

## Exploration

# An Exploration of the Process of Becoming an 'I' & the Quantum World of Realities (Part III)

Rajesh S. Dagli\*

### ABSTRACT

In this series of articles, the author analyses epistemological and ontological developments of a human being, in particular, development of an 'I' within each of us. It is postulated that each overall 'I' is an energy exchange reservoir, that is constantly interacting with infinite variety of other environmental fields, and thus itself undergoing continuous metamorphosis, exhibiting no defining characteristics for either its brain or body that are unchanged even for an instant. Thus, each 'I', is not a product, nor an entity that we all believe as remaining unchanged within each of us all through the life. Rather, it is a process - a long process running all through the life - connecting infinite states of an emerging overall 'I' from instant to instant, exhibiting innumerable avatars of 'duality' between the two extremes of a wave and a particle. Each said avatar comes into being only at the instant of an actualization interaction with an environment, which otherwise remains non-existent. The study concludes, perplexingly and painfully, that each 'I' is as much a quantum-like process as that of an atomic particle.

Part III of the four-part series of articles includes: 7. The Unchanging Entity "I"; 8. Awareness; 9. Dissection of an "I"; 10. Abstracting an Order – 'I'; and 11. One Mind: Many Realms.

**Key Words:** Human being, Consciousness, process of becoming, interaction, environment, actualization, quantum-like, quantum reality, I.

### Abbreviations

CCES - Cumulative Consciousness Energy Spectrum  
FORs - Frame of References  
MCRM - Mechanism of Compatible Rates of Metamorphosis  
ROCA - Realm of Consciousized Aggregates  
SCAR - Subjective Component of an Actualized Reality  
SSG - Super Scientist-God  
UCAR - Universal Component of an Actualized Reality  
UOR - Ultimate Objective Reality  
UOROI - Ultimate Objective Realm of Interactions

## 7. The Unchanging Entity "I"

As postulated in the present study, any complex human behavior can be analyzed into innumerable root level, instantaneous consciousizing interactions with the environments. **This postulate in a fundamental way, implicates that human behavior- or for that matter, behavior of any living being - should not be construed as *acting upon* the environments, but**

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\*Correspondence: Rajesh S. Dagli, Independent Researcher. E-mail: rajeshsdagli@gmail.com

**should be viewed as *reacting with* an environment. Hence, each living being is in a circulatory relationship with the environments, in the sense that both are reacting with each other, neither can be said to cause an effect onto the other, because both are simultaneously causing changes onto each other. And this means, if in every interaction both, the 'I' and the environment in reaction are changing continuously, there cannot exist an entity 'I' remaining unchanged with time!!**

This viewpoint probably may shift the whole paradigm upon which all our world views are based with the following three main implications:

1. For all kinds of human behavior, environments are as much responsible as is the 'doer', to the extent that no human act or action would ever have been possible in absence any stimulating or conducive environments. Thus, the belief in free will, that grants total independence from environments to each human being for any and every kind of his/her acts turns out to be totally ill-founded.
2. Since all reflex acts are either pleasure or pain driven, and hence causal in nature, knowing *accurately and in their totality* both, the state of the CCES and state of the environments in interaction, the nature of reflex acts, in principle, can be predicted, and thus all human behaviors are causal and determinate, not subject to any free will as popularly believed.
3. No living being can be defined as an entity 'out there', as 'it' has neither any kind of independence and uniqueness nor any kind of unchanging objective properties; but rather, each is a process, that can be described only in terms of innumerable interactions with the environments, and thus always remains totally entangled with the rest of the universe through such interactions. (This point shall be analyzed in greater detail later on.)

Alfred Whitehead had a similar viewpoint against an unvarying entity as reported by Klose J. , "Process Ontology from Whitehead to Quantum Physics" in Atmanspacher H. & Primas H. (2009, pg. 153) : " Neither individual experiences nor natural sciences give reasons to believe in invariable subjects; on the contrary, the whole being of reality is in a *process* of becoming and passing." (Italics in original).

But then the problem is, even if we so desire, how to express any human behavior in terms of those innumerable reactions, because our present day languages are not languages of interactions, but they are the languages of 'things' existing out there. Thus, in all our languages, we have three fundamental elements, a subject, an object and a verb to describe a subject acting upon the object (the environment). In contrast, and in order to describe a phenomenon of two reactants *reacting with* each other, rather than one *acting upon* the another, we would require a totally new language, and this in turn, can be developed only by changing our basic paradigm of viewing an 'I' as an entity vis-a-vis the Nature. But this is not easy due to inherent nature of human consciousness, which we shall discuss a little later on.

Hence, civilization after civilization continued in believing in Cartesian dualism, which clearly partitioned the 'thinking mind' or the 'self' or 'soul' or an 'I' from the physical brain or body,

without clearly defining any linkages between the two, leaving the mind-body problem unresolved forever.

The most important fall out of this Cartesian frame is the systems of rewards and punishments adopted by all the societies world over for the deeds and misdeeds of all the individuals. All such systems are based upon the fundamental notion of an individual's free will, meaning all deeds performed by any individual are always in accordance with his/her will, free from any environmental influence or interference, and thus each one be held *solely* responsible for all such executed acts. Thus, all kinds of recognitions by the societies for all kinds of attributes and skills one might have attained at a particular time and rewarded accordingly by prizes or simply by words of appreciations are in a way directed towards endorsing the reality of this 'I' as an entity, by making it explicitly clear that it is this entity that is rewarded as being an achiever of the feats with his/her extraordinary 'will power', and being the 'owner' of those attributes, with no credit given to any internal or external environments whatsoever. In other words, every recognition of this type goes into endorsing an entity known by a name and a physical body, as being something much more above all the relevant environments in which it had born, and from which it has emerged; and more important, *it is much more than even the very mental and/or the physical attributes for which the entity is being awarded and being recognized, so that, even when all these same attributes undergo a sea change and vanish altogether either due to aging or for any other reason, the entity remains the same old entity of yesteryears!*

The question that has remained unanswered over the ages is what is the form and structure of this entity-'I' within each individual living body that is 'much more' than the body, 'much more' than the very attributes by which it is recognized? And what are the unchanging characteristics of this entity 'I' which, in the early childhood is manifested through an avatar of a small body, small mind, and small acts, and is believed to be the same entity 'I' in the youth, now being manifested through a totally different avatar of a big body, big mind, and big acts, and is also believed to be the same 'I' in the old age, manifested through an all new avatar of a fragile body, fragile mind, and fragile acts?

To be more specific, if we all believe, there is this entity 'I' within each of us to *exist as it is* at 70 as *it was* at 17, even if all our bodily and mental characteristics, attributes and skills that we had at 17 have died off completely, then what is the nature of that 'unchanging I'? We haven't got an answer till date, and we neither will get any in future. Simply because in seeking that answer, we try to 'concretize' a reality and find it's structural properties as if it's an objective reality 'out there', while in light of the postulates presented in this study, the reality of this entity 'I' is not existing at all like a reality of a tree 'out there', meaning this 'reality' of an 'unchanging I' - or our Ego that we all have experienced within each one of us is but an illusion !! Be it so, but the fact remains, that although it's totally an imaginary reality, it is at the same time and anytime, for all of us, much more real than any other worldly reality on our entire Cumulative Consciousness Energy Spectrum ("CCES")! A completely imaginary reality, and much more real than all physical realities? - sounds so contradicting, but that's the way it is in the science of consciousness, wherein the realness of a reality is defined by its impact on pleasures or pains or on living being's survival, and not in terms of its objectivity.

Hence for the same reason, we all have put aside our efforts to resolve the paradoxical issues involved in defining the unchanging characteristics of an 'I' within us, and conveniently accepted this reality of an 'unchanging I' within each of us as an Ultimate Reality, because it remains the *only* source of the ultimate pleasures for each of us all through the life. And since all humans subscribe to the same notion uniformly, mutual recognition of an unchanging entity within each other is an obvious outcome, which extended further, became the very basis for all the systems of rewards and awards and also for the systems of all kinds of penance and penalties. All such social systems existing in various countries, may vary in the finer details in their norms and standards to evaluate the deeds of a subject for the purpose of rewarding, but all of them uniformly believe that doer of a deed has performed an act- worthy for an award or punishment apart, by executing his will freely, totally overlooking the extents to which the environments from which the 'doer' has emerged, and the environments under which the 'deed' was executed, were all influential and interfering, compulsive and complimentary, conducive or conflicting for the nature of feats/misdeeds performed.

Historically, all such rewarding systems came into their existence only with the advent of civilization, or more specifically, with the advent of human languages. With further progress of civilization and agriculture, the physical survival game of stone age slowly got subordinated by the new game of survival of the ego or the survival of the entity 'I', because only that is recognized as a doer of a deed, a performer of an event, etc. by one and all in the society; and hence slowly all human endeavor, through all kinds of human acts were only directed to promote and pamper one's ego, the *ultimate* reality for each human being. Thus, in all the human drama spread over the last several centuries that history has witnessed, the only protagonist was the 'I'-the Ego; and the same has been a root cause for every battle lost and for every war won in the history; very rarely explicit, but otherwise mostly garbed under a variety of 'causes' such as religious, ideological, nationalistic, political or social. With times, nothing has changed in this regard, thus, with endless scientific and technological progress, the human drama remaining the same in principle, the egoistic wars and battles have continued to be fought as ever before, but with newer means, tools and strategies; and the same would continue forever so far as the human minds are shackled in the Cartesian framework, and 'I' continue to be the source of ultimate pleasures.

**And above all, the fact that such an all imaginary reality should become an ultimate reality of ultimate pleasures, and also an ultimate player of all the games and all the wars, that all human beings strive and survive for, is perhaps the most perplexing conundrum troubling the whole of mankind for the ages!!**

## 8. Awareness

In the midst of a hot argument with your colleague, the signals of being thirsty are reaching your brain, and your arm would reach out for the bottle, would pour out the water, fill up the glass and drink it, however during all these automatic acts, your brain doesn't have to break the ongoing argument in order to concentrate, direct and execute all such trivial acts to perform the task of drinking, nor your brain ever realizes consciously all such minor acts being performed by you, which means the 'doer' is unknown about all such small acts making up the whole deed. In the

same way, and rather more important, even the main course of argument involving hordes of consciousness processes like recalling past events, countering with facts and figures from the present, arguing with probable future outcomes, etc. is happening very automatically, along with scores of reflex actions like selecting and uttering the right words with right grammar, utilizing high pitch tones at times, banging the table, certain overtures with body language, etc.

Thus, the entire flow of the argument traversed through a long series of root level consciousness interactions along with the reflex acts, is never consciously realized, (-not even in real time, put aside, anytime later) by your brain, because all these root level acts are the skills mastered well by the brain, and hence the same are performed in the automatic unconscious mode. But however, this doesn't mean, all such root level interactions and reflex acts are not accessible to your brain, they certainly are, but the emphasis is on the fact that your brain doesn't have to consciously know about all such acts while being executed. For example, if at all at any moment, you want access to all these physical or mental reflex acts, the same can be brought from the unconscious level to a consciously-known-level, but then at that very instant, your brain necessarily will have to break the ongoing automatic cycle of argument, and only then you can 'consciously know' the instantaneous status of the ongoing argument and know also the particular reflex act being carried out as at that instant. This means, for the purpose of its 'self-introspection' so that the ongoing unconscious mode of behavior is brought into the conscious mode, the brain has to necessarily focus its radar onto its own status, by shifting it away from an (external) environment that was in focus prior to that instant; which further means, for all tasks requiring higher attention, the human brain at any particular instant, can consciously know and perform only one task at a time.

We can envisage, if at every instant, an ongoing unconscious behavior is broke to bring it into conscious realm, and then again restart the argument, again break, again start....how irritatingly slow the whole process would become!! The very fact that we never experience such irritation in any task we perform is enough to prove that all our behaviors are always in automatic modes; but at the same time, at all those instants when the brain consciousness a heavy impact on its 'I-ness', the ongoing process does get broken automatically to bring the same into the conscious realm for 'self-introspection'. This very interaction of brain consciously observing its own acts or observing the state of its 'I-ness', at any given instant is what I propose to define as to become aware of, and the brain's particular state of consciously knowing its own act or state at a given instant is its state of Awareness. This proposed definition is relevant only in the context of the present study.

Koukkou and Lehmann have similar views on automaticity of the brain's functioning and awareness: (Koukkou M. and Lehmann D., 1993, Pg. 58)" The literature provides strong evidence that the pre-attentive processes, (1) function in parallel for all externally as well as for all internally generated information (i.e. perceptions, thought, fantasies, emotions, memories, goals, body functions, feelings, etc.); (2) operate during all levels of consciousness, that is during wakefulness and all sleep stages; and (3) have an automatic access to the contents of working memory, that is, they operate with reflexive speed. Therefore, humans cannot consciously follow the flow of these processes in their central nervous system. Only the results of these processes that correspond to the formation and manifestation of the initial answer may become available to awareness."

Now, as we saw earlier, the functional state of a human brain is totally controlled by its CCES at any given instant, so knowing its own current functional state at a given moment tantamount to consciously know one or more of the characteristic features of its CCES which are relevant with respect to the ongoing interactions with the environments; or in other words, knowing its own state of 'I-ness' with respect to one or more of its attributes. So, we can also define: 'to become aware of' is to consciously know or assess one's own 'I-ness' in a given situation with respect to a particular attribute. But however, in our routine life, for all kinds of reflex acts like the one in the above example of filling and drinking water, we never consciously observe or become aware of the renewed state of 'I-ness' at the end of each of such reflex acts, simply because such trivial tasks do not affect the 'I-ness' in any significant way, (-unless we are dying thirsty!!). Hence, such cycles go on and on in an unconscious mode till there is an encounter with an environmental change affecting the 'I-ness' in a significant way.

This also applies equally well to all less trivial, more serious consciousizing interactions too; as in the above example, all interactions forming the long arguments are all reflex reactions by the brain. But however, as it happens during the course of all such important arguments, the significant impacts on one's 'I-ness' are likely to be more frequent, and hence at every such instant, the brain needs to assess the impact on 'I-ness' instantaneously by breaking-off the ongoing process, thus becoming *aware* for that instant, about the impact as well as about the status of the ongoing process of arguing. Higher the incidences of such significant impacts during the course of an event, more frequently the same would be brought into the awareness realm, which may, though wrongly, tend to tone down the automaticity of the brain's functioning. *Well, this is exactly the reason why all such events seem to us as not being performed automatically by the brain, and thus we all tend to believe that the entire event is being performed by an 'I' within all of us, which as such, also falls very much in line with the universal belief that 'I' is always the doer of all his/her deeds, and hence, for these reasons, the concept of human brain's total automaticity in all kinds of human behavior, as postulated in the present study, is normally found to be difficult to accept and digest.*

Interestingly, this switching over, at every instant of consciousizing a major impact on 'I-ness', from the ongoing automatic consciousizing processes to the process of becoming aware of one's own instantaneous status, is just another consciousizing interaction in itself, but with a difference. This process of becoming aware is specific in a way that the brain is not assessing or measuring any environmental 'thing' for its impact on its 'I-ness' as normally it performs in all consciousizing processes; but here, it is measuring its own status at a given instant. So becoming aware is also a consciousizing process, but a very specific one in which the brain particularly assesses its own state, and also the state of its 'I-ness'; hence involving implicitly the ultimate pleasures (or pains), and thus has the attention levels higher than those in normal consciousizing processes. As a result, it would necessarily break all other ongoing consciousizing cycles, replacing them by this cycle of 'becoming aware' of its own CCES, or the cycle in which 'I' measures its own 'I-ness'. *Thus each process of becoming aware revolves around the dual roles of an 'I' - 'I' being an Observer, as well as the Observed!!*

*However, this notion that the Knower and the Known is one and the same entity 'I' cannot be accommodated within the Cartesian frame, because Cartesian dualism is based upon a clear demarcation between the 'mind -the thinking thing' and the physical brain, and further,*

*Descartes identified this 'thinking thing' with the 'self' or 'soul' or 'I' in his famous idiom "I think, therefore I am".*

Based upon the foregone discussions, I propose to define the term to become aware as under:

**To become aware is a specific consciousness process for a brain, in which, using a mental skill learned over the years, the status of one's own 'I' is assessed/measured either qualitatively or quantitatively, with respect to a particular attribute, by the method of its comparison with the same attribute of another subject or other subjects, followed by reflex acts either to actualize all positive assessments promoting the 'I-ness' as realities or to de-actualize all negative assessments demoting the 'I-ness' as if non-realities.**

We have seen earlier that all consciousness processes need not have same impacts on 'I-ness', some may have negligible impacts, whilst others can have major impacts. And here lies yet another difference between a normal consciousness process and the process of becoming aware. Not all consciousness realities need to reach the awareness realm, in fact, only those having substantial impacts on 'I-ness' would reach the awareness realm, all the rest would fail to do so. The reason being: larger impacts, whether positive or negative, automatically calls for an assessment and 'measurement' of 'I-ness' with respect to the affected attributes on its CCES, by method of comparisons of the same with those of other relevant subjects, and thus is brought into the realm of awareness. To put this in energy terms, we may say that, in a particular cycle of adaptation, if the consciousness impact on 'I-ness' is above a certain threshold value, not only that the consciousness energies would be very high, but also all actualized realities would automatically reach the awareness realm; in all other cases otherwise, when the energy levels are low, they would fail to do so.

## 9. Dissection of an "I"

We have seen in detail that the entire consciousness faculty, by default, works on one single principle: Actualize the realities of pleasures and de-actualize the realities of pains so as to maximize the adaptability and chances of survival in ever changing environments. The entire spectrum of pleasures and pains can broadly be divided into two main groups: 1. Physical Pleasures and Pains: are those arising from and associated with the physical survival of the body, the latter may be designated as Physical 'I'. 2. Mental Pleasures and Pains: are those arising from and associated with the survival of the imaginary mental entity of 'I'.

### Dissection of Physical 'I'

The physical body of any living being is an open system. No part or the whole body can exist in isolation, whether it is an organ, a cellular colony or an unitary living cell. Any part would lose its functional identity the moment it is isolated from its in vivo environments. In the same way, the whole body,-the only manifestation of a physical 'I' at all times, cannot stay alive on prolonged isolation from its life supporting environments. It simply follows from this that, strictly speaking, the term 'entity' cannot be applied unambiguously either for an organ or for the whole body, as neither can exist independently.

Each part of a living system is a constant energy exchanger, and so also is the whole body, which is involved constantly in all kinds of reactions with the immediate environments. However, the reactions at the cellular levels are totally of different types than those at the tissue's levels, which are again different than those at the next higher levels of organs and so on. Everything changes from level to level, e.g. the reactants, the products, the environments, types of energies, etc. There are about 200 trillion cells in a human body. And each cell participates in numerous reactions every second; by a rough estimate, we can say that there would be anything between 1 to 3 trillion cellular reactions per second in a human body. Then there are reactions at the levels of cell colonies, at the levels of organs; likewise there are also reactions between the various cellular colonies, between the different organs and reactions between the various systems too. Then there are also secretions of scores of hormones and enzymes, which all are responsible for maintaining homeostasis conditions within the body, by regulating their productions in accordance with the changing internal and external environments. This is achieved through communications at all levels demanding supply or reduction of a specific enzyme or hormone at that level, which in turn can materialize only through specific biological interactions designed for such communicative purposes. The total no. of reactions in a 24 hours' cycle in a human body, by a rough estimate, could be as high as a few millions of trillions, probably of the same order as those happening in a nuclear reactor! This is the level of complexity within a human body.

Not only this, just as the internal environmental conditions for each part at its level are constantly changing, the conditions of external environments-both immediate and distant ones vis-a-vis the whole body, are also constantly changing; for example, the water we drink, the air we breathe, the food we eat, each has tens of hundreds of variables- varying every hour, every minute, every second- which all would have effects that may be immediate, or cumulative or catalytic in nature. Further, all immediate environments are constantly in reactions with their immediate environments, which in turn are being affected by those at further distance.... and so on ad infinitum. Thus the fact that each living being is entangled with the rest of the universe through an unbroken interconnectedness encompassing the whole of universe, makes the whole scenario unimaginably highly complex. And, as the entanglements with life supporting environments are essential to maintain the life, disentangling the body from all the endangering elements in the environments is equally essential. However, there are chances that certain conditions in certain external environments with respect to the existing internal environments within the body which too are constantly changing, may turn out to be healthy or hostile for the life; thus balancing life supporting and life threatening elements in the environments (both internal and external) that are interconnected universally, constantly for every instant of life not only becomes a highly formidable task, but also highly unpredictable.

It is the shortcoming of our consciousness faculty that we cannot 'experience' any of these innumerable metabolic reactions directly. The functioning of human consciousness, as described earlier, is by default, based upon the pleasures and pains; and if at all, there were any signals of pleasures or pains arising from each cellular reaction reaching the brain, the brain would have directly 'perceived' each one of such metabolic reactions instantaneously. And any malfunctioning at the cellular levels, for example a malignant growth, would send the painful signals right at the very first instant, and probably, treating the cancers would have become as simple as treating a throat infection. Had the human brains been wired by the Nature to each unitary 300 trillion cells, all medical sciences would probably been able to overcome their



present day short comings, and the human beings would have been able to live for hundreds of years!!

The human scientist, being aware of the complexity involved, has opted as next best alternative to study the reactions happening within the body under the best possible simulating conditions fabricated in the laboratory. Thus, for all such studies in abstraction, a great degree of simplification is achieved by way of isolating the reaction under study from scores of other influencing reactions happening simultaneously in real life conditions; thus allowing the scientist to form a set of causal laws valid only under limiting conditions, and have obviously a very limited applicability for 'real life' conditions. Hence, all such causal laws are likely to fail on two fronts: First, in establishing causes down to the levels of cellular interactions as for why a particular physical 'I' has contracted a particular disease at a particular point of time in his/her life. Second, to predict the future state of any physical 'I' based upon the data of the scores of elaborate medical tests performed at a particular time, which all are in turn, designed and based upon the causal laws learned so far. If the prediction is for a near future, say of a few days or weeks, the errors in most normal cases may not be too high; but for any predictions over a few years or so, the errors would in almost all cases be so large, that there may not be any correlations between the tests performed and the actual observed state at a later date. And thus, in all probability, the new state after such long periods would be like something emerging out of blue. We can thus, say that each or any state of a physical 'I' observed and measured at any point of time is going to be a random outcome, having no correlations with any previous state in the long past. More specifically, this statement would mean that the development of a malignant tumor in the body of Steve Jobs is as accidental as the development of a beautiful body called Aishwariya Rai! The former is due to the failure of medical sciences to establish the root level causal connections, and the latter is the case of the failure of the same sciences to predict whether a new born baby would become the most beautiful woman in the world!

There is no denying the fact that in either of the two cases, the overall status and performance of the Physical 'I' is totally dependent upon the innumerable root level reactions. To be specific, all such metabolic reactions are causal in themselves and hence determinate at their levels, and thus are neither random nor accidental. But due to the nature of complexity within any physical body, the precise scientific study of all such interactions *in their totality* along with the nature of all causal connections that extend far beyond the distant environments, seems to be an impossible task; hence any emerging aggregate state of any physical 'I' would always remain unpredictable. Also, the intractable causality, untraceable interconnectedness, and associated unpredictability at the cellular levels would all result into their unpredictable impacts on the whole body. Thus, any aggregate state of the physical 'I' as observed at any moment can only be consciousnessed by the human brain as an accidental state, because of our total ignorance of deep level causal connections with all those infinite interactions of the past from which this state has emerged; and for the same reasons, our present day sciences would also fail to trace out the precise course of an overall physical 'I' traversed through these infinite interactions in moving from one state at one instant to another at any later instant.

In brief, whatever the state of a physical 'I' may be, either an ugly or beautiful, white or black or brown, tall or short, fat or lean, weak or strong, healthy or diseased, each and every state of any living being or of one living being at various stages of its life time are all but accidental

outcomes of universal chain of infinite reactions, which are but, very contrarily, all causal and determinate at their individual root levels..

However, the proposed accidental nature of the physical states evolving at every instant do not accommodate the notion of self-organizing nature of all living organisms. As we analyzed above, the phenomenon of evolution of any particular state of a physical 'I' is but a chance phenomenon, is thus totally random and unpredictable, and thus devoid of any underlying 'self-organizing order' whatsoever. The only 'Order' predictable in each life is the orderly growth from infancy to childhood to adulthood ...to old age and finally the death, but the overall state of a physical 'I' at any particular time in the entire life span is totally unpredictable.

The entire journey from the birth to the death of any living system, be it six or sixty years long, is a long chain that interconnects the infinite random states; each of which having emerged at every instant from infinite root level interactions which in themselves are all causal and determinate by laws of physical sciences. Thus, neither the journey, nor the long chain be construed as a result of any teleological or 'self-organizing' phenomena existing either at the root levels or at the level of the living system as a whole. But, the latter part of this statement may sound contradictory to what we all feel at the level of our consciousness faculties. It seems very obvious and natural to our minds that all actions of any human being are purposive and invariably directed towards boosting of his/her physical 'I' so as to live forever. This is a very natural feeling simply because all our (reflex) actions are as such invariably always pleasure driven.

**But then, pleasures and pains are experienced only at the aggregate levels and they may not represent the actual reality at the root level interactions which is totally different and more important, totally unknowable to human consciousness. Unfortunately, this is the ultimate reality so far as the survival of the Physical 'I' is concerned. Hence, although all our reflex actions are pleasure driven and also purposive, they may not and will not ensure a kind of 'self-organizing' mechanism to fight all infections and all malignancies arising at the root levels. Put differently, the role of consciousness energies triggering all kinds of reflex actions is too frivolous as compared to the random forces of the nature- a fact which is proven at the end in every death for every life; when the randomness arising from universal interconnectedness would invariably triumph over the *temporary* 'orderliness' imbued from time to time by the consciousness energies, and thus has been prevailing upon our minds all through our life.**

### **Dissection of Mental 'I'**

The basic difference between the physical 'I' and the mental 'I' is, the former manifests itself in form a tangible body, whereas the latter is physically non-perceivable, it rests only in the imagination of the living being. If thus, a particular living being has poor sense of imagination, its brain would fail to develop a mental 'I', and this is probably the case with almost the entire animal kingdom. Even among human beings, those who are severely retarded, do not exhibit a well-developed sense of 'I'. And further, among all normal humans, the moment someone's brain starts malfunctioning that may be due to a head injury or Alzheimer's, his/her behavior with respect to his/her own identity, the mental 'I', would change totally. Thus both, the development of a mental 'I' and its maintenance all through the life demands an adequate

physiological state of its brain all the time, which in turn is correlated directly with the overall physiological state of the living system, or its physical 'I' at any moment. Hence inadvertently, all the randomness associated with the physical 'I' gets interwoven with the mental 'I' in the very first step.

Once the mental 'I' is formed in the imagination of the child, we also analyzed, the same is attributed in many different forms, e.g. the doer of the deeds, owner of material things, or believer of a particular god, etc., and thus, each such attribute becomes a sort of building block for the mental 'I', and also a source of pleasure, inasmuch as the food, water, air etc are there for his /her physical survival. Hence the overall 'I', represented by the individual's CCES at any moment, also has peaks for all these attributes as sources of pleasures alongside those for the physical survival. The CCES of the brain as at any particular instant, is but the cumulative result of nearly infinite consciousnessing interactions that have happened ever since the birth with all sorts of environments, and all these interactions are as automatic as all those root level cellular reactions we discussed above. Again, the nature of all interacting environments in each consciousnessing interaction, i.e. the nature of nearly infinite variety of human cultures pertaining to peoples and places, to foods and drinks, to sports, arts, crafts and music, to scientific, political, religious beliefs and theories etc., that a brain has been exposed to from instant to instant ever since the birth can neither be traced back and be known completely nor can be predicted for any future instant. Thus, as in case of a physical 'I', all these consciousnessing interactions although being causal and determinate at their individual root levels as they all are pleasure or pain driven, the overall emergent CCES, and hence the state of a mental 'I' at any particular instant of time would always be untraceable to root level interactions. For all these reasons, any emerging state of any mental 'I' as observed at any particular instant be always an accidental state coming out of blue, and also that, no future status of it can ever be predicted accurately.

From our earlier analysis of a child's developments, it follows that, in absence of all those interactions with the environments, none of the attributes on his/her CCES can ever develop, neither he/she can ever learn any skill, nor can adopt any culture so as to share part of the 'I-ness' with that culture, nor can hold any scientific belief or belong to any faith or religion. Thus, any brain, however perfect, imaginative and 'intelligent' may be at the time of the birth, if isolated from all sorts of environments, would be a sort of 'dead' brain, and would have only physical pleasures and pains on its CCES. Thus the spectrum of all mental attributes that will get developed in case of every growing child would as much depend upon the brain's internal characteristics on one side, that may be termed as the potentialities, as on the available environments for interactions on the other side, which may be termed as the probabilities.

Each human brain is born with certain characteristics by the virtue of which it can learn certain mental skills during formative years either more easily or with more difficulty as compared to many others, and the nature of such characteristics that a new born baby would have is a matter of pure chance.

The new born brain's further physiological development has also all the elements of unpredictability as associated with the physical 'I', because the brain is an integrated part of the living system as a whole. Not only that, further development of the inborn characteristics of the brain into the future potentialities require right type of environments for interactions, which again is a matter of chance. On the other side, each of the innumerable human cultures, and in

particular, individual cultures of each of the people the child is exposed to for interactions, is in itself again a constantly changing process that is subjected to the same randomness of environments being analyzed right now. Further, all these innumerable cultures also have an unbroken universal interconnectedness between all of them, and also that all of them are continuously changing and thus affecting each other through a complex network, resulting into an overall scenario that is equally as complex, and as unpredictable as the one with the physical environments we discussed under physical 'I'. Hence, any emerging mental 'I' at any stage is an accidental state, be it a state of an Einstein or of an idiot.

With the foregone discussions on physical and mental 'I', we can see that the resulting overall state of an 'I' at any stage in its life is indeterminate, discontinuous, intractable and non-causal, even though the fact remains that both are emerging and built up from scores of root level interactions which all in themselves are totally determinate, continuous, and causal in nature. Hence, every case of a success is as accidental as is every case of a failure in the society! **And more important, all the 'successes' or 'failures' are but our versions – the human ways of consciousness realities at the aggregate levels, culminating from our inherent inability to consciousness the (objective) realities of root level interactions, the realm of interactions in which no 'thing' or no 'I' exists, all the delineating lines between the 'things' existing in our world views vanish and merge into infinite interactions.**

## 10. Abstracting an Order – 'I'

The question may arise, that if the developments of both the physical and mental 'I's are entangled with universal randomness at every stage of their developments, how and why an overall 'I' emerges that has certain unvarying orderly characteristics as attributed by us all? First, we shall answer why of it. Well, accepting the fact that the overall status of an 'I' at any particular instant is but an accidental state emerging out of all pervading randomness, undermines automatically the very essence and existence of one's 'I' as an entity, and also nullifies all its attributes in one stroke. All this being so painful, the reality of the omnipotent randomness from which every 'I' emerges is rejected, de-actualized, in line with the proposed principle of reality in the present study, in spite of the fact that we all experience accidental happenings endorsing randomness in its various ramifications at probably every moment of our lives.

Next, we answer how of it. In order to abstract an order of an 'I' otherwise entangled with the environments, we discount off the influence of environments by disentangling the 'I' from the same in many different ways.

First and foremost, the human cultures since ages, are all based upon the notion that every human being is an entity, a doer of the deeds and an executor of his/her will freely without being influenced or interfered by the environments in any way. This very notion, in one stroke does away with all the entanglements we described under physical and mental 'I's'. This notion is so universal, every new born individual in every new generation has to accept it, and as such, there is no other option either. More important, since this very notion helps each growing child to build up his /her own 'I-ness' to derive ultimate pleasures, no one ever questions the validity of

the notion. Not only that, during the youthful years, so far as the physical 'I' is concerned, in most normal cases the occurrence of any life threatening diseases being very rare, the compulsion to recognize the physical 'I's' entanglements with the root level cellular reactions or with the environments at large does not arise, and hence we do not bother to acknowledge the same. (On the flip side, the healthy state of the physical 'I' is very conveniently attributed to our own 'I-ness' because it simply boosts up our mental 'I'!) As against this, in all those abnormal cases of individuals, development of some life threatening diseases in the young age is never 'credited' to his/her 'I-ness', simply because it is so painful! Hence, the same is attributed to ones' karma of the previous birth, or to the destiny, or to God's will, etc., which indirectly tantamount to recognizing the entanglements and associated omnipotent randomness.

Contrary to this popular notion of an 'I' as doer of the deeds, what is presented in the present study is that all such 'deeds' are but the reflex acts or actions culminating from a reaction that has to happen when the potentialities of the conscious brain match strongly with the probable environments for an instantaneous interaction. Briefly, no 'doer' can perform his 'deeds' in absence of appropriate environments that are equally essential for the 'deeds'. Let's take a simple example of a forger. His every manual stroke with a hammer to shape the red hot iron transforms his physical energies into the kinetic energies of the hammer, which in the end is used to shape the iron article. Now, this energy transformation reaction is due to the properties of both, of the forger along with his CCES on one side and of the iron article as well on the other side.

To be sure, the forger would not have been carrying out the laborious hammering acts unless the same ensures his bread and butter. And at the same time, he has to hammer that hard because the very properties of the iron demand heavy strokes. Would he be otherwise, wasting his energies if the iron article would be replaced by a clay article? On the same line of thinking, would a potter use an iron hammer to shape his clay articles? The human actions either by the forger or by the potter are due to both, their learned skills that bring them pleasures and the available appropriate environments at the instant of reactions; and as we analyzed earlier, even learning of any skill can materialize only if adequate environments are available for repetitive interactions; thus the entanglements with environments are total in every respect.

Whether a learned skill is being executed or a new skill is being learnt, the human behavior in either case, as postulated in the present study, consists of innumerable root level consciousnessing interactions, each automatically deciding between the available pleasures and pains in the environments. In a sense, in each consciousnessing interaction, the brain does 'decide' between pleasures and pains as being offered by the interacting environments, *and if the concept of free will is limited to brain's this inherent property to actualize the pleasures and avert the pains, then yes, we all have free will, but with the major limitation that it cannot have any control whatsoever on any of the qualitative or quantitative aspects of pleasures (or pains) being offered by the environments at any instant.* But the concept is rarely used within such limited contexts, and in fact, the popular meaning of the concept grants all of us a total freedom to decide all our 'actions', all our 'decisions', all our 'beliefs' without any interference or influence from the environments.

**However, in light of one of the fundamental postulates of the present study that all kinds of human behaviors are just the reactions- inevitable reactions under the given states of**

**conditions, any kind of disentanglements from the environments as may be adopted by human beings to nullify their influences, would in the end turn out to be pseudo or ad hoc in nature.**

The next level of equally broad based disentanglements are due to inherent incapability of the human brain to grasp the infinite interconnections its physical and mental 'I's have with the universal environments. Hence, in spite of the fact that all these interconnected environments do have an effect on the survival of an overall 'I', it is impossible for any human brain to keep track of those infinite interconnections. As the best possible alternative, from whatever information reaches the brain, it has to react to only those which have immediate and direct impacts on its survival, and thus in the process, would automatically discard off all the rest as irrelevant and ripple effects, which all *certainly* have indirect and delayed effects on its survival but not foreseeable by a human brain. Thus, the brain intentionally entangles its 'I-ness' with all those realities of pro-survival, and disentangles the same from all those consciousnesses to have negative impacts or no immediate effects. For example, while reading a newspaper, we read in detail all those news which impact our CCES largely, and otherwise glance through all other items having no immediate impacts. This filtering is an automatic process, learned by the brain over the time.

All those news having direct impacts are followed by appropriate reflex actions, and this exactly is the entanglement of one's 'I-ness' with all those environments; all other news would go off the memory very next instant, which is the disentangling phenomenon. Although the fact remains that every case of a rape, robbery or riot in the society has always some indirect effects, may be delayed, on his/her 'I-ness', the brain doesn't and cannot see such indirect delayed effects, or put differently, the brain has to sort out and prioritize the various news so that the limited available consciousness energies would only be used in actualizing those realities which have immediate and intense impacts. Such prioritizing or selective disentangling by a conscious brain is but the stage-wise consciousness process we described in detail earlier.

This disentangling mechanism is just the another way to describe the principle of reality that was proposed earlier, according to which only environments of pleasures (or pains) are actualized as reality by a conscious brain, all others are automatically discarded off as either less real or unreal. Although, it is very essential for any brain to learn this skill of entangling and disentangling which helps it to decide for pro-survival reflex actions from instant to instant, it can in no way ensure an immunity from all those discarded environments that are bound to affect its survival in one way or the other in the long run. Thus the influence of all disentangled environments remaining as potential as ever, all such disentanglements are temporary and ad hoc in nature.

Next, there are disentanglements which are exclusively correlated with a mental 'I'. Let us take a hypothetical example. The prime ministers of India and Pakistan happened to land themselves accidentally in the same elevator during a SAARC meeting. The two heads of state, due to the age old animosity between the two countries which got escalated further due to recent border skirmishes, neither could extend their hands even for a cold handshake, nor even could exchange a smile. But the things are different –totally different at some other level, meaning, their individual lungs have an instantaneous 'handshake' by exchanging the air inhaled and exhaled by each other, and thus two lungs start sharing instantly each other's 'cultures' without bothering

the other one belongs to an adversary!! The bitterness at the consciousness levels doesn't percolate down to any other lower level; and thus, even if the two rivals do not formally shake hands, the two lungs would surely do!!

All the viruses and bacteria from one lung to the another would travel freely without requiring any visa, and thus share each other's cultures during the short duration; such processes of entangling at this level cannot in anyway be stopped by the two conflicting consciousness realms at their individual 'I-ness' levels!! Put differently, however disentangled the two 'I's may be at their consciousness levels, at the root levels, the two remain totally entangled with each other in innumerable ways and manners that no 'I' can ever stop! Once again, all man-made disentanglements seem to be pseudo and ad hoc.

We come across such examples of disentanglements based upon religion, race, caste, nation etc. in almost every walk of life. By calling oneself an Indian Hindu, a person automatically disentangles himself from all other Indian religions, but then he, for all his daily needs for physical, economic, political or social survival remain always dependent and entangled with all other peoples from different religions and castes in many different, direct or indirect ways. This applies to us all. We all very conveniently, as and when situation demands, take a strong view from a FOR of our religion to disentangle one's self from all those from other religions; but in an another situation, take a cool position into an another FOR, to share a common platform with the same very persons, so as to derive some other pleasures of survival.

**These examples vividly explain the pseudo characteristics of all human disentanglements that are consciousnessed with the sole aim to abstract an order of one's 'I' out of the realm of infinite reactions, as and when demanded by the circumstances. Put differently, all the human drama of disentanglements that happens at the human consciousness levels are all illusionary games of illusionary egos, and thus have neither any relevance nor any correlation with root level reactions that constitute the ultimate objective reality of the total randomness, which is bound to overwhelm the illusionary order of an 'I' abstracted through such illusionary disentanglements, sooner or later.**

**But however, the human society by and large has failed to realize pseudo characteristics of all such disentanglements, and worse, with the increasing pace of scientific and technological developments that constantly provide each new born with increasingly newer and inexhaustible variety of means to define one's uniqueness and independence, the human society as a consequence, has drifted further and further away from the basic notion that each 'I' construed as an independent and unique entity, remains at the root levels, firmly entangled with all other peoples of all the races and religions, all other societies, all other species, and even all non-living things that no means can ever disentangle.**

## **11. One Mind: Many Realms**

What emerges from our dissections of the physical and mental 'I's is a realm of infinite interactions, all happening within and without living matter, having unbroken interconnectedness

extending far beyond to engulf the whole of the cosmos with the inexhaustive variety of interactions. All these interactions, at their root levels are causal, determinate and continuous. Thus any interaction, even a consciousizing interaction happening at a given set of time-space-consciousness coordinates happens simply because that reaction -and only that, has to happen under the prevailing energetical conditions at those coordinates. This is the essence of this *Ultimate Objective Realm of Interactions* ("UOROI"), and since the UOROI in its entire cosmic avatar can never be studied *in totality* by the human brain, and hence cannot be subjectivized in anyway, the UOROI remains *the only Reality which is truly* an objective reality, hence the term ultimate. Nor the human brain would have any control of any kind on the UOROI, its infinite interactions would keep on happening perpetually in an automatic mode right from the levels of atomic and sub-atomic particles to the levels of galaxies, engulfing on its way zillions of living and non-living matters of the entire cosmos. Along this infinitely long cosmic range, there are infinite hierarchical energy cultures, each culture at a particular level is characterized by interactions of a particular nature that are the *only* viable interactions at the energy band prevailing at that level. For example, the energy band at the atomic and sub-atomic 'particles' levels would be of the order of a few eV, while that at a level of a lightning bolt would be of the order of millions of volts. Same way, metabolic reactions at the cellular levels constituting a thumping heart are entirely different than the pumping reactions at the level of the whole heart. However, the change from one level to another is never abrupt or a quantum jump, it is in fact very continuous. The reason being, there are also inter-level interactions as much as there are intra-level reactions, hence no level can ever be precisely defined either.

Hence in the UOROI, no bunch of interactions could be identified to be belonging exclusively to a particular level or to a particular entity, because all interactions belong to the whole of the cosmos through universal entanglements and interconnectedness, thus making the whole cosmos as one huge unbroken entity. In the realm of Nature or UOROI, thus, any notion of any 'part, 'whole' or 'thing' existing 'out there' as an entity independent of the environments is invalidated. Conversely, complete and truly objective knowledge of any 'entity' of our Cartesian world views 'existing' anywhere in the entire hierarchy demands complete descriptions of all the interactions within and without that 'entity' in immediate and all distant environments, which in other words is nothing but a true description of the UOROI itself! Any other description short of this, as normally studied by the human beings by way of abstractions in the laboratories so as to discount off scores of interactions as insignificant ripples, is not only inaccurate and ad hoc, but also a subjective description, with the degree of inaccuracy and subjectivity both directly proportional, not only to the quantitative and qualitative aspects of all those interactions that have been discounted off as insignificant ripples. Thus, the UOROI is the mother of all such infinite (subjective) realities, all being actualized by a large number of conscious brains interacting with the infinite 'pockets' of UOROI, each adopting varying norms and means for abstractions.

This has been the very basis of development of all physical sciences so far, and thus they all are subject to a degree of unpredictability and randomness. Bohm expresses the same viewpoint, (Bohm D.1957, pg. 141): "Hence, the determinations of any purely causal theory are always subject to random disturbances, arising from chance fluctuations in entities , existing outside the context treated by the theory in question. It thus becomes clear why chance is an essential aspect of any real process and why any particular set of causal laws will only provide only a partial and one-sided treatment of this process, which has to be corrected by taking chance into account. "



We may summarize salient features of the UOROI as under:

1. No 'things' exist: In the realm of UOROI, what exist are only infinite number of energy fields undergoing continuous metamorphosis through infinite interactions with each other, hence no 'things' or 'entities' exist.
2. From Causality to Non-causality: All the infinite reactions making up the UOROI are at their levels causal and determinate, however, since a human brain is totally entangled with, and is itself an integral part of the UOROI, no objective study of UOROI, in principle, by a human brain is ever possible, and hence any emerging outcome at any aggregate level as may be consciousnessed by a human brain will always remain an unpredictable, random and non-causal outcome.
3. Since no 'things' exist, there is neither an observer nor the observed; neither an object nor a subject.
4. No Absolute Time Scale: Since all these infinite energy fields are constantly changing, there is no absolute frame of reference available with respect to which, beginning and end of any interaction be established in absolute terms, and hence, the concept absolute time does not exist in the UOROI. Not only that, there is no past, present or future that can be defined with respect to an unchanging frame of reference in the UOROI.
5. It is One Unitary Whole: Energetically, the whole cosmos- the whole of the UOROI is a vast, unbroken continuum of interactions, and in that sense, is an One Unitary Whole having no distinctly definable parts whatsoever.
6. There is no way to distinguish between the living and the non-living, as all these are same- a bunch of interactions, and not only that, all living and non-living are mutually entangled in an inseparable way forever. Hence in the UOROI, there are no concepts of living and dead, nor any concept of order and disorder-and hence there is no arrow of time either.
7. In sum, from the Cartesian frame of reference, or from our subjective world view, the UOROI is Meaningless.

This proposed concept of UOROI is akin to that of *unus mundus*, which in generalized form, refers to an underlying unified reality from which everything emerges and into which everything merges. On this, Hans Primas has presented the viewpoint of Carl Jung in 'Complementarity of Mind and Matter', (Atmanspacher H. & Primas H., 2009, pg. 178): " According to Carl Gustav Jung, 'the idea of *unus mundus* is founded on the assumption that the multiplicity of the empirical world rests on an underlying unity, and that not two or more fundamentally different worlds exist side by side or are mingled with one another. Rather, everything divided and different belongs to one and the same world, which is not the world of sense' " (Italics as in the original).

Bohm too emphasizes this point of view, (Bohm D., 1951, pg. 140): "It seems necessary, therefore, to give up the idea that the world can correctly be analyzed into distinct parts, and to replace it with the assumption that the entire universe is basically a single, indivisible unit. . . . . Whenever quantum phenomena play a significant role, we shall find that the apparent parts can change in a fundamental way with the passage of time, because of the underlying indivisible connections between them. Thus, we are led to picture the world as an indivisible, but flexible and ever changing unit."

Now, let us analyze how our Cartesian world views consisting of rivers and mountains, of nations and continents, of airports and railway stations, and of you and me could emerge out of this ocean of interactions, in which no 'thing' of any kind, as such exists. The nature of UOROI as described above, implies visualization of an universe composed of infinite fields of energy, constantly interacting with each other, hence there are only reactions. Since all these infinite energy fields are constantly changing every moment, 'nothing' can ever exist as a non-changing 'thing' having some or at least one property retained unchanged over reasonably long periods of time so as to qualify as a 'thing' possessing that property. In such a universal realm of interactions, however, over shorter time periods, the interactions within a certain environmental pocket may happen to have a monochromatic energy band which acts as a sort of *common cause* for all the interactions happening in that pocket, thus they all tend to form a family of identical interactions all driven by this singular energy band; and thus behave in a coherent manner forming a loose aggregate, which is although certainly changing with time, but the rate of changing is such that it ensures the coherency largely remaining undisturbed during the relevant time periods.

When two such loose aggregates or 'clouds' both happened to have more or less equivalent rates of changing- *qualitatively and quantitatively*, (and also happened to share same coordinates of time and space, hence sharing the same environmental pocket at the same time), interact with each other, the probability of the interactions being of repetitive nature is higher than in the case when the two have, (either qualitatively or quantitatively) very largely mismatching rates of metamorphosis. Such *compatible* rates of changing would facilitate the nature and kinetics of the interactions between the two to remain more or less same over the time cycles that may be of a few seconds or of a few hours, or even days, depending upon the period of time they happen to retain their coherency as well as their rates of changing mutually in sync with each other. This means, during such a period, the two such energy fields, are having certain properties *vis-à-vis* each other that are not changing from reaction to reaction, that further means, the two exist as 'things' *with respect to each other*.

Now let us replace one of the two such 'clouds' with a human brain, the other remaining an environmental pocket. The state of a typical human brain, as we have analyzed earlier, is a spectrum of realities, the CCES at a given instant, which is constantly changing with time. So a CCES, having formed out of consciousness energies, is like an energy field in our description of the UOROI, which constantly undergoes innumerable energy transformation (consciousizing) interactions with all its environments; but however, at the same time it also behaves like a coherent loose aggregate, a 'cloud' having formed out of a particular bunch of reactions that all happen to have a *common cause* because all the consciousizing interactions happening within a particular brain are driven by commonly shared pleasures (positive or negative); and they all also

happen to have a *common root* because they all are so realized by the same bunch of neurons forming the aggregate of that brain during all such times; otherwise, in the long term, it is loose and would finally merge with randomness of UOROI. Hence, at least during such spans of time, this same loose aggregate displays a sort of coherence that is manifested through a certain repetitive patterns among all such reactions. Further, when such a coherent but loose aggregate-the human brain, interacts with the infinite variety of environments, certain environmental pockets would happen to have more or less same rates of changing - both in qualitative and quantitative terms, as that of the human brain, at least insofar as their individual characteristics responsible for the spontaneous interactions are concerned; thus increasing the probability for more repetitive interactions between the two. As the number of such repetitive interactions with a particular 'pocket' increases, the response time for the human brain decreases, and with the most familiar 'pockets', the response becomes instantaneous, thus establishing an instantaneous adaptability with that environmental pocket.

At such a stage, we can say that a good degree of compatibility is established between the two. During such a time period, the two are certainly changing in absolute terms, but at the same time, since both are changing in a *compatible* manner as signified by uniform patterns of changing *vis-à-vis each other*, the absolute changes thus do not have any significant effects on the probability of the repetitive interactions between the two, and hence we can say that the two have acquired certain non-changing characteristic properties *relative to each other*. At this stage, such a pocket is no more an environmental piece cut-out from the UOROI that is random and unpredictable, but it becomes a 'thing' having predictable and expected properties for that particular brain for that relevant time periods.

Well, each peak (or a valley) on its CCES at any time, is just one of such pockets of UOROI actualized as a 'thing', or more precisely, actualized consistently as a reality of pleasure or pain, over a period of time. We can also say that during all such periods of time, after having enough repetitions, the human brain establishes a degree of compatibility with each such pockets, and more specifically, such compatibilities are made possible only because the two are having 'compatible' rates of changing. I propose to term the entire mechanism of developing such compatibilities as Mechanism of Compatible Rates of Metamorphosis ("MCRM").

Bohm, while analyzing the modes of being, postulates similar viewpoints, (Bohm D., 1957, pg. 153) : " It is clear from the preceding section that the empirical evidence available thus far shows that nothing has yet been discovered which has a mode of being that remains eternally defined in any given way. Rather, every element, however fundamental it may seem to be, has always been found under suitable conditions to change even in its basic qualities, and to become something else, Moreover, as we have also seen, the notion of the qualitative infinity of nature implies that every kind of thing not only change in this very fundamental way but that given enough time, conditions in its infinite background and substructure will alter so much that it *must* do so.

Hence, the notion of something with exhaustively specifiable and unvarying mode of being can be only an approximation and an abstraction from the infinite complexity of the changes taking place in the real process of becoming. Such an approximation and abstraction will be applicable only for periods of time short enough so that no significant changes can take place, in the basic properties and qualities defining the modes of being of the things under consideration." (Italics as

in the original). The last statement tantamount to saying that the rate of changing is slow enough or is compatible with the act and agency of the observation.

Now let us see how MCRM has been pivotal in development of our Cartesian world views during all ages. A typical human brain has four basic *inherent* characteristics: 1. The human brain's sensorium can only sense aggregates, and cannot sense the parts at any other lower levels by any of the five senses directly; 2. It follows from this, that only the aggregates so sensed can be experienced as a source of either a pleasure or a pain; 3. With the proposed principle of Relativity of the Realities in force all the time, the human brain retains only the realities of pleasures on its CCES, de-actualizing all those of pains, and discarding all the rest as unreal, or as non-existing realities; 4. Developing constantly an adaptability to suit ever changing environments. Along with the constant changes in the environments, the nature of all those things on its CCES and their impacts on pleasure (or pain) also keep on changing with time; so much so that even certain things may turn from pleasures into pains, or into pleasures from pains.

Here exactly, the adaptive skill of a living system comes to play its most important role, by which it is required to learn to actualize all (newer) pleasures and discard all newer pains at the same pace as the environments around it are changing; thus its own culture as defined by its CCES need to keep on changing in sync with the environmental changes. But there is a limit a human brain and its physical systems can keep pace with very rapidly changing environments, hence as an automatic fall out of this limitation, the human brain always tend to cling to those environments (of pleasures and pains) which are either not changing too fast, or changing at a slow enough rate so that its survival becomes more predictive and compatible with them. This skill of identifying and clinging to those environments which offer compatible rates of metamorphosis is an important adaptive skill developed in time in all normal human brains, and also in all living beings but to varying extents.

The above four inherent characteristics define the basic functioning pattern commonly found among all human brains. In addition, all brains have scores of pleasures that are common to all humans, such as the air, water, food, sex, shelter, health, security, etc. A typical human brain with a particular set of time and space coordinates, after having certain interactions with various environments available at those coordinates, would be able to identify, first, which of them are sources of pleasures or sources of pains, and second, which of them offer the pleasures (or pains) having (more or less) unchanging features in repeated interactions, and accordingly, develop an adaptability vis-a-vis that particular source. In other words, sorting of the environments based upon MCRM remains always an important adaptive skill for all humans.

Now, when a large number of human brains having identical basic functional characteristics and a common frame of pleasures and pains we mentioned above, interact with the same environments, they all are likely to identify unambiguously, in an uniform pattern, certain environmental pockets as realities either of pleasures or of pains; and thus they all would react in an identical and predictive way in every repetitive interaction with all such environmental pockets. Hence, in early civilizations, all such environmental realities which happened to have compatible rates of metamorphosis relative to a particular human community during a particular time period, after repetitive interactions, had helped to develop corresponding peaks uniformly in all the individual CCESs of each of the brains in that particular era; or put differently, we can say

that, thanks to the prevailing MCRM, not only the erstwhile 'non-things' of UOROI had acquired a status of 'things' with respect to all those brains, all such 'things' had also become sub-universal realities for a particular tribe, for that time period. This phenomenon continued to prevail on all human brains in any age, and not only that, certain realities of the environments, in their more generalized forms, e.g. air, water, food, fire, wind, shelter, rains, animals, sun, moon, etc. happened to maintain MCRM conditions continuously in every civilization, with the result that, over the ages, the same have attained the status of universal realities. And since these all were invariably (only) aggregates being sensed and perceived by all humans (more or less) identically, development and continued maintenance of all such universal realities generation after generation, inadvertently led to a definition of Reality as a 'thing' existing out there independent of the observers, meaning the same can be 'observed' by all human beings identically and unambiguously; in other words, all human observations are truly objective. This belief in objective reality over the ages, became the very basis of Cartesian world views developed since early civilizations.

Further, during the last three centuries, with every new human invention and discovery pertaining to the Nature, the same notion became more and more firmly established, thus every progressive human generation believed more firmly than the previous one that the Nature around us is completely and (truly) objectively observable and knowable by we, the humans. In summary, this is how MCRM has helped, all through the ages, not only to have a common 'objective' basis of all our world views - the Cartesian basis, but historically, also helped the development of innumerable varieties of human cultures and civilizations as were feasible with the prevailing MCRM conditions in the environments during a particular period in the history. Nevertheless, since every 'thing' in the universe, by the virtue of omnipotent UOROI at the root levels, is undergoing metamorphosis constantly, MCRM conditions could not be maintained for very long periods, and hence no culture or no civilization could remain 'unchanged' for long periods of time; with the result that all of them underwent metamorphosis, but with varying paces, giving birth to newer cultures and civilizations.

Next, it would be interesting to note that the role of MCRM is as much crucial in development of any science as it is in the development of any human culture. In any scientific experiment, aimed at formation of a causal relationship that may define an event in the nature with better deterministic expressions than existed before, there are interactions between the observed, the measuring systems, (MS), and the (interpreting system of) the observer. The causal laws can only be formed provided all of the following conditions are fulfilled during a series of repetitive experiments:

1. An object or an event in the nature, referred to as the observed, maintains its properties under study fairly constant in accordance with the purpose of the study.
2. The various human brains trying to formulate the causal laws of a new reality have necessarily to reach more or less, the same standards for each level of the consciousnessing process, (described under Relativity of Realities) so that all observers are observing and interpreting through equivalent frames of reference.

3. These standards for each level, in other words, the overall physiological and CCES status of each brain performing the study are maintained at fairly constant levels during the entire course of the study.
4. The properties of the measuring system also in the same way, do not change or are maintained fairly constant during the course of the study.
5. The role of the consciousness energy, especially that pertaining to the  $n^{\text{th}}$  level of consciousness, although is of prime importance as it is the driving force to initiate the study, would not at the same time be over-influential so as to grossly affect the very observations and interpretations that are consciousnessed at the previous (n-1) level.
6. The interaction between the measuring system and the observed will not affect the properties under study in any significant way.
7. The effects of ripples in actual environmental conditions as prevailing in the UOROI for the particular event under study are non-significant with respect to the purpose of the study, so as to permit its 'objective' study by abstracting the event under simulating conditions in a laboratory set-up.

Of the above listed conditions, the three conditions of 1, 3, and 4 demand that the rate of changing of the observed, of the observer and of the measuring system remain fairly constant during the course of all repetitive experiments, hence, even if all these three are changing- and they do change in fact, the rates of changing should be such that their effects on observations and interpretations on the properties under study are non-significant, so as to allow identical and repetitive observations in each experiment. When these three conditions, (along with the rest all), are complied with, we can say that the three are compatibly changing with respect to each other so as to interact repetitively in a predictive manner, which then can be formalized into a causal relationships.

This is how any new causal law gets developed in the laboratories under the controlled conditions to ensure repetitive interactions between an abstracted pocket of environment, the measuring system and the observer, so that the product behaves with predictable outcomes. But in the larger contexts, in the realm of UOROI, since all such causal laws are valid only in limited conditions, conditions of MCRM cannot be maintained for long, which may then lead either to erroneous predictions in certain conditions, or even to development of newer set of causal laws replacing the older ones.

Not all pockets of UOROI can offer MCRM suitable for a typical human brain. For example, certain ecological phenomena remains outside our purview basically because the rates of metamorphosis in such phenomena are so slow, perceptible and measurable changes can only occur over hundreds of years or so, and thus practically remaining unchanged through several generations; thus making it extremely difficult for the scientists to predict any such small changes happening over a short period of time. On the other extreme, certain realms of sub-sub-

atomic particles, wherein multitudes of reactions are happening over a trillionth of a second, real time study of all such interactions forewarn a near impossible situation. Interestingly, in the universal hierarchy, the human brain faces the problems of incompatible rates of changing particularly with the realms at the extremes, either with sub-sub-atomic particles, or with those at the other extreme of very large systems like ecological systems or celestial systems. And against these, only those realms falling somewhere in between these two extremes have some possibilities to have a MCRM with the human brain; and this is very natural because the human sensorium, by default, can consciensize only certain aggregates at a certain level in the universal hierarchy, and cannot sense or interact the same way with either the atomic realms or very large systems directly.

As a result, historically, the human progress in science could start only with such things and events that could be observed by the unaided five senses, which in the course of time, with the help of new causal laws and tools thus developed, could proceed further to explore the two extreme realms in greater details. It can be noted that such a historical progression could only have happened the way it has happened and that could not have happened the other way round only because of the possible MCRM bridges that could materialize from time to time between the progressive states of human brains on one side and the environmental pockets under study on the other side.

And so phenomenal has been the human progress for the last three centuries or so, it led the human kind to form such beliefs that are quite opposite in nature to the characteristics of the very UOROI from which they all have emerged! These are as follows:

1. Nature is definable in terms of things existing 'out there', and all causal laws centered around this concept are free of errors, and represent the true nature of things objectively.
2. In studying an event or a thing based upon the abstraction methods, the effects of ripple forces can be disregarded assuming the same would not have any significant effects on the observations and also on the causal laws thus derived.
3. The primary observations through five senses of anything or any event in the nature represent unambiguously the objective characteristics of the thing/event.
4. The human observer with its state of consciousness and his experimental set-up in no way affects either the observed or the observations of an experiment, and hence, all scientific knowledge in all branches of physical sciences developed so far is truly objective in nature.
5. It is correct to assume, in most experiments, that the observer and the observed do not change their properties during the course of an observation.
6. Since all phenomena in nature as studied by the human brain are believed to exist independently, there is a beginning and an end of each event that are independent of

the observers, hence absolute time does exist, and so does the Kaalchakra – the wheel of time, revolving around the past, the present and the future.

7. There exist in Nature, Orders and Disorders, relative to a system under study, and hence, the arrow of time too, does exist.
  
8. The cosmos is not One Whole Entity, but is made up of infinite unitary entities or things. Thus all living- and also non-living- are entities, existing independently and uniquely.

In contrast, in the Ultimate Objective Realm of Interactions, there is only one reality, and that is the reality of interactions, which in other words is a reality of 'no-things'. All forms of matter-living as well as non-living, can be reduced down into interactions which all are inevitably entangled with each other, and thus collectively form the UOROI. The present day sciences have probably been able to decipher all the matter in terms of reactions that are happening from sub-atomic levels to aggregates' levels. But let's not forget, these sciences are established by the human mind, which in itself is basically a process, or more precisely, an infinitesimally small *processing link*; and an infinite number of such links make up what we termed as the UOROI, One Whole process engulfing the whole of the cosmos. Hence truly objective studies of the nature by a human mind is, in principle, impossible forever .

We should look at every development and formation of any scientific law in the past , present or future just as a process in itself, that can be dissected into a series of consciousness interactions between the human mind and the environments. The human mind, in a particular state of the existing knowledge at a point of time, which is but, again a basket of all such past laws and principles, using the available existing measuring systems, interacts with the existing event of the Nature being studied; and when all these three happen to have mutually compatible rates of metamorphosis, a series of repetitive interactions between all these three would help establish certain causal relationships, which then takes form of a (new) scientific law. Hence, to this extent, all such causal laws are purely coincidental, and hence also ad hoc in a sense. We can in no way state that our study of the Nature is complete as of now or would be so anytime in future, because not only the human brain would always remain totally entangled with the environments, but also, the scores of interactions that may belong to a large number of non-compatible realms, would remain outside our purview forever. We can only state that our study of Nature would forever be incomplete and non-objective.

Bohm, arrives at similar conclusions, (Bohm D, 1957: (Pg. 166) : "Now, if there were a final and exhaustively specifiable set of laws which constituted an absolute truth, we could regard all errors as purely subjective characteristics, resulting from uncertainty in our knowledge concerning this absolute truth. On the other hand, in terms of the notion of the qualitative infinity of nature, we see that *every* law that can be possibly formulated has to have errors, simply because it represents nature in terms of some finite set of concepts, that inevitably fail to take into account an infinity of additional potentially or actually significant qualities and properties of matter."



(Pg. 167): "Of course, we cannot determine all the errors in any given law completely; and as a result, we can never actually reach an absolute truth with regard to the law in question." (Italics as in the original.)

However, Heisenberg arrives at similar conclusion from a different line of thinking, (Heisenberg, W. 1958, pg. 66): " Any concepts or words which have been formed in the past through the interplay between the world and ourselves are not really sharply defined with respect to their meaning; that is to say, we do not know exactly how far they will help us in finding our way in the world. We often know that they can be applied to a wide range of inner or outer experience, but we practically never know precisely the limits of their applicability. This is true even for the simplest and most general concepts like "existence" and "space and time." Therefore, it will never be possible to arrive at some absolute truth."

Such limitations of the human brain were realized by the scientists- probably for the first time, in the early twentieth century while performing certain experiments in atomic and sub-atomic levels. All though limited to atomic realms, the subsequent developments and their repercussions were powerful enough to shake up the objective foundation of the natural sciences developed thus far. The reality of the entanglement of human consciousness with the very Nature under study was realized, although very hesitatingly, for the first time in the history when the quantum mechanics- both a hero and a villain- arrived on the horizon . Hero, because, it opened up a whole new vistas for the human kind to explore and understand the world of atomic and sub-atomic particles in a totally different way; and villain, because, in accepting it, inevitably it made the scientists realize about the inherent limitations we humans have in objective understanding of the Nature at large.

In the end, let us analyze how the MCRM has worked in developing the notion of an unchanging entity 'I' within all of us: On one side, we have a human brain which itself undergoes metamorphosis all the time, -as manifested by its continuously changing CCES and also by its continuously changing neurobiological conditions with the process of aging. On the other side, we have an actualized reality of an imaginary overall 'I'- comprising of a physical 'I' and a mental 'I', both of which as analyzed earlier, are but inseparably entangled with the UOROI and thus, are constantly changing. Hence, an overall 'I' is also continuously changing, and its emergent state at any instant is indeterminate, discontinuous and random. How does an image of an unchanging 'I' emerges from the interactions of these two ever changing 'clouds', the brain and the overall 'I' ?

We can explain it this way: The first images of an 'I' in every child's brain are developed as a source of several pleasures, which is, just like all other 'things' of pleasures, e.g. toys, candies, parents etc, also a 'thing' of pleasures, being physically manifested through his/her physical body, and also known and endorsed by all others with a given name, body etc. Thus, the body's characteristic features like facial contours, smile, gait etc. remains the strongest physical manifestations of this imaginary reality of an overall 'I' for all throughout the life, because in spite of the fact that all these features are certainly changing every moment, at the aggregate levels all remain more or less unchanged over short periods of time; hence the overall image of an 'I' remains the 'same' from day to day, year on year, without any abrupt break or change. On the other side, the brain's basic functioning, that can be expressed through its neurobiological reactions at the neurons' levels, remains identical in nature all through the life for any and every

kind of pleasure (or pain); no matter the pleasures are physical in nature like an ice cream in the hand, or non-physical like an imaginary entity 'I', the brain treats all the pleasures alike as realities.

Further, as we have analyzed earlier, every consciousness interaction with the environments however diverse it may seem as being directed towards actualization of seemingly very different kinds of worldly realities (of pleasures), each one is ultimately aimed only towards the reinforcement of this imaginary entity of an overall 'I' in one way or the other. Hence, in this context, most of the infinite consciousness interactions are repetitive in their basic nature, even though the very nature of the reflex actions in each consciousness cycle would keep on varying largely. On extrapolating this, we can see that each brain interacts with its own overall 'I', through innumerable repetitive interactions, (- which we have analyzed earlier as reactions of awareness); and this helps to build up right conditions for a MCRM bridge between the two ever changing realms, the brain and its overall 'I', and thus results into actualization of a reality of an 'I, within' the body as an unchanging entity, in spite of the fact that the same is undergoing continuous metamorphosis.

So to the list of above characteristics of a Cartesian world view, we can now add the following characteristics pertaining to an actualized reality of an 'I' within all of us, because these also are as common in all world views as those listed above, thus forming a part, -and rather a very important part, of all our Cartesian world views.

9. 'I' is the doer of all deeds, and every deed manifests execution of my free will.
10. My 'I' as an entity exists, manifested mainly thru the physical body, along with many other characteristics and attributes which are all unique and independent of the environments; and further, even if many or even all these attributes (physical and mental) may change or vanish totally in course of time, the entity 'I' within the body remains the same as was in the childhood, and is thus unchangeable and indestructible till the last breath.
11. The whole universe around me could be explained in terms of causes and effects. I am always the cause in all successful feats, but in case of failures, the cause lies somewhere else, either with my destiny, or my bad luck, or my Karma of last birth, or with anything else but certainly not with my 'I'!!

But no MCRM bridge can be maintained forever, and at the end of the day, each civilization, each culture. Each scientific theory or each 'I', is bound to lose its 'unchanging' characteristics to merge with ultimate randomness of the UOROI. In other words, every 'thing' and any 'thing', including each 'I' of our consciousness Cartesian worlds, in the end has to become a 'no-thing' of UOROI, but nevertheless for that intermediate period at least, however short or long it may be, a 'thing' does get created in our consciousness realms out of the realm of 'no-things'.

**Well, all our world views are nothing but a conglomeration of such 'things', hence both ad hoc and temporary in nature. And since all such 'things' are not true representation of UOROI, these are all in a way illusionary and so are our notions that our world views, based upon the causal laws formed by us, are causal, determinate and continuous. In contrast, the UOROI in its totality, otherwise is totally unknowable to us, and any outcome at any aggregate level**

**emerging out of this UOROI shall always be indeterminate, random, discontinuous and non-causal for us.**

*(Continued on Part IV)*