

Essay

A Perspective on Consciousness

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Abstract

Any essay on consciousness must have an explanation of the subjective nature of consciousness which is relevant in the context of the apparent cyclic existence of the universe. As part of that context there is the obvious assumption that mass and energy are manifestations of matter, in which all matter transforms to become energy at the end of a cycle, evolving back into matter at the start of the next cycle. Science does address to some extent this model of evolution of matter and the subsequent devolution into energy. The philosophies of the various schools of thought in the Hindu culture have long held the belief in a cyclic universe, a culture with its beginnings considerably earlier than western cultures. In this essay, I will use a system of knowledge from the Yoga Sutras of Patanjali which reflects one of those Hindu philosophies as described by Usharbudh Arya. This philosophy sets out to explain the universe and consciousness through the diagram below, depicting the apparent descent of consciousness into matter and infers the physics of the physical universe and mind.

Keywords: Perspective, consciousness, knowing, mind, memory, retained information, simultaneous, omnipresence, omnipotence, singularity, quantum state, nonlocality, Samapatti.

1. Some Definitions

Some definitions of the Sanskrit terminology used in the diagram are listed below:

Prakriti: Matter as a potential, inferring there is a universal substrate from which matter evolves.

Mahat: From the spiritual perspective, Mahat is the reflection of Pure Consciousness as the potential to know within matter. From the practical or rational perspective, Mahat is the dispassionate observer operating beyond the sense of Self.

Buddhi: Buddhi is the faculty of discrimination of this and not that within that potential for knowing.

Ahamkara, the ego, the appearance of self, I Am, is impelling both mind and body.

Sattva, Tamas and Rajas are the three **Gunas**, states of activity within the Prakriti, with Sattva being luminous and expansive, Tamas being dull and solid, and Rajas being the activity between Tamas and Sattva, impelling both. The diagram can also represent a state of inactivity when the gunas are in equilibrium. Sattva becomes Mind, while Tamas becomes matter. At the lower part

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of the diagram are five subtle elements which can be regarded as potentials, and five gross elements which are the precursors of matter coming from the potentials which become matter, and finally the traditional natural forces.

2. Patanjali's Sutras & Samapatti

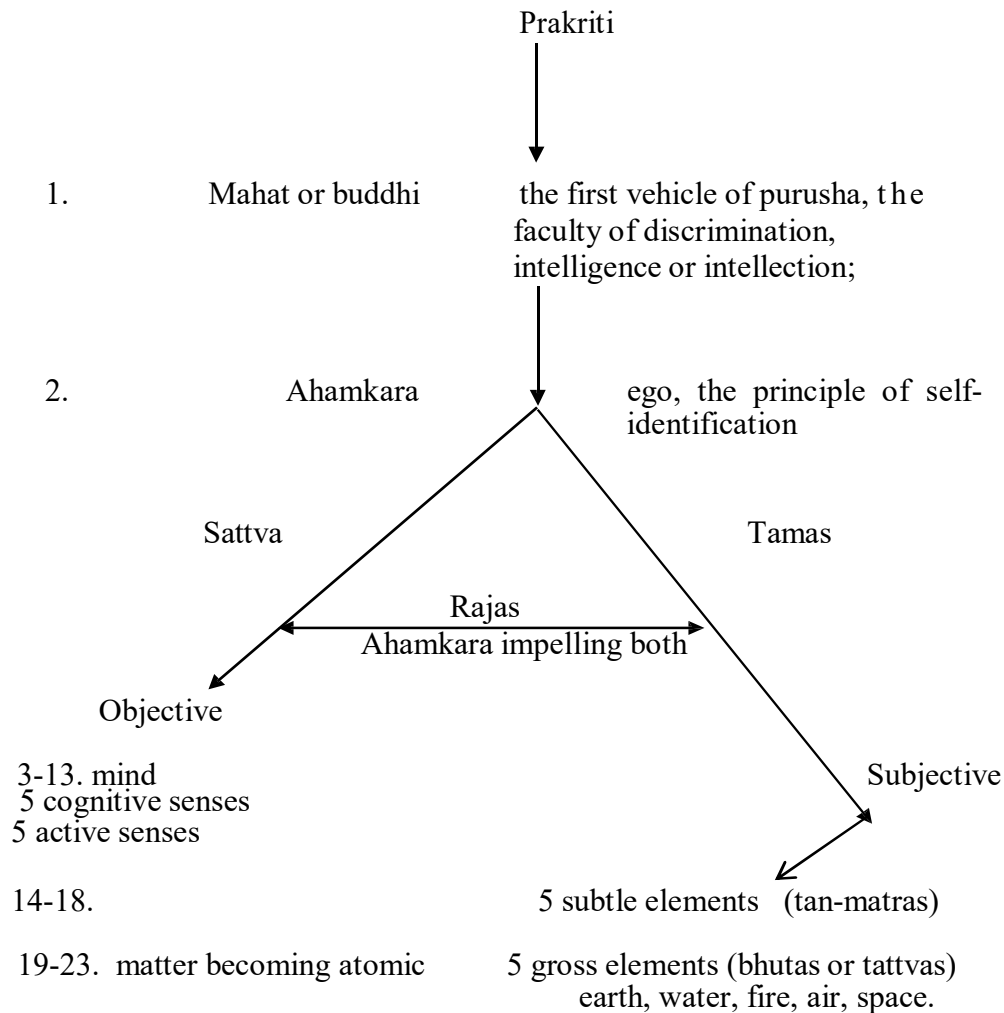


Fig. 1.

The first time I saw this diagram I thought it was familiar, later realizing it looked like the Greek letter lambda λ , a symbol for wavelength; I also thought it looked like the Chinese character, Shen 人, which represents man, and the spirit of mankind after death. I can see both are relevant to the diagram and may help me explain the connections which I believe exist between consciousness and matter.

The overarching message from Patanjali is that Purusha, Pure Consciousness, is external to the material reality, and the diagram Fig. 1., describes the transition of Conscious from an external presence into what will evolve to become conscious matter and spacetime. The final evolutes, 19-23 on the diagram, represent the point at which matter becomes atomic, providing some common ground in which there is justification for a conversation, in a philosophical sense and a scientific sense too. This scientific context comes from the Sankhya philosophy within Patanjali's Sutras.

For a reader with no experience of the Hindu philosophy, the inference that information plays a role in the whole process can be challenging. There is also the question of information in the diagram being simultaneous. This fact of being simultaneous is well known in quantum theory, expressed as a particle being in several quantum states 'at the same time'. In the spiritual interpretation of the diagram as the nonlocal state, one would say the particle or person is known by an omnipresent, omnipotent and all-knowing God. In a philosophical sense it may be the information retained in the context of singularities involved in an event, with the subsequent ensemble of information coming from the 'sum over histories' of that context. I will explain this term a little later in the essay.

In the context of a cyclic universe, I assume the diagram represents a hypothetical singularity into which all matter has become energy and all space has become a single point at the end of a cycle. From a practical perspective, the diagram is a novel model of the quantum state, novel in that it is describing not only fields, forces and particles; it is describing information as data and as conscious awareness in a space that is not empty but a closely packed continuum of singularities whose dimensions are confined within spheres or cubes, the diameter/width of which is the Planck Length of 10^{-33} cm. Moreover, it becomes obvious that the 'real' dimensions of spacetime are relatively non-existent in the normal sense. Instead, spacetime at this level has become the nonlocal and no-time quantum state from the perspective of a relatively dispassionate observer.

Two considerations here are to recognise that this dispassion is available to an observer who is at the state of Mahat, and that Mahat is an attribute of every one of the singularities. Mahat is the point on the diagram where the three gunas become active, a state Arya calls the 'first disequilibrium'. The obvious question now becomes what was in equilibrium? The equally obvious answer is energy; in what is essentially 'nothing' we are discussing creation, we are inferring creating matter as in $E = MC^2$, although here it will be $M = E/C^2$, which I presume to be zero-point energy at a singularity with a spatial dimension of 10^{-33} cm., oscillating at a frequency corresponding to a wavelength of that same 10^{-33} cm. If the singularity is a spherical point then so is the waveform, and with no space dimensions it must be a standing wave.

I acknowledge others have reached this conclusion long before me, which is not surprising given that I am not an academic, just a thinker. I had simply recognised an association between this spherical standing waveform and the interference of reflected wave fronts along a curved beach and a projecting headland I had observed on my regular walks. I reasoned that the numerous spherical grass balls along the shoreline were the gathered grass that had been blown into the sea, and the wave action formed the grass spheres which subsequently washed ashore in the hundreds.



Fig. 2. Sea grass balls²

What is interesting are the variations of shape and texture in these balls. I would guess the shape is a function of the interaction of the different reflected waveforms while the texture is a function of the type of grass and other matter blowing in the wind. In nonlocal space each oscillation will create a memory of itself, which means that all real spacetime is populated with oscillating singularities producing a huge number of harmonics in much the same way that the reflecting wave fronts produced the variations of the size and form of the grass balls. I believe this variation can account for the oscillating singularities' capacity for memory and replication, while the grass balls might suggest thoughts about matter originating from waveforms within energy, while the variations arise from what could be the equivalent of possible histories of a particle's possible path. I will leave the reader to ponder on this model of reality and move on to address the description of memory given in the Yoga Sutras.

In YS. 1.11., Arya's description of memory begins with 'a cognition arises' and reading those words I began to develop my understanding of this Yoga model of consciousness from scratch, having accepted that I knew little about it.

There are two kinds of memory; the first is one in which a cognition arises 'when the process and instrument of apprehension is primary', which means that the cognition itself is the intelligence which I referred to above as information. Intelligence on the diagram, from which I infer that the 'instrument of apprehension' is Mahat, represents conscious information as an observation. The 'process of apprehension' is the activity related to Ahamkara and the senses, and their potential to respond to an input at any level on the diagram, whether from direct experience or from the memory of an experience. The distinction between the instrument and the process highlights the contrast between the Self at the level of Ahamkara and the apparent lack of Self at Mahat. The truth is there is only one observer, Mahat, which is also the true Self. The lack of the sense of self at Mahat is what gives it the title of dispassionate observer.

To understand this diagram in a more familiar sense one needs to recognise that Mind ranges across the entire diagram, depending entirely on which specific level is being engaged by Mahat. Mahat is the dispassionate observer whose cognition is knowing what it observes, while Mind is whatever enters our awareness, which means any information as a direct experience or in memory, inferring it is from the perspective of Ahamkara. My Samapatti experiences are from that level of Mahat with very little or no input from Ahamkara, which is why I have this first kind of memory; it is why I never have a replay of an experience and why I don't experience grief; I only have the intelligence of an observation of what happened as a narrative, 'this happened when ...'

The second kind of memory is the more familiar understanding of it, in which there is the process and instrument of apprehension and the object being apprehended (known) by Mahat. In this case it is the object which is primary as the cognition/awareness. This cognition creates a samskara in the mind, and that samskara creates the memory of the object. The persistence of a samskara and its effect is called karma. Referring back to the diagram, the samskara is the neural presentation within the brain from the body's sensory systems during an experience. The conscious memory of an experience comes from the relevant neural presentation of the samskara and the sensory responses as an observation, and we call this consciousness.

In YS 1.41., Samapatti is described as the coalescence of two minds, and uses the same terms, 'the process and instrument of apprehension', used in YS 1.11. As mentioned above, Mahat is the instrument of apprehension, while the process of apprehension relates to the final evolutes on the diagram, which are the 'neural correlates' of neuroscience, essentially the brain's system of integrating the sensory responses of the body and its samskaras as information into the conscious awareness we call Mind. This is done by Mahat, replicating the original samskara as the context of the information. This happens at the bottom of the diagram where 'matter becomes atomic', forming the neural correlates corresponding to the original experience. The matter in question here is the material of the specific synapses switching on or off, with the overall neural configuration providing the psychosomatic responses in one's conscious awareness.

Samapatti is also the coalescence of the knowing of Purusha and Prakriti at the level of Mahat, where Purusha is the seer and Mahat is the subject. From this I conclude that Purusha's knowing is the first kind of memory, which is why Patanjali tells us that Purusha is 'without distinguishing mark', which means Purusha does not retain what it experiences through Mahat, in exactly the same way that the seer does not retain her/his experience of the subject in Samapatti.

In my earlier essays I described some of the experiences I had while in the state of Samapatti, a state in which the mind is essentially empty; an impartial witness without identity or ego. In Samapatti the seer, a person in that empty mind state, can have the experience of another living entity, usually termed the 'subject'. The word, experience, is central to this whole discussion because in this coalescence of two minds is what causes the subject's experience to be known by the seer. It is also what causes the seer's stillness/empty mind to be experienced by the subject.

In that state I was able to watch a cat's dream from the cat's perspective. In another I was able to have the subject see what I had only thought I would want to do for her leg fracture; I am unable

to visualize anything, which means I did not have an image of what I thought I would want to do for this woman's leg. In Samapatti, the state of the seer's mind is present in the subject's experience *at the same time* as the state of the subject's mind is experienced by the seer's mind. This infers mind, memory and consciousness are information which is active in the quantum state.

When a Samapatti session is finished, the seer no longer has the subject's experience and does not retain that experience as a memory; the subject continues to have the seer's experience because it has become a memory for the subject. From these examples we can see that a seer in Samapatti does not create a samskara; the subject does create a samskara of the experience, which is a significant outcome for the subject; it means that the experience has a real effect on the subject every time it is remembered.

Here we can begin to understand that what the seer knows, such as me 'watching the cat's dream', is really Mahat as the instrument of apprehension which is knowing. What in fact coalesces is Mahat knowing simultaneously the seer's mind and the subject's mind. The seer is aware of both viewpoints because her/his mind is operating at the level of Mahat. Here we note that the seer is aware of the subject's experience and can differentiate between his/her own experience and that of the subject through Mahat's attribute of discrimination at the level of Buddhi. Everyone can make a distinction between 'this and not that' and will be aware of doing so; the coalescence of the two minds is really about Mahat's simultaneous observation of the neural states of both seer and subject.

The distinction between these two simultaneous observations is really made by the seer in each case; The seer knows 'which is which', while the subject will only experience what is different from her/his perspective, Mind, and know that something has changed. In fact, what has changed is the subject's neural correlates which now produce a different awareness, namely the stillness felt and known by the seer. Repetition of the Samapatti periods will strengthen this awareness of stillness in the subject and the change can be accepted as a healing experience. In a more familiar context it is called learning; it is also the deliberate creation of a samskara and its associated karma to produce a beneficial response.

The fact of this simultaneous cognition and its associated discrimination have often been thought to be due to a communication in the form of electromagnetic radiation from the brain. Considering there is only one observer, Mahat, which is simultaneously in both seer and subject the need for a system of communication lapses; in its place we find action-at-a-distance. This is a factor mentioned by Wheeler and Feynman³ in their studies of quantum mechanics and particles; it was something they believed should be relevant in their discussions and had set it aside due to an inability to fit it in their modelling at that time. Perhaps information didn't fit with the mathematics of quantum mechanics at the time.

I refer to the work of these physicists because I believe their focus on the quantum state of particles is similar to the focus of a person in Samadhi. Their intensity of focus is the same as a person in Samadhi and would have a them enter a similar state in which the outcome of their focus differs from that of a seer in Samadhi only in the way it is expressed. As scientists their thoughts are expressed in the mathematical language related to their craft. To some extent, each

would use a similar neural map to access the same understanding when communicating their thoughts about the same questions and answers. The Sankhya philosophy in Patanjali's Yoga Sutras is evidence that the ancient Vedic culture had deduced this understanding of science as we know it a very long time ago and had been able to present it as an integral part of their spiritual beliefs.

I first encountered what I saw as the similarity between science and the Yoga Sutras in my discussions with Bevan Reid², in which he introduced me to the concept of information in space. He also led me to Bohm's Implicate Order⁵ which was infolding and unfolding in matter. What I gathered from reading about Wheeler and Feynman in Geons, Black Holes and Quantum Foam³, and The Quantum Labyrinth⁴, is that they spent a considerable amount of time on the topic of quantum potentials somehow determining which of the myriad of potential paths was selected by an electron in an experiment designed to study the scattering of electrons.

Feynman made a connection between the potential paths and Fermat's principle of 'least time', calling it the 'path integral method' and applied that to the wave fronts at the level of elementary particles. Wheeler renamed it as the sum over histories. From my perspective, least time reminded me of effortless effort from Lao Tzu's Tao; there it is called wu wei, which is known in science as least action and I assumed a relationship between these two principles. In this discussion about consciousness in reference to information in the quantum state I would call least action a context. There have been suggestions that a future event such as the final path can influence the decision made earlier to select a path; John Wheeler set up an experiment which did prove this was the case, giving rise to the concept of time being able to run both forward and backwards at the quantum level of state.

From the perspective of Mahat choosing the electron's path being taken in this nonlocal quantum state, this could mean that every path and outcome were observed and remembered by Mahat before the experimenter chose to make the measurement. At one point, Wheeler said it was as if 'there is only one electron', which I think infers that the electron takes every path simultaneously to find the optimal path. This points to 'there is only one observer, Mahat'. A sum of the similar histories for the individuals taking the measurements can lead to the same outcome because the similarities are effectively the same or similar samskaras which are inherent characteristics of everyone's experiential histories, evoking similar results which are taken to be proof. The obvious question here is one of where or from whom might this collection of similar histories come? The answer is that they come from memory, which begs the next question; whose memory?

Considering the ideas of the scientists mentioned above I can understand they are all suggesting the same model as that in the diagram. Wheeler's Quantum Foam, with its particles oscillating between the states of real and non-real, is Mahat the observer on the diagram, while the outcome of the oscillations is the observations infolding and unfolding of the information related to the observation as memory which is Bohm's Implicate Order, validating his notion of matter containing information and Reid's notion of space containing information, which is accessed through its related context. The infolding and unfolding of information can also be an analogy of the water cycle, in which the same H₂O is recycled in an at times empty sky; it is always the same water, never new water.

My own view about Quantum Foam is that in a physical sense it is Rajas on the diagram, oscillating between matter and non-matter, and between Mind and Body in a consciousness sense, with both existing simultaneously. I would even venture to say it suggests to me that it is an oscillation between the standard model of physics and consciousness, perhaps even between matter and anti-matter but that may be a stretch too far.

For each one of us, our body is a collective of singularities within every cell, each of which holds the collective experience of the cell's sensory histories. Ahamkara is what we call self, soul, spirit or Atman, and this is represented within the whole of the brain; our fundamental samskara; our context as a specific set of neural correlates. It is a simultaneous suite of information, updated moment by moment and has the conscious point of reference called 'I'. Much of this information is unconscious in the sense of being aware because we are only consciously aware of changes in the current moment in the context of 'me'.

The deeper forms of 'me' at the level of the many singularities in any of the components of a cell or a platelet all have their experiences and relationships with other similar components of me with each having a sum of histories as their specific context. The information they draw from their memory has an effect on my overall sense of self and wellbeing and it is something we never consider in relation to consciousness, but just like any other samskara each of these parts of the matter of me contribute to the whole that is this consciously aware me.

If processing of information happens in the brain, sum over histories interpreted as least action could be related to the energy used by the brain, making the outcome 'most cost effective'. The importance of context is generally accepted in respect of accessing a memory; even more so in considering the diagram because every action under examination is simultaneous in this nonlocal state.

I asked myself what sum over histories means in terms of information in a practical sense as I would expect it to be used in the brain to decide something for instance. I decided it must be the same as any other decision which I believe involved the memory of earlier experiences. Since we don't usually think of a particle having a memory, think of it as an activity observed by Mahat. In the case of Feynman, it would be Mahat's observation of him thinking about the problem; this is why I use that term to infer a decision made at the quantum level which has an effect on real matter.

It would be fair to say that samskaras are the histories being summed in the decision process, and in practice the principle of least time/least action does indeed take a measurable time. We can contrast this with wu wei, which refers to a person at the level of Mahat, a person some would call a rishi or seer. This person would simply let nature follow its course, least time here comes from not distracted by the 'possibilities' one may try to imagine; and the decision would manifest itself in a way that would serve the whole rather than the individual; least action also comes from not imagining.

When considering the diagram in terms of consciousness, we assume we are considering the minds of the living and may not notice that is not the always the case. The quantum

'measurement problem' has been described as the result of the observer taking the measurement, and if we assume the observer to be Mahat, the observation on one of a pair of entangled particles will influence its partner in that pairing. In a general sense, two particles become entangled when their 'parent', an earlier particle, decays into these two particles. Mahat's observation of the parent particle remains the same observation on the entangled 'twins', because the discrimination available to Mahat retains that initial observation plus the division into two different parts of the original. In other words, Mahat 'knows' the parent particle is now two particles because the parent particle is in effect the self, and that identity is passed on to its clones, now the two particles. In simpler terms, if I have ten cents and change that coin for two five cent coins, the sum remains; in my mind it is still ten cents.

Science tells us that a person making a measurement of spin 'up' on one particle would find that a subsequent measurement on its twin would show a spin 'down' because the sum of the two measurements must equal 1. This figure also represents the common history of the two particles, the irony being that science uses mathematics to signify what is a recognition of the original particle's individuality, 'I', ignoring the possibility that 'self' exists even at this quantum level of reality.

The question of whether this subsequent measurement on the other entangled particle is valid irrespective of the distance apart at the time of its measurement, is answered by the fact that the same observer is effectively measuring the same particle wherever it happens to be. For this same observer, the exercise can appear to be an action-at-a-distance, which it is, and it is also about having the same context. The observer Mahat is the seer and the particle being measured is the subject in a context of a Samapatti experience because Mahat is the only observer. Mahat is a characteristic of every singularity which gives the appearance of action-at-a-distance when a measurement is made on a particle taken to a remote location before being measured.

Returning to the question of whose memory, brings us back to the question of retention of experience as information in nonlocal space, a question related to my earlier assertion that the diagram is demonstrating a quantum state in which Mahat would know the histories of every particle. In this quantum state every history of the path of every particle exists simultaneously because in that nonlocal space, time and place are not relevant. The experimenter has obviously decided to conduct the experiment with the intention to determine which of the many paths available will be chosen, and that defines the context of the measurement, a context which has every possible path.

The experience of every particle is relevant to the momentary context of its observation, and this is retained as an observation by Mahat of the experience within that context, remembering that every possible path is simultaneously relevant in any momentary context of making an measurement in this specific experiment. If we accept the diagram is valid within a cyclic universe, then it would be valid from the moment before the first particle came into existence and going forward to now. From the first appearance of living matter, experience would be retained in that nonlocal space as described in the example of the entangled particles. The experience retained by Mahat would still be available through context, and this provides the histories of particles mentioned in determining which path a particle might take in an experiment, with the experimenter and the measuring equipment forming the context.

Patanjali and other teachers speak of Atman, the first man, and say that this ‘essence’ of humans is retained at the level of Mahat. I would suggest this is an alternative way of saying it is the memory of the experience of the first life; the first context of life retained at Mahat. The first living single celled form replicated by cell division, cloned in other words, and every copy of itself would incorporate the memory of every other copy and vice versa. With the evolution of sexual reproduction this data sharing was no longer available and was replaced by the evolving of cellular information into what we call DNA. At conception the ovum is presented with the male’s sum over histories in the form of hundreds of sperm. The surface of the ovum represents the female’s sum over histories when a particular point on that surface represents the context which selects a particular sperm for fertilization.

Prior to the fertilization the ovum is entangled with the ovaries from which it separated and therefore, its former identity of the mother remains its context in exactly the same way that a particle which subsequently decays into two entangled particles retains its identity as a context in each of the entangled particles. The subsequent development of what is now the embryo retains that entanglement up to and beyond its birth. This retained identity gives weight to the philosophy that the now pregnant woman has the basic human right to determine what happens to her whole body, including the embryo. I think the same right should apply to everyone’s end-of-life decisions.

In my view, fertilization initiates a mutation of the ovum which has become a clone of the mother, an embryo which is clearly female. During its gestation the mutation may change the final gender of the embryo which would be related to the sum over histories. The population increase over the past centuries increases the variation in those histories, giving rise to more variability in the degree of gender an embryo may develop. This will have some bearing on the indefinite expression of femaleness and maleness in a person.

The selected type and degree of gender does not end the original entanglement with the mother; the infant retains its entanglement with its mother while its identity changes over the first three years, when the infant develops its ego, Ahamkara. The entanglement of mother and infant is a quasi Samapatti, which accounts for the mother’s ‘intuition’, not unlike the intuition of a researcher or scientist deeply focused on a question as mentioned earlier.

Patanjali tells us that all of the memories ever experienced are accessible in that state by holding just the question to be answered in mind rather than a live subject, and in its own time the answer will emerge. How accurate or relevant the answer will be is dependent on how accurate and specific the question and the degree of one’s Samadhi. There are many people who can perform ‘remote sensing’, and while this has been useful for them the skill has been throughout mankind for millennia. It has been only in recent times that remote sensing has become relatively acceptable in more formal quarters; previously it has been known as a psychic skill, eschewed by both science and religion for much the same reason; it is a challenging concept not yet clearly understood, which accounts for its rejection.

At the level of people making a decision/measurement, their own experience/samskaras will determine the outcome. Education employs a similar methodology to teach a specific skill,

modelled on earlier skills that had evolved to teach when to fight or flee in a survival situation. If a group of people share the same samskara(s) such as a culture of belief which creates a common memory related to an agenda item, it is inevitable that all would reach the same decision, provided there were no other samskaras related to the same item. In daily life people make decisions without being aware that the process itself operates outside of conscious awareness; we become aware of the decision after it has been resolved by the process. The process in question is straightforward, irrespective of whether one is considering thought, imagination or making conversation. It is the process of apprehension mentioned above in respect of memory and Samapatti, and it is also present in thought.

3. How does all of this apply to consciousness?

What set me off on the path to understand consciousness was having this experience of knowing two minds. Patanjali tells us that the state of Samadhi needed for Samapatti is one in which the mind is under control, and by that I mean being firmly focussed on the subject exclusively, to the point of suspending the fundamental samskara, me. This is usually achieved through meditation and study under an accredited teacher. Alternatively, one can be 'born that way', which would generally infer the Samadhi is a samskara gained in an earlier life. One analogy of this degree of control would be, to quote from memory, a part of Frost's poem: "Two paths diverge in the wood, I took the path less travelled, and that has made all the difference". The more familiar paths, so far as Samapatti is concerned, are the endless stream of thoughts all centred around the concept of 'me'. Choosing a state without thought takes some considerable control. It means choosing the state of Mahat rather than the sum of momentary histories generally found in one's thoughts.

I believe the Yoga diagram is a statement of the quantum state in which matter and information are operating in a reflexive system where simultaneously, information precedes action, and action precedes information. This is portrayed on the diagram as Ahamkara, self, driving both mind and body through the activity of Rajas. Using Wheeler's 'Quantum Foam' as an example of the interface between massless particles becoming and matter becoming massless particles, gives us a way of understanding that the experience of particles which become real matter is retained in the nonlocal state, and of this information having an influence on the real matter in the next moment of real time.

The information related to the senses is retained as a neural context and presented by the next iteration of the activity of Rajas. I consider this Rajasic activity to be what we call brain waves. The principles of least time and least action lie at the heart of these responses that emerge from the simultaneous record, expressed initially at the quantum level to create the matter and the subsequent life of these forms. The Samadhi state needed for Samapatti is present when this Rajasic activity is at a minimum of around 5-6 Hertz.

Consciousness in living forms is the individual set of momentary responses at the cellular level being coordinated by its neural equivalent in the brain, as a more or less distinct self-aware form in every life throughout the whole reality. Patanjali uses Samapatti his example of how two minds can coalesce in that state to demonstrate the two distinct aspects of memory employed by

Mahat as the dispassionate observer. Samapatti also demonstrates how the seer appears to have two viewpoints, that of the seer and of the subject, which is really Mahat making both observations simultaneously.

On the issue of consciousness in respect of the validity, or not, of free will, I can only say that it is likely that free will is the state in which conscious thought precedes action. If one is consciously aware of the thought then whatever the next step, it is generally considered to have been chosen freely. To a significant degree the question of free will can often be part of a defence against needing to take responsibility of one's action.

The question of whether the universe is a cyclic or steady-state model has little bearing on the question of consciousness, because that is a question of either a single singularity or many simultaneous singularities, and either way, at any one point in its evolution there would inevitably be just one universe forming the observer's viewpoint. Patanjali's conclusion is that in Prakriti, the whole reality, there is only one self, Mahat, as the observer. From that perspective I am inclined to think that what we call consciousness is also just one amorphous set of responses from the universal set of Planck Length singularities, individuated in every living cell of every living form in the present moment. The actual moments are derived from the oscillations of the energy, latent in a spherical standing wave and its harmonics, and the inevitable variations of phase in the quantum state.

From the quantum perspective, every sub-Planck Length particle within the Quantum Foam can be envisaged as every particle within the whole reality, which provides the opportunity for the whole reality affected by the fundamental oscillations and their relationship to every influence upon each particle simultaneously. So, what Patanjali is telling us is that as the first oscillation, Mahat is both separate in the sense of identity and simultaneously integral with every variation of the oscillations throughout the whole reality. This separation of identity is what makes Mahat dispassionate, and it is why anyone in Mahat's Samadhi state is similarly dispassionate and without grief. Mahat's sum over histories is zero, a crucial point to note because this is the source of Buddhi, the faculty of discrimination. With each oscillation observed, Mahat discriminates through intelligence in that each observation is known as not-self, meaning non-Mahat and the resulting sum over histories is the experience being observed. The word, observed, is really pointing out the effect of variations in the basic oscillation of Mahat which arises from changes in the momentary context related to any point of matter or particle. Since the retention of each change of context is in the simultaneous or quantum state, it can be regarded as information related to an observation and to be a fundamental of the whole reality.

The model of reality in the Yoga diagram provides food for thought about the whole of the body and its functions, be they thought, reason, communication, or the autonomic systems such as immune systems, breathing, cardiovascular, nervous systems, brain activity etc. The universe is replete with what some might call an inferred external intelligence, with consciousness thrown in for good measure in the case of living systems. The software appears to be based on stimulus and response, with the momentary context at the quantum level of matter and non-matter deriving the related information to be accessed and operated on to provide the activity within the next moment. For we, the conscious living, the quantum state information creates the matter which is the chemistry and structure of the neural pathways in the brain on the subjective right-hand side

on the diagram. That same momentary structure is the context which presents the corresponding cognition in our awareness as mind. What may be less obvious is the singular viewpoint of Mahat as the only observer, while all of Mahat's observations are simultaneous which led the ancient teachers to refer to the whole reality as a non-duality.

4. The dispassionate observer

The diagram representing the 'descent' of consciousness into matter infers that consciousness is above reality, with 'above' being an euphemism for separate. Patanjali tells us that Purusha is without distinguishing mark, which can be taken to mean unaffected by its observation of reality. Whether one takes Purusha as the seer and Mahat as the subject or vice versa in a context of Samapatti is irrelevant because either way Mahat remains unaffected by its observation. This is the basis for saying Mahat is the dispassionate observer, which is the inference from the Hindu traditions.

When this tradition reached the Middle Eastern cultures, part of it was absorbed into the beginnings of the Mosaic Genesis story, which included ideas such as darkness preceding light and matter. With their own Hebrew tradition of a judgemental God, it was left to Jesus to mitigate that judgemental stance; introducing forgiveness as an aspect of God and co-opting the directive, 'do unto others as you would have them do unto you,' from the Hindu, Chinese and Buddhist traditions from at least 300 years earlier. What became forgiveness was originally 'being without judgement', which in quantum speak means having zero (Mahat) as the starting point against which we compare any sum over histories.

In my own country of Australia, the retained information related to the massacres of the indigenous cultures by the British settlers is a source of continuing grief for the first Australians who had lived here for over sixty thousand years prior to the place being 'discovered' by Captain Cook in 1770. He falsely reported the country to be uninhabited, a 'terra nullius', and since that time the land has been treated as being empty, which led to the indigenous people not even figuring in the Australia Constitution. In the past I have said that How One Thinks determines What One Can Think. This is especially true of Australia's current Constitution. The continuing effects of terra nullius are still operating and will continue to be so until the frontier wars and their denial of indigenous existence are acknowledged by having a place in our traditions and our education syllabus.

I am sure there are many questions one can ask of or about the quantum mind and its apparent consciousness; it is simply a matter of being there in that state and asking your own question, or finding someone who is in that state, be that a teacher, a psychic, a rishi or a particle. The irony is that consciousness, creation, matter, life, philosophy and science, all operates within the same AI algorithm; some call it God. We congratulate ourselves on our intellect, much of which is devoted to war against our own species. Insects, birds and fish can co-operate to swim as a shoal or fly as a flock for safety in numbers while ants can construct air conditioning from soil and moisture, bees harvest nectar, all of these living forms operate for the common benefit through effortless effort; we have much to learn and implement for the same reason.

The bottom line is that consciousness is forever, and the body is a single-use object. From this perspective it is entirely reasonable that the soul/Atman resides at the level of Mahat and can have many lifetimes of experiences in many bodies, possibly at the same time. To that extent it is another version of Quantum Foam where physical bodies rather than particles emerge into and out from the momentary reality. To understand this truth is to live without grief. I am sure there are mathematicians who could write this essay in their own scientific language.

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