic connections; (iii) It is only on the basis of past history of evolving EOLs (not only in space-time but also in terms of evolving mindset) that allows one to be considered as individual as long as b resides in any of B, SE, M, I, E states or in their sub-states [10].

Functional Human Being and the EP-Matter

First, we analyze as to how the pure SO gets polluted to give rise to its polluted version, termed as the Being b. In fact, the localized version SO, as a part (or as a second quantized version) of Φ_{cc} , when illuminates (enlightens) both inner and outer EOLs and works through them in the field of WO, makes them functional, in the same way as the flow of electricity through an electrical gadget makes the latter functional. Becoming functional of EOLs means, they start interacting not only among themselves but also with WO. At the first stage, this happens through the grouped version of EOLs, i.e., among \mathcal{M} , G and WO (as the existences S and \mathcal{N} of b are also contained in the WO of the patomic model). At the second stage, b works directly through EOLs E, I, M, SE and B and again in the field of WO. Since each EOL now directly works with reference to the working of the world and cosmic orders, it is successively wrapped with conscious experiences. Further, since the Nature-born three tendencies (gunās) can also separately wrap each EOL, at the third, further subtler stage, b works through these distinctly wrapped EOLs not only with consciousness but also with different gunās. Such is the fine working of the cenergy of SO. As a matter of fact, WO as a physical matter while always existed as nascent, now becomes perceptible to b and also gather dynamic aspect in space-time, particularly after being illuminated by the cenergy of SO. Such a physical matter, in general, is now termed as the 'epiphysical' (EP) matter.

In view of above considerations, one can now note the following characteristics of b: (i) A justification to call it as 'Jiva' or the life principle in Vedic wisdom. Truly speaking, b is synonym of life principle in the sense that it has roots in SO on the one hand, and it is a composite unit interacting constantly with WO towards its own survival, on the other. Thus, b acts as a consumer of cenergy from the source SO on the one hand, and as a supplier of cenergy to the sink WO, on the other. (ii) As far as the types of EP-matter are concerned it has two distinct categories; first, when cenergy illuminates WO and makes it perceptible by a 'composite' as well as 'fragmented' b, and second, when the same cenergy illuminates each EOL, B, SE, M, I, and E (during meditation) and separately enables them to perceive and realize the same WO by the localized version SO. This latter role of cenergy makes the biological body B of the Being as a special, to be termed it as 'special epi-physical (SEP) matter' since the source of cenergy is also contained in it. For most of the time, here in this Article, we shall deal with a focused version of consciousness.

Focused Cenergy in the Form of Meditation/Attention

It may be mentioned that the three words 'meditation', 'attention' and 'concentration' though related to the focusing of cenergy, yet are not synonym of each other at deeper level. The word 'meditation' while sounds as the inward (towards SO) focusing of cenergy, the word 'concentration' refers to its outward (towards WO) focusing in the patomic model. In fact, both these processes, in general, do not proceed unless they are initiated by another focused form of cenergy, i.e., 'attention'. Thus, attention drags cenergy on both ways inward and outward but mostly remains attached with meditation as it has often to explore the intangible world. Moreover, the attention loaded focusing of cenergy defines the intensity of meditation. In practical and computable terms, the intensity of the focused cenergy through meditation is expressed by the meditation variable μ (cf. eqn. (1)). Its role in the process of realization is while elaborated in Figure 1, a detailed discussion can be found in earlier works [1,3]. Further remarks about the process of meditation are as under:

- i. Meditation basically is the focusing of cenergy by adjusting the dynamics of inner EOLs (namely of M, I and E). This is done mainly by regulating the traffic of thoughts on their two thresholds one from G to \mathcal{M} , i.e., by controlling the mind and senses from involvement in their respective sense objects and second from \mathcal{M} to *C* by suppressing the subtle form of ego E. While it is relatively easier to cross the first threshold with little practice, it is equally or more difficult for the practitioner to cross the second threshold even with concerted efforts.
- As μ increases the capacity of resolving and realizing the subtlety of gross features of an external object belonging to WO decreases, i.e., a practitioner

follows the sequence, WO $\rightarrow G \rightarrow M \rightarrow C$ (cf. Figure 1).

- iii. Since cenergy is synonym of life (or consciousness) each of us is born with some minimum μ, say μ_{min}, and so is the case with the level of development of one's FOUs with reference to the maintenance of world and cosmic orders.
- iv. Meditation is capable of revealing/projecting (may be for a few experts or super-experts) the past and future incidents of a person not only pertaining to his present life but also of his past and future life-spans by way of establishing cosmic connections in true sense.
- v. As far as the recent studies in brain sciences are concerned, scientists have yet to understand the holograms of conscious thoughts formed as a result of synchronous firing of electric signals by brain neurons in large number. In fact, the role of cosmic connections in these studies is yet to be investigated.
- vi. Soft and hard processes: Depending upon whether the attention softly or hardly (or, lightly or heavily) loads a process, this accordingly divides the processes into 'soft' and 'hard' categories. For example, for the functional outer EOLs, SE and B, the 'perception' of the sense-objects of the outer world is somewhat easier even with limited, attention-dominated concentration. On the other hand, for the process of 'learning' or 'realizing' by inner EOLs, M, I and E, even the highly intense or attention-dominated meditation sometimes becomes insufficient. (No doubt, the 'realization' takes place in the C-domain but its path is through \mathcal{M} -domain and that too after an intense initiation on the part of EOLs M, I and E). Further, the perception process while knowingly or unknowingly goes on in a natural way, the 'learning' / 'realization' process needs some extra efforts in terms of attention. To visualize this divide of 'soft' and 'hard' processes look at the Figure 1. As argued earlier [1] there is a 'cross-over' of three continuous lines at $\mu = \mu_c$ corresponding to some critical dressings of M, I and E with consciousness. This critical order of dressing depends on the loading of attention on meditation and initial interactions (for $\mu < \mu_c$) between *G* and *M* and final interactions (for $\mu > \mu_c$) between \mathcal{M} and Cthrough different *tanmātrās*. Thus, for $\mu < \mu_c$, the processes are termed as soft whereas they are 'hard' for $\mu > \mu_c$. Perhaps for similar reasons 'soft' and 'hard' disciplines are defined in the education curriculum.

For $\mu < \mu_c$, note that there is yet another perception process (soft or hard) adopted by an objective scientist. In this case, no doubt the process is loaded with serious attention but without accounting for the consciousness in their studies.

The role of consciousness is generally neglected or not accounted for while framing the laws/theories or modeling the phenomenon as such. On the other hand, the results of perception passed to the brain through senses and nerves for the purposes of their further analysis but by conscious braincells (or brain neurons) as the brain cells of a dead body cannot work. Perhaps for such reasons the objective sciences provide only partial truth about Nature. Further, note that the consciousness-carrier-waves loaded mildly with attention and corresponding to $\mu < \mu_c$, in general, account only for body-conscious personalities whereas those with heavily loaded attention and corresponding to $\mu > \mu_c$ describe the soul-conscious personalities.

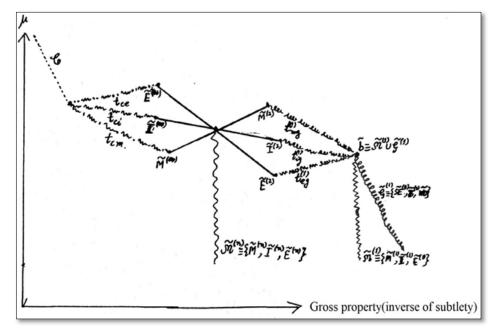


Figure 1. Interactions inside the human Being expressed through the exchange of different sets of tanmātrās (quanta of interaction, tij) during the meditation. Note that distinct sets correspond to different transitions, first from G to \mathcal{M} (for $\mu < \mu c$) and then from \mathcal{M} to C (for $\mu > \mu c$) domains.

ATTENTION DOMINATED MATTER AND WORSHIP OF AN IDOL

Worship of Pañca Mahābhūtās in Different Cultures

A common man is born with some minimum or finite potency of both inner and outer EOLs but with a degree of freedom to enhance this potency to any extent if he so desires or the situation demands. Due to this finite potency, at times, it becomes difficult for him to digest the bewildering scenarios of Nature that appear in different forms and often damages/imbalances the natural resources of his survival. While man becomes helpless during these natural calamities, a genuine fear is generated in his mind with regard to the question of his survival. Such unexpected damages (e.g., due to earthquakes, floods and cyclone, storm, torpedo and tornado, forest and ocean fires, etc.) are possible due to all five cosmic elements (PMs) which separately or jointly carry infinite potency to damage the things beyond one's imagination. As a result, one starts worshipping these PMs or their Ultimate Controller for blessings. This Ultimate Controller or Super Power in different cultures is termed by different names. (After all, there has to be a muscle man (power) to look after or to take care of the colony consisting of both Beings and nonBeings). In spite that this Super Power works at his own terms, conditions and whims, the persons with some selective personality start worshipping Him in this very intangible form, whereas some others personify this power in their own way. There are still some (but in large number) who do not bother about this un-manifest but worship it in a convenient manifest form or directly in the form of PMs, in the same way as one cannot see the expert person working behind the curtain of puppet show but could see only the actions of the puppets on the front. Invariably some or all five cosmic elements, namely earth, water, air, fire and ether are worshipped almost in all ancient religions and cultures of the world.

Even in modern times, the PMs in one physical form or the other are worshipped particularly in those religions which give relatively more weightage to rituals and methods of worship as compared to the philosophy or the knowledgecomponent present in them. In fact, it is the quality of the knowledge (mainly the spiritual knowledge) content in a religion that makes the religion sustainable; otherwise, the rituals and related methodology of worship are the function of space, time and circumstances; they are subject to change and as such do not survive very long. The latter, however also survive longer if they have some scientific basis or logic

in them; otherwise, their philosophical meanings can always be traced, mainly to console and convince the intellectual component of the followers. As far as the common man is concerned, he is often guided by the wisdom of old persons or by the priest of the place of worship in this regard. Although all the five cosmic elements collectively play a role in the survival of Being and non-Beings not only on this planet but all across the universe (by considering 'earth' as standing for all solids, 'water' as for all liquids, 'air' as for all gases, 'fire' as for all plasmas, and 'ether' as a container of the remaining four elements), still some plausible reasons for worshipping them are worth highlighting here as follows: (i)Earth is the main basis of vegetation and plant kingdom; (ii) water and air as main causes of plantation, (iii) fire (sun) another important cause for (i) and (ii), and (iv) ether is main cause for providing space for (i)-(iv).

Idol Worship in Different Cultures as a First Step Towards Spirituality

In SMBG, the Lord emphasizes on the worship with love through the Verse,

Tesām satatayuktānām bhajatām pritipūrvakam,

Dadāni buddhiyogam tam yena māmupayānti te. (SMBG:10.10) (4)

Meaning thereby, "On those ever united through meditation with Me and worshipping Me with love, I confer that yoga of wisdom by which they come to Me". Clearly, the Lord not only prescribes the method of worship but accepts those who worship Him with love, i.e., they follow an attention dominated process of worshipping and not just a mechanical one. Whether this worship is of an embodied personality in the idol (*Bhakti* Yoga) or just through meditation (*Jñāna* Yoga) on an intangible entity, in either case it has to be with love (or with an attention dominated process). The Lord designates this as '*Buddhi* Yoga' (or the yoga of wisdom), i.e., an element of love and experience need to be added to the process under study.

A person may be a believer or a religious one but may not be spiritual. To become spiritual or to remain in the spiritual zone forever, it requires a lot of efforts and practice on the part of aspirant. On the other hand, if one resorts to be an idol worshipper in true sense than this, one can say, is his first step towards the spirituality. The following dialogue, in fact, emphasizes the importance of worship in a temple: In Indian context, a non-believer asked a believer the following question, "once you say that God is everywhere, then why there are so many temples all around to adore Him?" The believer then replies, "you know that air is everywhere, but still, one feels it's obvious existence only under a fan if he so desires". We take this conversation as a guide to elaborate the reason, methodology and the spirit behind the idol worship in an Indian temple, if constructed as per scriptural instructions. Moreover, the worship of an idol in a temple is

mainly for realization of the (un-manifest) Supreme within and that too with the help of the manifest outside.

Depending upon whether the devotee's mindset is worldconscious, body-conscious, mind-conscious or soulconscious (spiritual), his desires will accordingly vary over a wide spectrum ranging from WO to SO in the patomic model in the sequence $\mathcal{N} \to \mathcal{S} \to \mathcal{G} \to \mathcal{M} \to \mathcal{C}$ in terms of his existences. In the same order the devotee will expect the blessings from deity (idol) for his wellbeing and happiness, viz., respectively in terms of material gain, health-fitness, mental peace, eternal happiness, or salvation, irrespective of the type of idol or deity, particularly at the end-point of his contemplation. In the beginning one needs idol, but slowly and slowly one starts having cosmic connections and at the end, one does not need any idol or external physical agency including a master. In the light of five existences of a human Being the possible five steps, which one has to climb up during the meditation as a part of worship to reach the Primal Deity from a deity, are as follows:

- i. Thinking of the location, material, beauty, type and environment of the temple and idol (mainly in the zone of WO and G)
- ii. Type of the personality and the history pertaining to and embodied in the idol (mainly in the zones of G and \mathcal{M})
- iii. Connecting the embodied virtues and the past character of the idol with the existing world and society (mainly in the zones of \mathcal{N} and S)
- iv. Seeking inspiration by way of connecting himself with the personality in the idol and subsequently realizing the embodied virtues and character in the idol as parts of cosmic order i.e., via cosmic connections (mainly in the zones of S and \mathcal{N})
- v. Thinking beyond Nature and society and residing in the field of cosmic consciousness Φ_{cc} (in the zones of all five existences present in their seed-like form in Φ_{cc}).

Such is the purpose of worship in true sense that can be fulfilled anywhere and anytime but preferably in a temple, \bar{as} 'ram or in solitude. If temple (or for that matter the sacred place of worship of any religion) is constructed keeping scientific spirit in mind and so is the case with the installation of an idol in it, meaning thereby as per Vedic scriptures, then it becomes an asset for the devotee to attain the Ultimate rather speedily, of course only after concerted efforts and contemplation.

Worshipping in an Indian Temple: Inculcation of Positive Energy in a Devotee

Positive and negative energies here are defined in the context of preparing a mindset and accordingly thinking and performing all actions towards the maintenance and

sustainability of both world and cosmic orders. In other words, the 'positive energy' means to develop the potency and to learn the art of accepting and respecting the maintenance and sustainability of both the orders. Like the down-stream flow, the negativity is natural due to the involvement of the Being in WO and thereby having a craze for the sense-objects. On the other hand, some efforts are needed to attain the positivity, like swimming against the stream-flow. While this positivity is a must in the spiritual path, the worship of any kind, in fact, should be aimed at gaining such positive energy. While the lap of Nature in some sense provides a God-made environment for this purpose, the temples or other sacred places of worship, on the other hand, do offer a man-made environment. These are only the humans who can think of positive/negative energies; otherwise, non-humans do not have any temple or instinct to worship even though they also share the same PMs for their survival. Somehow God has made their lifecycle in such a way that their existence does not affect much the sustainability of world and cosmic orders.

According to Vedic wisdom the sole purpose of worship is to activate and excite the seven $cakr\bar{a}s$ (plexus or cluster of nerves) assumed to be situated all along the spinal cord (vertebrate) and the same are responsible for a sequential spiritual evolution of a person. What a great foresightedness our Vedic Seers had that they designed the construction of temples keeping all such realities of life in mind. Not only this, there is also an element of scientific truth in this ageold wisdom.

Modern brain science makes it clear that any information (concerning the biological body, like feelings of pleasure and pain, hot and cold, etc.) are passed to the brain through a process, called 'nerve impulse propagation'. The neurons present in the brain-cells are supposed to recognize that information (translated now into feeling, thinking, memory, etc.) by way of firing some particular type of electric/magnetic signals in synchronization. The latter phenomenon produces distinct patterns (i.e., (3+1)dimensional holograms) in brain space corresponding to given information, and the brain as a whole then recognizes these patterns. Obviously, only a conscious brain can do this job and not that of a dead person. Knowing very well that the consciousness of the person is important in this process, the brain scientists are still afraid of bringing in the role of consciousness in their analysis. Now the question is as to how to modify the frequency of firing of electric/magnetic signals by neurons so as to have a feel for positive energy through actions. One possible way is by visiting temples, if they are designed in accordance with Vedic prescriptions. In what follows, we briefly outline and analyze as to how the temple-site is identified, how the idols are installed in it, or how a devotee has to perform, etc.

i. It is known that the earth has magnetism and the magnetic lines of forces emerge from the

geomagnetic north (geographical south) pole and merge into the geomagnetic south (geographical north) pole all along the globe. While the vertical (perpendicular to the earth surface) component of this field dominates over the pole region, the horizontal (parallel to the earth surface) component dominates over the equatorial region and note that the Indian continent lies close to the equatorial region.

- ii. With regard to the choice of temple-site, the geometry of the land-piece has to be such that the maximum of the earth's magnetic flux, i.e., geomagnetic north-south ward lines of forces, must passes through it.
- iii. While these prescriptions are followed, it may be mentioned that at the time of construction of a temple and the installation of the main idol a large quantity of copper (in the form of blocks, slabs and sheets) is placed little deep into the earth and just beneath the position of the main idol.
- iv. Once such preparations are done, then the desired idol, made-up generally of a specific metal or of stone, is installed at the designated place and after so many rituals performed with the recitation of varieties of Vedic *mantrās*. (A *mantra* basically is a sacred syllable that needs to be recited with its meaning as originating from the core of the heart). The important point to be noted here is that the idol has to face eastward or towards the eastern gate of the temple.
- v. Among other supplementary planning's, one needs to take care of, in constructing a temple are: (a) to suspend heavy ring-bells in the main hall of prayer in such a way that they remain just above the head of the devotee, and (b) a round place for free movement of the devotee all around the idol needs to be provided.
- vi. The devotees by and large are allowed to enter from the eastern-gate and thus facing the idol right from the entry point and also travelling relatively a longer distance to reach the idol. In what follows, we discuss as how the visit of such a planned temple can enhance the positive thinking of a devotee. Note that, since the magnetic axis and the geographical axis of rotation of earth are subtending an angle of about 11^0 at the center, this causes an error in defining the eastward direction for the temple gate, etc.

How the Visit to an Indian Temple Can Enhance Positive Thinking of a Devotee?

As mentioned before, the main aim of visiting a temple is to activate and stimulate seven $cakr\bar{a}$ s to attain the highest in the path of spirituality. A common man, however, visits the temple to fulfill his worldly desires or at the most to seek

blessings of the Lord towards his mental peace and happiness. Here we discuss as to how this is possible in scientific terms keeping in mind the above planned construction of an Indian temple. For this purpose, note that a person (devotee) carries electric/magnetic charges in hisself, howsoever small they may be, say of the order of microcoulomb (cf. ballistic galvanometer experiment). Further, note that as soon as a devotee decides to visit a temple a certain degree of positivity enters in him and brain-neurons start firing electric signals to form a pattern corresponding to this thought. Such an object when enters the temple from eastern gate and starts moving towards the idol, he becomes the source of disturbance in the geomagnetic field lines coming from his left. As a result, there is a change in the flux that causes to produce an induced e.m.f. (electromagnetic force) in the copper sheets, blocks and slabs placed underneath the idol, howsoever small the induced field it may be.

On the other hand, note that in addition to this, there is a generation of eddy currents in the copper blocks and sheets already lying permanently underneath the idol in the same geomagnetic field of about 0.3 Gauss. This also gives rise to an additional (rather little stronger) induced e.m.f. or magnetic field as a result of the eddy currents produced in copper blocks almost on a permanent basis. In fact, the radiation of that induced magnetic field due to eddy currents causes a distinct environment around and in the premises of the temple, which in turn, also affects the frequency of firing of electric signals by brain-neurons of the devotee and hence affects his thinking or the thought process in general.

Other factors which also contribute to this kind of enhancement of positivity in the thought process are also present there in the temple. For example, (a) when the devotee rings the ring-bell placed just above his head in the main hall and in front of the idol, then its sound helps in unifying the left and right parts of the brain by way of creating a kind of resonance between the two parts for a few seconds. This makes the brain relatively more sensitive to receive the induced flux or to activate the firing of electric/magnetic signals. (b) When the devotee takes rounds around the idol in the designated path, it also causes a change in the magnetic flux but of different nature. This is mainly because the devotee now moves in the resultant of the two magnetic fields, namely the geomagnetic field and the induced magnetic field due to eddy currents (which at times can be more intense, depending upon the quantity of copper placed underneath and the orientation of the copper slabs or sheets so placed). (c) Not only this, the trajectory a devotee now traverses by moving himself in the clock-wise direction (with respect to the idol) turns out to be a stable spiral in the language of nonlinear mathematics (cf. Chapter 6 in [14]), meaning thereby the trajectory has the tendency to merge into the center, i.e., in the idol. (In fact, the attention of the devotee is now focused possibly maximum on the qualities, virtues and glories of the embodied

personality in the idol. In this way, the gravity energy also helps in establishing the faith in the idol). Thus, this rounding about the idol further modifies the frequency of firing of electric signals by brain-neurons and thereby strengthening and improving the resolution of the desired ideas in the thought process of the devotee.

ATTENTION DOMINATED WAVES AND ENERGIES

Any disturbance in a medium causes the formation of waves in the latter and wherever there is a wave it carries certain type of energy associated with it and the same helps in its propagation. In general, the disturbance can also be space and/or time dependent. If the medium as such does not contribute, then the energy associated with the wave is also a measure of the intensity of disturbance. There may be exceptions, but normally the disturbing agent has to be hard enough (in terms of rigidity) or of sufficient intensity (in terms of the applied force) so as to produce a wave in the given medium. A wave is basically characterized by its amplitude (a), frequency (v), velocity (v) and phase (ϕ) with some simple relations among them, viz. v = (1/T), (T is time period); $v = (v/\lambda)$, (λ is wavelength) for 'linear' phenomenon (here linearity is in terms of the nature of the corresponding differential equation for the disturbance); otherwise for the 'nonlinear' case such relations turn out to be very complicated.

As far as the classification of waves is concerned scientists and engineers have identified only a few of them for their use and studies; otherwise for a person sitting along a seashore (i.e., close to an infinite medium and with all sorts of disturbances) there are infinitely many varieties of waves starting from longitudinal, transverse to solitary waves, etc. Most of them, in fact, correspond to nonlinear phenomena in Nature.

Physical and Nonphysical Communication Vis-A-Vis Brain and 'Mind' Waves

At elementary level while waves are classified as longitudinal and transverse, at the advance level, however, they are classified as mechanical, electromagnetic and matter waves. Further, mechanical waves travel through terrestrial media in the form of solid, liquid and gases; the discovery of electromagnetic waves is one of the wonders of modern science, not only for communication in space and universe but also as a tool for other modern researches like the LASER technology, etc. The matter waves, on the other hand, have dragged the mind of scientists into the philosophical domain by identifying the fact that the matter at micro-level has dual nature, i.e., it can behave as a wave and also as a matter particle with reference, of course, to a detector that could be an instrument or a conscious observer. In case of conscious observer, the role of consciousness is tactfully avoided by advancing a probabilistic interpretation to the quantum wave function Ψ . This is one of the

interpretations of modern quantum mechanics and found to work successfully in a variety of microscopic systems, starting from molecules to quarks. As far as the communication between and among objects is concerned, all three mechanical, electromagnetic and matter waves have been in use, particularly after the advent of quantum computers.

In the preceding section, we have seen that as to how the specially designed Indian temples can activate the firing frequency of electric impulses by brain neurons which, in turn, can affect the formation of synchronized patterns in the brain corresponding to a particular sensation or mental process. An important alternative to this kind of activation of brain-cells is through an intense meditation or by way of creating highly intense or attention-dominated brain waves/energies. This is possible by way of focusing more and more consciousness towards the production of the socalled 'mind' waves as a result of conversion of brain physical energy into a non-physical (cenergy) one.

What brain science has to tell about the 'mind' waves: It may be mentioned that an individual's behavior, emotions and thoughts are the result of communication among brain neurons within our brain in the varying frequency of electric impulses, the so-called 'brain' waves. Further, all brain waves are produced by synchronized electric signals fired by masses of neurons communicating with each other. The brain waves occur at various frequencies (in Hz or cycle per second) and the brain scientists have classified them into five EEG (electro-encephalogram) bands, namely delta, theta, alpha, beta and gamma characterized by the frequency ranges as follows: Delta (1-3Hz): slowest but with highest amplitude, experienced when we are asleep. In general, different levels of awareness (attention) are associated with dominant brain wave states; Theta (4-7 Hz): represents a day dreamy state of mind associated with mental inefficiency, activity is at very slow levels - a very relaxed state between the waking and sleep; Alpha (8-12 Hz): slower but with larger amplitude, associated normally with relaxation, represents brain shifting into an idling gear, waiting to respond when needed; Beta (13-38 Hz): small, faster, associated with a state of mental/intellectual activity; Gamma (39-42 Hz): they are fastest, most subtle brain waves, Gamma rhythms module and relate to perception and consciousness.

Each of us however always has some degree of these different brain-wave-bands present in different parts of the brain. Delta brain wave also occur when certain areas of brain go 'off-line'. Important point to be noted here is that the brain waves learn to rework connections with positive re-enforcement through a neuronal-feedback mechanism, i.e., there is a possibility of enhancing the frequency range of gamma synchronous activity that is found to be a window for the domain of consciousness or for mind waves. While there is an experimental support to this activity of brain cells [15,16], theoretical studies on conscious intents and brain functioning have also been carried out [17,18]. With regard to the gamma - synchronous-activity frequency of about 40 Hz, we recall the Chevreul hand-held pendulum experiment [19]. In this experiment, if one finds a frequency difference of more than 40 Hz in the two suggested situations, then naturally this will be attributed to a new type of synchronous activity or possibly open a window for 'mind waves', whose explanation will be found in the exchange of rather more subtle tanmātrās (cf. Figure 1) between brain-cells rather than through brain neurons firing electric signals. Recall that a tanmātrā in Vedic science is the subtlest quantum of interaction between a sense and its associated mahābhūta (cf. Table 1), and possibly here it will be a case of soundether correspondence (cf. entry 3 in Table 1).

Mind Waves in Φ_{cc} And Cosmic Connections of an Individual Human Being

Here the word 'mind' needs to be understood as micro-body \mathcal{M} of a human Being consisting of three faculties, namely that of emotions, thinking and memory in the increasing order of its subtlety. Interestingly, these three intents are also the objects of study of brain scientists through brain-cells. We shall find that the mind waves in general are going to be little more complicated objects when loaded with so much information. As discussed above, the gamma synchronous activity of brain-cells at about 40 Hz indicates a window for the consciousness studies. Now, the question arises as to how to broaden this window upward in the frequency range or, as to how to peep deep into this window for any further clue about the consciousness. Of course, intense meditation is one such method, foresighted by Vedic seers, to peep into this murky path of consciousness and to go beyond the spatiotemporal world. As discussed in Sect. 2, the infinitely dressed versions not only of EOLs M, I and E but also of cosmic elements Ea, W, A, F and Et with consciousness (i.e., in their seed-like forms) constitute distinct sectors of epifields in the same cosmic consciousness field Φ_{cc} . While the infinite dressing of these entities with consciousness qualifies them to become a part of Φ_{cc} , their partially dressed versions are also present in Φ_{cc} at every instant and everywhere. Recall that ϕ_{cc} is the purest and subtlest version of the all-pervading consciousness continuum (field). It is the seed of cosmic desire ($\widetilde{E}^{(\infty)}$) that creates a disturbance in Φ_{cc} and the same propagates in the already quiet ϕ_{cc} without any concept of velocity or even the concept of any type of infinity in it. When this disturbance passes through various sectors of epi-fields present in their seed-like forms, the latter upload the concerned information with this disturbance (or on the carrier wave of pure consciousness, denoted by '(CCW)'). The agencies which upload the information (or convert the carrier wave into a heavily

modulated wave) in the order of their increasing subtlety are,

S. No	Conventional physics & other disciplines	Possible sense & sense- object associated	Cosmic element(s) associated	Associated exotic phenomenon	Essences (charge) loaded on associated mind wave
1	Heat	Skin-touch	Air	Tele therapy	(CCW) loaded with e, i, m, a and e_t
2	Optics	Eyes-light	Fire	Remote viewing	(CCW) loaded with e_i i, m, f and e_t
3	Acoustics	Ear-sound	Ether	Unexplained acoustics	(CCW) loaded with e , i , m and e_t
4	Magnetism	Human-aura		K-effect, as an example	Mind-mind interact. through all essences
5	Geology, Geography & Environment	Nose-smell	Earth	Remote sensing	(CCW) loaded with e, i, m, e_t and e_a
6	Water-management & Hydrology	Tongue-taste	Water	Hydro-therapy	(CCW) loaded with e, i, m and w
7	Psychology	Mind, intellect, ego experiences	Mind waves	Telepathy, tele- empathy	(CCW) loaded with all essences

Table 1. A correspondence is shown here between the conventional physics disciplines including other modern subjects and the *panca mahābhūtās* of Vedic science. This is carried out in terms of *tanmātrās* (sense-objects) and the associated perceptions by human senses of knowledge. Necessary essences to be loaded on a mind wave in this context are also indicated.

the sectors Φ_{CEL} , Φ_{CM} , Φ_{CI} , Φ_{CE} (or more precisely $E_a \rightarrow W \rightarrow A \rightarrow F \rightarrow E_t \rightarrow M \rightarrow I \rightarrow E$). Even the nature of modulation and its varieties are controlled by the cosmic desire. Such a highly-multifold-modulated carrier wave is termed here as 'mind' wave. Other specific characteristics of this wave are:

- i. There is no question of velocity of these waves in spatiotemporal terms.
- ii. Since epi-fields in their seed-like or partially dressed forms are ever present in Φ_{cc} , there are infinitely many possibilities and ways of modulation of the carrier (pure consciousness) wave.
- iii. The process of dressing of EOLs and cosmic elements with consciousness as a result of meditation at individual level and that of unwrapping of consciousness of corresponding epi-fields during the propagation of the disturbance across these fields in Φ_{cc} , are the equivalent and similar processes and

their matching at a certain stage in Φ_{cc} is bound to be there. This defines the beginning of realization of cosmic connections.

- iv. Once cosmic connections are established by a practitioner, the latter becomes qualified to participate in several attention-dominated processes like reiki, telepathy, etc. at individual level.
- v. In electronics, the phenomena of amplitude and frequency modulations are well known. Here in the case of mind waves, however, the cosmic (eight-fold) modulation of the carrier wave is highly complicated as both the amplitude and the frequency remain undefined. With regard to the ordering of modulation

of (or of loading on) the carrier wave with epi-fields in Φ_{cc} and their demodulation at the level of an individual during meditation, the sequences followed are of opposite nature to each other. For example, for the demodulation it occurs as: $E_a \rightarrow W \rightarrow A \rightarrow F \rightarrow E_t \rightarrow M \rightarrow I \rightarrow E$, i.e., first E_a uploads, etc. In other words, during modulation, the essence of every epi-field is attached with the carrier wave in the order of its subtlety, i.e., first that of $\widetilde{E}^{(n)}$, then $\widetilde{I}^{(n)}$, then of $\widetilde{M}^{(n)}$, and so on, and in the end that of $\widetilde{E}_a^{(n)}$.

vi. In fact, these eight varieties of epi-fields including their partially dressed versions need to be loaded on a carrier wave. While this number of loading agencies is in accordance with SMBG (Verse7.4), they provide a set of minimal for the creation of Universes in Φ_{cc}

[13] on the one hand and a clue for understanding the details of these creations by an individual on the other. As per Vedic wisdom, this is the case with a perfect mind wave; otherwise, imperfect mind waves are also always and everywhere present in Φ_{cc} . It depends on

the capacity of the receiving instrument (e.g., a human Being who is said to be a perfect creation) to receive these perfect or imperfect mind waves.

The role of mind waves starts at a stage where that of brain waves ends, i.e., it could well be beyond the gamma synchronous activity in brain science.

These are the mind waves associated with the individual husband and wife which transcends and interact at the time of conception in addition to given physical environment. It is this phenomenon responsible for the germination of personality seeds in the life of a new born baby.

ATTENTION DOMINATED PROCESSES

At times many of us have noticed some peculiar phenomena that occur in the domain of consciousness but cannot be explained within the framework of space-time mediated objective science. Such exotic phenomena have been in use for centuries in different cultures and form the part of the so called 'occult science'. Some of these phenomena, no doubt, are not taken in good taste by the society but still some contribute towards one's happiness provided the person concerned has a belief in them. Earlier we have tried (see, Appendix F of [1]) to find explanation of some of these phenomena in a limited scientific spirit and within the framework of patomic model, here, however, we analyze a few more such phenomena involving attention-dominated processes, namely telepathy, tele-therapy and reiki, in the present scheme of study. In particular, the role of mind waves discussed earlier will be highlighted in understanding some of these processes.

Physical and Nonphysical Processes: Role of Mind Waves

Note that the mind waves (in the form of their fully loaded version with all the eight cosmic essences or as partially loaded with some limited essences) are around all over in the all-pervading cosmic consciousness field Φ_{cc} . In general, they are eight-fold modulated waves with respect to a perfect detector, practitioner or an aspirant of the highest degree; otherwise only a few essences transcend in an individual

during meditation. Now the question arises as to how one or who receives and perceives these mind waves when each individual has the potency to this effect? It is the degree or the intensity of one's meditation that decides the transcending of these essences. While the modulation of essences in Φ_{cc} takes place in the order E, I, M, Et, F, A, W, Ea (or the corresponding essences e, i, m, et, f, a, w, ea associated with their respective epi-fields in Φ_{cc}), their demodulation in a practitioner however takes place in the reverse order in accordance with their subtle features. It is perhaps for this reason the master always advises the disciple to uplift his self during meditation first from the worldly objects, then from the senses and sense objects (i.e., the domain of pañca mahābhutās), and then from mind, intellect, and in the end from ego, in order to enter into the consciousness (spiritual) domain of sentient mode of Nature.

A notation for mind waves and remarks about their modulated and demodulated versions: We use the notation '(CCW)' for the mind wave(s) as they basically are the consciousness carrier waves which, after passing through various epi-fields present in Φ_{cc} in their seed-like forms, get multifold modulated (loaded) with essences e, i, m, et, f, a, w, ea corresponding to ego, intellect, mind, ether, fire, air, water and earth. These essences are labeled as superscript(s) on (CCW). Next, we display the ordering of essences during the processes of modulation and demodulation as superscripts on (CCW), viz., for the modulation in cosmos we have the process,

$$\Phi_{cc} \Leftrightarrow (CCW) \xrightarrow{\text{cos mic}}_{\text{desire}} (CCW)^{e} \xrightarrow{\text{cos mic}}_{\text{int ellect}} (CCW)^{ei} \xrightarrow{\text{cos mic}}_{\text{min d}} (CCW)^{eim} \xrightarrow{PM}_{ether} (CCW)^{eime_{t}}$$

$$\xrightarrow{PM}_{fire} (CCW)^{eime_{t}f} \xrightarrow{PM}_{air} (CCW)^{eime_{t}fa} \xrightarrow{PM}_{water} (CCW)^{eime_{t}faw} \xrightarrow{PM}_{earth} (CCW)^{eime_{t}fawe_{a}} , \qquad (5)$$

and for the demodulation in an individual practitioner, we have the process

$$(CCW)^{eime_{t}fawe_{a}} \xrightarrow{PM, earth} (CCW)^{eime_{t}faw} \xrightarrow{PM, water} (CCW)^{eime_{t}fa} \xrightarrow{PM, air} (CCW)^{eime_{t}f} \xrightarrow{PM, fire} (CCW)^{eime_{t}} \xrightarrow{PM, earth} (CCW)^{eime_{t}} \xrightarrow{PM, earth} (CCW)^{eime_{t}} \xrightarrow{PM, earth} (CCW)^{eime_{t}faw} \xrightarrow{PM, earth} (CCW)^{e$$

that takes place side by side and thus leads finally to *moks'a* in the limiting case. The matching of the two processes at a certain stage of meditation corresponds to the realization of cosmic connections at that stage. Other pertinent remarks about the characteristics of mind waves are as follows:

i. Note that these are the five essences corresponding to the five cosmic elements that are loaded on (CCW) in addition to another three essences corresponding to inner EOLs M, I, and E. Further, various permutations and combinations of these eight essences along with their individual characteristics finally give rise to the creation of entire world, worldly objects and the stimuli as well.

ii. It appears that thus far discovered five EEG bands in neuroscience, corresponding namely to delta, theta, alpha, beta and gamma synchronous frequencies, represent the essences associated only with five

Manuscript Scientific Services Journal of Psychology and Psychiatry Research (JPPR) cosmic elements in the mind wave. The main reason for such a conjecture is the fact that the humanbehavioral-features, like inertia, activity and dynamism noticed with these bands, also appear in Vedic science as an effect of three Nature-born tendencies (gunās) on human qualities. This later observation is also linked with the domination of any one or more mahābhutās when they are considered as responsible for producing the three dosās vāta, pitta and kaph (cf. relations (7)) of Ayurveda. This striking similarity opens the possibility of connecting the health (both mental and physical) and the wellbeing of a person with his neuro-scientific data.

iii. How one mind wave can differ from another: Note that the carrier wave (CCW) of pure consciousness remains common in the background of different modulations. The main source of modulating essence is the undressing of an epi-field (present in Φ_{cc}) out of its infinitely dressed version with consciousness. As this happens with different epi-fields in Φ_{cc} , it leads to infinitely many varieties of differently loaded mind waves. We use this feature to call the mind wave as the 'charged' one with consciousness, whether heavily or lightly depends upon the intensity of meditation.

- iv. As the definition of any kind of infinity in Φ_{cc} is meaningless, the mind waves travel with an imaginary, limitless velocity not only in its unmodulated version but also even in the loaded version with essences e, i, m (corresponding E, I, and M). However, they start gaining space time features in increasing order when loaded respectively with et, f, a, w, and ea (corresponding to Et, F, A, W and Ea). In fact, at this later stage physical fields like gravitation, electromagnetic, weak and strong also start appearing as a result of uncountable infinite permutations and combinations of the undressing modes of various mahābhūtās with the highest but finite limit, if any, on the velocity in the space-time domain.
- v. Note that there are certain categories of mind waves which remain functional in the overlapping domain of essences corresponding to PMs and to inner EOLs. This domain in fact is useful for the occult scientists. The velocities in this domain can perhaps lie between the velocity of light and the limitless velocity in Φ_{cc} . Further note that while *moks'a* corresponds to the merging of (CCW) in Φ_{cc} , the practitioners who attain increasingly higher degree of meditation, can be classified in the following various categories of mind waves, namely

 $(CCW)^{e_a wafe_t mie}, (CCW)^{wafe_t mie}, \dots, (CCW)^{ie}, (CCW)^e$

As far as the objective scientists are concerned, they out rightly reject the role of consciousness while analyzing a physical process in spite of the fact that their inner conscience is always working not only in the collection of data but also in their analysis and thereby in developing models for extracting the absolute reality. As they often get wonderful matching between theory and experiments by this procedure, for them the role of consciousness is desirable in one form or the other. Interestingly, the results so obtained and the conclusions drawn there from, are not only space-time invariant under the given circumstances and the assumptions made in the theory, but are also experience-based invariant. While such studies for physical processes are going on, there are still a very large number of non-physical processes in human behavior and experiences where the role of consciousness predominates, particularly in the form of attention. In order to understand this latter class of processes the concept of mind waves as introduced above can play an important role.

What a funny game an aspirant or a truth seeker of absolute reality is playing! As an objective scientist exploring the world of *pañca mahābhutās* (i.e., first five essences modulated on the mind wave) or the creations of the five senses of knowledge using the instrument of psychoscience (mind, intellect and ego), i.e., the last three essences loaded on the carrier wave. On the other hand, as an occult scientist

Manuscript Scientific Services Journal of Psychology and Psychiatry Research (JPPR) one explores the world of psychoscience, (i.e., the last three essences loaded on the carrier wave) using the *pañca mahābhutās* including the biological body of a human Being. None of them separately, however, is able to derive the complete truth in Nature. Such a role of mind waves in the process of meditation helps both objective and occult scientists in establishing cosmic connections.

Exotic Phenomena and the Role of Mind Waves

K-effect and 'mind'- 'mind' interaction: With a) regard to the K-effect, first we briefly remind the illustrative analogy discussed earlier (cf. Appendix F in [1]). Recall that an atom in itself has intrinsic electricity and magnetism and the corresponding fields inside, but when placed in an external electric or magnetic field it shows an abnormal behavior in the form of Stark, Zeeman, or Faraday effect. In the same way, a conscious individual who himself has EOLs including the soul and hence the consciousness energy (cenergy) fields (the same is also translated into a functional mindset \mathcal{M}), when placed in an external cenergy field of another individual, is bound to undergo a change in his mindset and also in the behavior. The latter phenomenon is abbreviated as 'Keffect' (i.e., 'Kaushal-effect' or as 'skill-in-action' effect). Another situation which can be added to such an analogy in physics is that a piece of magnetic material (say, an iron bar), when constantly rubbed by the pole of a permanent magnet, the former starts showing the magnetism or becomes a magnet, may be of somewhat less intensity. Note that, in case of an atom the electric or magnetic fields inside and outside, or in case of magnetized iron bar the magnetic field produced in it and the one present in the rubbing magnet are in no way different from each other as far as their fundamental properties in space time are concerned. However, only the resultant effects of the fields observed by a detector or by an external observer could be different.

In fact, the above two phenomena offer lessons to study the human behavior in two distinct situations. In the first case, it is all action-at-distance (AAD) based effect that gives rise to a resultant effect whereas the second phenomenon is the outcome of both AAD plus contact type forces that are involved. In the tone of human-interactions it is the \mathcal{M}_1 - \mathcal{M}_2 type interaction in the former case and it is \mathcal{M}_1 -(\mathcal{M}_2 + G_2) type one in the latter case [3]. Also, in the former it is all smooth and unprovoked action and in the later it is forced and under pressure. Thus, the brain-wash or the mind-transformation of a person by another one could be smooth (as through the class-room-type education or through sermon delivering process) or could be under pressure and fear (as for prisoners in a prison, etc.). Though our earlier works on \mathcal{M}_1 - \mathcal{M}_2 interaction [1,3] will act as a guide in analyzing these cases, however, in the language of mind waves it is the flow of cenergy from a highly charged mind wave to a lower charged mind wave. Further, this gradation of charging, as discussed above, is in terms of orders of dressing/undressing of epifields through consciousness in Φ_{cc} besides the hierarchy of EOLs M, I and E.

While \mathcal{M}_1 -($\mathcal{M}_2+\mathcal{G}_2$) type interaction will further add to the number of processes and hence to the variety of exotic phenomena, it is worthwhile to have some glimpses of \mathcal{M}_1 - \mathcal{M}_2 type interaction. The possible exchanges of *tanmātrās* in the mental domain are shown by a Feynman-like diagram in **Figure 2** for two interacting persons b_1 and b_2 , namely for the

process, $b_1 + b_2 \xrightarrow{\longrightarrow} b'_1 + b'_2 + \tau_{b_1b_2}$. Here $\tau_{b_1b_2}$ describes

various quanta of interaction (or exchanged *tanmātrās*). As can be seen from **Figure 2**, the interactions between inner EOLs of two persons, b_1 and b_2 , give rise to a large number of exchanges which, in turn, will help in exploring and classifying subtleties involved in various types of exotic phenomena. In all there are six exchanges possible in this diagram after accounting for the symmetry considerations [10]. Note that this symmetry is possible mainly for two ideal friends or for an ideal husband-wife couple; otherwise, in general, all nine exchanges take place in a process, particularly in the two situations discussed above. In fact, in the exotic phenomena in which the 'brainwash' is must, the

question of exchange symmetry does not arise. As each EOL M, I, and E further appears in three modes through *gunās* and so are the exchanges in this figure, this will further allow the fine tuning of interactions with increasing meditations (cf.

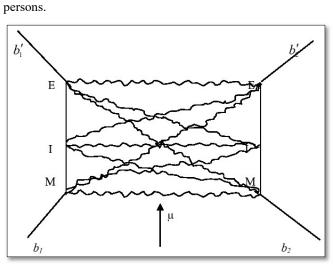


Figure 2) or the levels of development of FOUs of the two

Figure 2. An example of fine-tuning of \mathcal{M}_1 - \mathcal{M}_2 type interactions mediated by the exchange of corresponding *tanmātrās* at a subtle level. In all there are six exchanges possible in this diagram after accounting for the symmetry considerations.

Mind waves and exotic phenomena: It is worthwhile b) to recall a few exotic phenomena related to individual's behavior but whose explanation does not lie in the domain of space-time mediated objective science. These phenomena, in fact, lie in the domain of the trio of space, time and consciousness and a plausible explanation of them perhaps can be sought in terms of the mind waves. Naturally, here the forces of AAT-and AADT-type are involved and all three, space, time and consciousness play a comparable role. In addition to the phenomena investigated earlier (see, Appendix F of [1]) some other of particular interest are, tele-therapy, remote viewing, remote sensing, unexplained acoustics, telepathy (tele-empathy), reiki, hydro-therapy, etc. These processes basically are the epi-physical processes with highly dominated attention.

It is a common experience of many of us that, at times, telepathy works, blessings of an individual or of a collection of individuals do miracles, particularly in the remedy of a disease. Also, note that a believer (theist) gets quickly or better cured as compared to a non-believer (atheist) for the same disease, and in the same given circumstances, etc. Here lies the role of consciousness or of attention dominated waves or of the mind waves charged appropriately with the necessary essences.

What we have discussed before is the origin and the embedding of mind waves in Φ_{cc} but the fact is that an

individual's consciousness can also produce the mind waves at secondary level or can modify the ones present already in Φ_{cc} . This is not possible for a common man but the practitioners with sufficiently intense meditation are capable of doing all this. Not only this, the quality of charge on a mind wave can also be modified as a result of constant recitation of certain *mantrās* (sacred syllable/words dominated with attention).

In **Table 1**, we supply some necessary inputs for such interdisciplinary studies from both objective sciences and Vedic wisdom with a view to bringing the subject of occult sciences on par with the main stream of science. In particular, in this summary Table we attempt to identify the conventional physics and other disciplines with the *tanmātrās* and corresponding *panca mahābhūtās* of Vedic science at a crude level, i.e., without really touching the roles of m, i and e essences on a mind wave.

c) Epi-fields of secondary nature in Φ_{cc} and teletherapy: With a view to understand certain exotic phenomena like tele-therapy, reiki, etc. we have to consider the presence of secondary epi-fields in Φ_{cc} in addition to the primary ones. (Note that the primary ones are the infinitely dressed, seed-like versions of five cosmic elements and those of mind, intellect and ego with consciousness). For this purpose, we have to rely on the Ayurvedic wisdom (see, for example,) [20] where the tanmātrās with their successively increasing and added gross features are linked with the panca mahābhūtās through certain type of correspondencerelations like, sound \Rightarrow ether (E_a); sound + touch \Rightarrow air (A); sound + touch + light \Rightarrow Fire (F), sound + touch + light + taste \Rightarrow water(W); sound + touch + light + taste + smell \Rightarrow earth (E_a), where, sound, touch, light, taste and smell, respectively correspond to the Sanskrit words, s'abda, spars'a, rūpa, rasa, and gandha.

On the other hand, certain combinations of five cosmic elements E_t , F, A, W and E_a give rise to the trio of $v\bar{a}ta$ (v), *pitta* (π) and *kapha* (κ) via a new type of *panci karan* rule, which, symbolically, can be expressed in the lowest order of dressing (since a functional trio of v, π and κ can exist only in an alive body and not in a dead one) with consciousness as,

$$\widetilde{v}^{(1)} = a_1 E_t + a_2 F + a_3 A + a_4 W + a_5 E_a$$

$$\widetilde{\pi}^{(1)} = b_1 E_t + b_2 F + b_3 A + b_4 W + b_5 E_a$$

$$\widetilde{\kappa}^{(1)} = c_1 E_t + c_2 F + c_3 A + c_4 W + c_5 E_a$$
(7)

where a_i, b_i , and c_i (for i=1, ..., 5) account for the weight-age given to a *mahābhūta* or *mahābhūtās* in a particular combination. For example, in $\tilde{v}^{(1)}$, the *mahābhūtās* A and E_t, in $\tilde{\pi}^{(1)}$, F and W and in $\tilde{\kappa}^{(1)}$, E_a and W are dominant.

Further note that all three in this trio of the so-called '*dosas*' in Ayurveda, basically are the intangible objects and they form the basis of all kind of studies in Ayurveda.

As far as the higher order dressings of $\widetilde{\nu}^{(1)}$, $\widetilde{\pi}^{(1)}$ and $\widetilde{\kappa}^{(1)}$ with consciousness as a result of individual's meditation is concerned, they can be obtained using a kind of *tri-karan* rule (in analogy with the one we had for the trio of M, I and E in \mathcal{M} in Sect. 1.2(b)), which symbolically can be expressed through recurrence type relations, viz.,

$$\widetilde{\nu}^{(2)} = \frac{1}{2} \widetilde{\nu}^{(1)} + \frac{1}{4} \widetilde{\pi}^{(1)} + \frac{1}{4} \widetilde{\kappa}^{(1)}$$

$$\widetilde{\pi}^{(2)} = \frac{1}{2} \widetilde{\pi}^{(1)} + \frac{1}{4} \widetilde{\kappa}^{(1)} + \frac{1}{4} \widetilde{\nu}^{(1)}$$

$$\widetilde{\kappa}^{(2)} = \frac{1}{2} \widetilde{\kappa}^{(1)} + \frac{1}{4} \widetilde{\nu}^{(1)} + \frac{1}{4} \widetilde{\pi}^{(1)} ,$$
(8)

for the second-order dressing. Similarly, for the n-th order dressing, one writes

$$\widetilde{\nu}^{(n)} = \frac{1}{2} \widetilde{\nu}^{(n-1)} + \frac{1}{4} \widetilde{\pi}^{(n-1)} + \frac{1}{4} \widetilde{\kappa}^{(n-1)}$$
(9)

and similar expressions for $\tilde{\pi}^{(n)}$ and $\tilde{\kappa}^{(n)}$. In the limit when $n \rightarrow \infty$, the objects, like $\tilde{\nu}^{(\infty)}$, $\tilde{\pi}^{(\infty)}$ and $\tilde{\kappa}^{(\infty)}$, will form the seeds of secondary epi-fields in Φ_{cc} and thereby will help in creating life in the Universe in conjunction with other later generated bio-chemical reactions. As such these essences are not loaded on (CCW) but they are gradually formed in due course and in given circumstances favorable for the creation of life at the time of conception and later. Such considerations do help in understanding the phenomenon of tele-therapy or reiki.

As a matter of fact, the framework of mind waves outlined here does offer an explanation of variety of phenomena. For example, whether it is remote viewing, remote sensing, unexplained acoustics, tele-hydrotherapy, or in general teletherapy, in either case the concept of mind waves will offer an explanation (cf. Table 1). For this purpose, one just has to load the carrier wave with appropriate essence(s) corresponding to specific mahābhuta(s) as indicated in Table 1 and direct the wave towards the true and deserving receiver (patient/disciple) with an attention dominated meditation. This kind of loading of carrier wave, in fact, needs to be done after a concerted and intense meditation on the part of the master, of course, with appropriately chosen essences and with still subtler ones out of m, i and e. While all this goes on towards the curing of mental health of a patient, towards his physical health, however, tele-therapy in terms of secondary epi-fields needs to be initiated. These secondary epi-fields v, π and κ or their dressed versions basically are the constructs

of *panca mahābhutās* (cf. relations (8) and (9)) and in some senses are already present in Φ_{cc} in a seed-like form. While *panca mahābhutās* are directly used in the treatment of diseases in naturopathy [6], their combinations in the form of *tridosas* v, π and κ (cf. relations (7)), in fact, form the back bone of the Ayurvedic system of medicine.

SOME OTHER EXOTIC PHENOMENA IN THE PRESENT SCHEME OF STUDY

Note that all 16 classes of exotic phenomena listed in Sect. 1.1 are not completely independent as far as the roots of their origin and the domain of their occurrence are concerned. Most of these phenomena, in fact, concern an individual and originate from an affected psychic zone of that individual as a result of (i) his accumulated tendencies (Samskārās) of previous birth(s) as per Indian philosophy, (ii) the development of his extra-sensory perception in terms of dressing of his EOLs with consciousness, (iii) the presence of another abnormal psychic zone around, or (iv) the presence of extreme external physical conditions, i.e., environment and /or circumstances, causing a change in the neuronal dynamics of brain. Further note that these phenomena appear as strange (exotic or abnormal) for a third person with a normal psychic zone and some of them, if not all, may not be exotic for him if he himself also has a matching psychic zone in terms of development of his FOUs and/or abnormality desired for. In spite of the fact that the expertise of different disciplines is involved in finding explanation for these phenomena, yet there does not exist a unifying understanding of these phenomena except for some scanty explanations. One cannot expect a satisfactory explanation for these phenomena on the basis of modern science based purely on space-time mediated interactions and not accounting for the consciousness involved in these phenomena. For a survey of various explanations of these phenomena, we refer to our earlier work (cf. Appendix F of [1]).

Two approaches presented in this Article are those of patomic model and of newly proposed mind waves. While the former originates from the individual and ends up in the cosmos through dressing rules, and the latter originates from the cosmos and ends up in the individual through demodulation of cosmic essences, both carry the spirit of cosmic connections in the background. These connections, in turn, become viable only through intense (or attention-dominated) meditation. In fact, any two minds can also work as source or sink for these waves depending upon the degree of meditation by an individual. Mind waves, no doubt, are limited to mental domain but in conjunction with patomic model, AAT and AADT in addition to AAD and contact type forces they are capable of offering explanation perhaps of entire gamut of human actions and experiences, then what to say of 16 classes of exotic phenomena listed in Sect 1.1.

CONCLUDING DISCUSSION

This Article offers another step towards the understanding of the phenomenon of consciousness but mostly in the realm of behavioral and physical reality and again in a top-down manner. To this effect, the role of cenergy in the form of intense meditation or attention-domination is analyzed to seek explanation of some non-physical processes and phenomena. In particular, the epi-physical version of the physical matter with reference to an idol worship, mind waves (as a step further in the study of brain waves) along with associated energies and processes that fall into the domain of occult sciences are investigated. In fact, the normal consciousnessmanifesting processes (the so-called 'soft' ones) while proceed in a natural manner, the attention dominated (the socalled 'hard') ones require some special efforts of varying nature towards the success of an action.

It is argued that the idol worship performed in an Indian temple that is constructed in accordance with ancient Indian wisdom definitely accelerates the process of thinking in a devotee, whether it is positive or negative thinking depending upon his attitude or intentions towards the world and cosmic orders. Not only this, it is argued that a positive environment (as an effect of induced magnetic field) surrounds the temple premises which in the long run might add to maintaining both these orders through the actions of a devotee.

It may be emphasized that the role of mind waves, as an outcome of the top-down approach, starts at a stage where the role of brain waves of bottom-up approach ends. The mind waves exist and are created in the cosmic consciousness field as a result of cosmic desire. They are multifold (in particular, eight-fold as per Vedic wisdom)-modulated waves. These constructs basically are the carrier waves of pure consciousness which are loaded with the essences of all eight types of epi-fields present initially in Φ_{cc} in their seed-like

forms. The modulation starts with subtlest ego, then with lesser subtle intellect, mind, ether, fire, air, water and in the end with the least subtle earth-essence. On the other hand, as a result of intense meditation by a practitioner, these essences of various epi-fields unwrap of themselves in a mind wave in the reverse order, i.e., first the grossest essence e_a unwraps and in the end the subtlest essence e unwraps. In view of the Vedic wisdom, it is suggested for brain scientists to look for three more EEG bands in addition to the existing five ones corresponding, namely to delta, theta, alpha, beta and gamma synchronous activities. In fact, for mind waves there is no concept of velocity or even of infinities as they belong to an experiential domain and are beyond space time. It is for the future studies to explore these aspects of mind waves which, at present, seems to be of pure experiential nature and as such their role, particularly in occult sciences, cannot be denied.

Modern researches in cognitive and brain sciences have shown that the human thinking and behavior are the outcome of constant firing of electric signals by brain neurons in the brain space. To this effect, a possible way of enhancing the frequency of this firing by brain neurons is discussed in Sect.

3 through the idol worship in an Indian temple, mainly as an attribute of geomagnetic field. In fact, it is not difficult to extend the discussion to accommodate the effect of electric/magnetic fields (howsoever small that may be) coming constantly from the sun and other planets on the brain neurons. Such studies, in conjunction with the concept of mind waves of Sect.5, will perhaps open new dimensions to study the subject of Astrology, which otherwise no doubt is considered as a science but with poor predictions.

In nut-shell, the studies pursued here clearly indicate that in cosmos there is nothing like an (isolated) individual entity, whether it is a living or nonliving one. Each entity, in fact, is not only a part of but also embedded in an all-pervading cosmic consciousness field Φ_{cc} . Some entities (may be rarest of the rare) while develop capacity of realizing these cosmic connections, rest are forced (!) to exist, maintain and to survive only with these connections but without their cognizance. The concept of mind waves, introduced here perhaps for the first time in the light of Vedic wisdom, turns out to be an important tool to explain both physical and nonphysical communication between and among these entities. In the nonphysical case, however, an explanation of variety of exotic phenomena including tele-therapy with reference to both physical and mental health of a person can be sought.

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